



Climate Challenge Programme Malawi: Participatory Vulnerability and Capacity Assessment Report



Community members in Kachijuni, Chimtendere, Majawa Group Village Head Matola, Balaka district, southern Malawi, May 2018. (Photo credit: Raphael Mkwate, Eagles Project Facilitator)

Prepared by Trócaire Malawi

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ACRONYMS

| | |
|----------|---|
| ADC: | Area Development Committee |
| AEDO: | Agricultural Extension Development Officer |
| CADECOM: | Catholic Development Commission of Malawi |
| CARD: | Churches Action in Relief and Development |
| CBCC: | Child Based Care Centre |
| CCA: | Climate Change Adaptation |
| CCPM: | Climate Challenge Programme Malawi |
| CICOD: | Circle for Integrated Community Development |
| DADO: | District Agriculture Development Officer |
| DHS: | Demographic and Health Survey |
| DPD: | Director of Planning and Development |
| DRR: | Disaster Risk Reduction |
| EAM: | Evangelical Association of Malawi |
| EPA: | Extension Planning Area |
| FAW: | Fall Army Worms |
| FHH: | Female-Headed Household |
| GVH: | Group Village Headman* |
| IGA: | Income Generating Activity |
| MASAF: | Malawi Social Action Fund |
| MHH: | Male-Headed Household |
| MIHS: | Malawi Integrated Household Survey |
| MVAC: | Malawi Vulnerability Assessment Committee |
| NGO: | Non-Governmental Organization |
| NSO: | National Statistic Office |
| NRM: | Natural Resource Management |
| PICS: | Purdue Improved Crop Storage (bags) |
| PLWHA: | People Living with HIV/AIDS |
| PVCA: | Participatory Vulnerability and Capacity Assessment |
| TA: | Traditional Authority* |
| VCPC: | Village Civil Protection Committee |
| VDC: | Village Development Committee |
| VH: | Village Headman |
| VLAP: | Village Level Action Plan |
| VNRMC: | Village Natural Resource Management Committee |
| VSL: | Village Savings and Loans |
| WFP: | World Food Programme |

*The terms 'Group Village Headman' and 'Traditional Authority' each have two meanings, referring both to a local leadership post and a geographic area. A GVH is a group of villages, and a TA is a group of GVHs.

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Background of the CCPM and the PVCA

SCIAF and Trócaire Malawi are contracted by the Scottish Government's Energy and Climate Change Directorate to deliver the **Climate Challenge Programme Malawi (CCPM)**, which began in October 2017 and will conclude in September 2020 with the possibility of a one-year extension to 2021. The programme aims to improve resilience to current and future climate change by developing and implementing adaptation strategies and measures that will improve agricultural production and rural livelihoods in Balaka, Chikwawa, Machinga and Zomba districts in the Southern Region of Malawi.

In order to develop the capacity of communities to cope with the impact of, and adapt to, climate change, the programme will follow an integrated community-based climate change adaptation approach to build communities' livelihood resilience, diversify their livelihood options, and support them to conserve resources and reduce disaster risks associated with climate change.

Trócaire and its partners conducted the Participatory and Vulnerability Capacity Assessment (PVCA) from 7th May to 31st May in three districts of Balaka, Chikwawa and Machinga, and in Zomba in September 2018. In the PVCA process, participatory tools are used to aid community members to systematically identify and analyse their problems linked to climate change, and to suggest their own context-specific solutions on how to overcome these problems. PVCA focuses on the hazards and climate shocks historically faced by communities, to gain a nuanced understanding of how communities are experiencing and reacting to climate change locally. PVCA also focuses on communities' own resources and capacities, and promotes community-based planning and ownership, to support communities to develop community action plans for DRR and climate change adaptation (CCA) to ensure impact and sustainability.

The approach aims to:

1. Document community members' current understanding of climate change and its impact on their livelihoods;
2. Document how communities perceive risks and threats to their lives and livelihoods, and identify key vulnerabilities of communities in CCPM programme areas;
3. Support communities to analyse the resources (capacities) available in their communities which can be used to address identified risks;
4. Support communities to develop their own action plans to adapt to climate change and reduce the risks and impacts from disasters and climate shocks, ensuring that interventions are relevant and appropriate to local contexts;
5. Contribute towards the establishment of a baseline for the evaluation of the CCPM programme;
6. Bring partner organizations into close association with CCPM participating communities to build trust and a strong foundation for effective programme implementation.

The results of the PVCA informed the CCPM programme design. No programme activities were determined before the PVCA, rather the community action plans developed through the PVCA process will determine the activities of the CCPM.

PVCA Methodology

A systematic process was followed in conducting the PVCA. This included:

1. Training staff members of six implementing partner organizations and district counterparts
2. Collecting and analysing secondary data
3. Administering the PVCA tools to collect primary data
4. Analysing the data on hazards and community experiences
5. Developing community action plans

Six Trócaire implementing partners – CADECOM Chikwawa, CADECOM Mangochi, Churches Action for Relief in Development (CARD), Circle for Integrated Community Development (CICOD), Eagles Relief and Development Programme International (Eagles Relief), Zomba Diocese Research and Development Department (ZARDD) – and their government counterparts (at EPA and district levels) were trained on how to conduct the PVCA.

PVCA activities were conducted in all 17-group village heads (GVHs). If conducted at the Traditional Authority (TA) level, the PVCA would have resulted in a cumbersome data collection process and produced less contextually relevant information, as TAs are large geographic areas. Conducted at the village level, PVCA would have produced very rich, contextually specific data, but it would have been a very labour-intensive and time consuming process to survey a representative number of villages, as there are 156 villages engaged in the CCPM across 17 GVHs of varying sizes. Therefore, it was determined that PVCA conducted at the GVH level would produce the most useful data most efficiently (see Table 1 below).

Community members participating in the PVCA exercise were drawn from different committees, representing different sectors. These were ADC, VCPC, VDC, CADECOM and Government staff, lead farmers, VHs, and VNRMC. Particular strategies were put in place to ensure the meaningful participation of women, for example ‘female only forums’. Community mobilization and sensitization meetings were conducted to brief the whole community about the project and ask for their full participation in identification of the climate hazards that affect their livelihoods.

Efforts were made to include participants from different vulnerable groups in communities, such as disadvantaged men, women (from both Male-Headed and Female-Headed Households, MHHs and FHHs), youth, elderly, as well as the disabled. Elderly members of the community were

particularly encouraged to participate in the historical timeline activity. Of participants registered¹ in the CCPM, 14.3% are aged 65 and older, and a total of 29.9% of registered participants indicated that they or a member of their household are elderly.

In Malawi youth are defined by the government as people aged 18-35, but practically, once a person marries, they rarely identify as a 'youth' anymore, regardless of their age. Similarly, once a woman has a child she is a mother, and therefore no longer a 'youth'. As the median age at first birth is 19.1 for women aged 20-49, (Malawi DHS 2015-16), this means that the classification of youth, especially for women in the programme, can be complicated, as many women may not self-identify as a 'youth' even if they are technically in this age range. A total of 40.2% of registered participants are youth according to their age.

Table 1. GVHs where PVCA was conducted

| | Group Village Head (GVH) | Traditional Authority (TA) | Partner | District |
|----|--------------------------|----------------------------|---|----------|
| 1 | Phimbi | Nkaya | Eagles Relief and Development International | Balaka |
| 2 | Matola | Matola | | |
| 3 | Tembo | | | |
| 4 | Lundu | Chapananga | CADECOM | Chikwawa |
| 5 | Gaga | | Chikwawa | |
| 6 | Masanduko | Ngowe | CICOD | |
| 7 | Mwanawanjovu | | | |
| 8 | Nkhungubwe | | | |
| 9 | Mchacha | | | |
| 10 | Mangamba | | | |
| 11 | Ngongondo | | | |
| 12 | Chilala | | | |
| 13 | Mnkumba | Nsanama | CARD | |
| 14 | Mangulu | | | |
| 15 | Chaweza* | Mwambo | ZARDD | Zomba |
| 16 | Kathebwe | | | |
| 17 | Magoli | | | |

*Chaweza GVH has a population about double the size of the other two GVHs where ZARDD is working, so ZARDD has split it for programme administration, and therefore conducted the PVCA twice, once in each part of the GVH, therefore the PVCA was conducted a total of 18 times.

¹ One participant per household is registered under the CCPM, for a total of 8,646 registered participants representing 8,646 households. However, all members of the household participate in the programme, for a total of 47,197 total participants.

Women and men participated in PVCA activities at about equal rates. Approximately 655 women and 668 men participated in the PVCA across the three districts. Below is an example of the gender make-up of PVCA participants from one partner.

Table 2. Gender representation of PVCA participants in Balaka district, Eagles Relief

| GVH | Female | Male | Total |
|--------------------|------------|------------|------------|
| Matola | 101 | 109 | 198 |
| Tembo | 96 | 97 | 183 |
| Phimbi | 78 | 74 | 152 |
| GRAND TOTAL | 275 | 288 | 533 |

Participatory Tools

Partners and government counterparts were trained on nine participatory appraisal tools, however not all partner organizations facilitated all tools. CADECOM Chikwawa, CICOD, and Eagles Relief administered all nine tools in communities, while CADECOM Mangochi administered seven and CARD facilitated five tools. When a partner chose not to administer all nine tools, they selected the ones they were most familiar with and confident that they could collect and analyse data for actionable insights.

Table 3. A summary of tools used during the PVCA

| | Tool | Objective/Purpose |
|---|--|--|
| 1 | Stakeholder mapping | <ul style="list-style-type: none"> To Identify all key interested parties in the project (i.e. influencers, those who may feel positive or negative about the project, who will be impacted, etc.) |
| 2 | Problem/solution tree and pruning | <ul style="list-style-type: none"> Highlights the compounding causes and effects of a specific identified problem faced by households in a Village. Propose activities to overcome some of the causes and effects of the problem faced by households in a Village. |
| 3 | Historical timeline / Long-term trend analysis | <ul style="list-style-type: none"> Understand the history of the Community. Identify key events and trends throughout history of the Commune or Village—either positive or negative. Discuss the effect (<i>influences</i>) of key events in history. |
| 4 | Daily time chart | <ul style="list-style-type: none"> Collects information on the daily activity patterns of community members and compares the patterns of different groups in the community (women, men, elderly, employed, unemployed, etc.) |

Table 3 contd. A summary of tools used during the PVCA

| | Tool | Objective/Purpose |
|---|---|--|
| 5 | Seasonal calendar | <ul style="list-style-type: none"> • Exercise to identify and discuss seasonal events and activities (cropping, livestock, migration, income/ expenditure) |
| 6 | Hazard and Risk analysis, Risk Quadrant, Hazard Assessment matrix | <ul style="list-style-type: none"> • Hazards affecting the community are mapped and ranked (pairwise ranking), and displayed in a Risk Quadrant or Matrix to understand risk in terms of impact and probability |
| 7 | Resource, Hazard, market mapping and transect walk | <ul style="list-style-type: none"> • A Resource Map is prepared by the community to provide an understanding of which places and resources are used for what purposes in their locality. Then identify the hazards and which areas and resources are the most affected. |
| 8 | Resilience tool | <ul style="list-style-type: none"> • To identify a picture by people about their community on level of development in future. The community highlights challenges, needs, and coping strategies. |
| 9 | Wealth ranking | <ul style="list-style-type: none"> • Identify household perceptions of wealth classes in a Village. • Identify the resources and characteristics of each Wealth class. • Determine the wealth class of individual households in a Village. |

Hazard Analysis

Balaka

Balaka district has a population of 438,379 (Population and Housing Census 2018 Preliminary Report), with 53.1% of the population under 18 years of age. A total of 12.0% of women and 4.4% of men aged 15-49 are HIV positive (Malawi DHS 2015/16), and Balaka has high illiteracy at 24.9% of people over the age of 15 (fourth Malawi Integrated Household Survey 2016/17). In a subjective self-assessment of poverty, 39.1% of respondents in Balaka categorized themselves as 'very poor', and 33.9% of respondents classified themselves as 'poor' (MIHS 2016/17).

Most people in the district are subsistence farmers who earn income from the sale of farm produce and merchandise. However, in 2016/17, Balaka experienced persistent dry spells that greatly affected crop yields that growing season. According to the Malawi Vulnerability Assessment Committee (MVAC) report (2016), 333,943 people in Balaka were food insecure for eight months (August 2016 to March 2017). A total of 87.9% of households in Balaka reported not having enough food throughout the previous 12 months (MIHS 2016/17). In terms of water, 89.4% of households in Balaka have access to an improved water source. Only 7.7% of households have electricity, and 87.3% of households use firewood as their main source of fuel for cooking, while 12.7% use charcoal, (not electricity or crop residue).

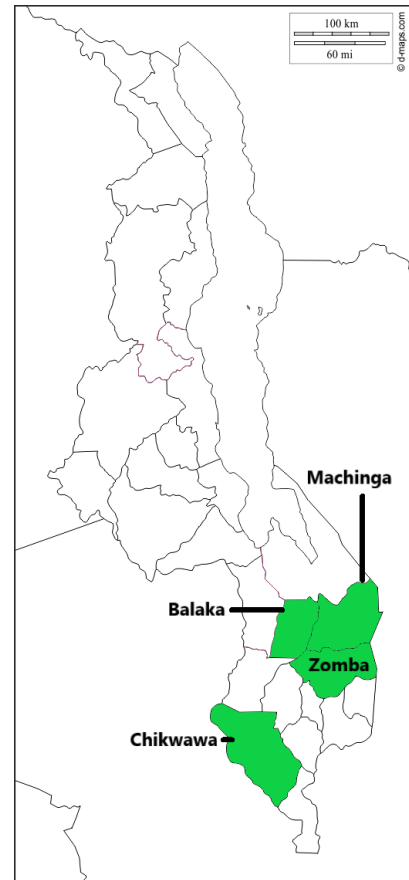


Figure 1. CCPM Districts



Figure 2. Women and men in GVH Tembo, Balaka district, create a seasonal calendar showing key activities throughout the year, May 2018. (Photo credit: Raphael Mkwate, Eagles Relief Project Facilitator)

Eagles Relief and Development International (Eagles Relief) is implementing the CCPM in TA Matola and TA Nkaya. Few other NGOs operate in this area, considering that TA Nkaya in particular is very far from Balaka town and difficult to reach during the rainy season. No other NGOs operating in these TAs are implementing similar climate change-related interventions to those under the CCPM.

Eagles Relief conducted PVCA activities in three GVHs. For community

members in all three GVHs, droughts, or prolonged dry spells, were ranked as the number one most serious hazard affecting their community, likely due to the dry spells experienced recently in 2016/17. Pests were the second most serious hazard experienced by community members in all three GVHs. Human disease (sickness), soil erosion (caused by heavy rains, which occur between December and February), and cyclones (which typically happen between March and November) were each mentioned by community members in all three GVHs. All of these hazards have occurred at least once over the past 30 years, as discussed by community members when completing historical timelines.

Table 4. Hazards experienced in Balaka District, ranked

| | GVH Matola | GVH Phimbi | GVH Tembo |
|---|--------------|-----------------------------|------------------|
| 1 | Drought | Prolonged dry spell/drought | Drought |
| 2 | Pests | Pests outbreak | Pests |
| 3 | Sickness | Increased precipitation | Sickness |
| 4 | Soil erosion | Human diseases | Soil erosion |
| 5 | Cyclones | Cyclones/strong winds | Cyclones |
| 6 | | | Soil degradation |



Community members used pair-wise ranking, in which pairs of hazards were compared to each other and ranked, in order to determine the most pressing hazards for their community. An example of this from GVH Phimbi is included below.

Table 5. Pair-wise ranking of hazards, GVH Phimbi.

| | Prolonged dry spell-drought | Cyclones/Strong winds | Pests | Increased precipitation resulting in flooding, increased soil erosion and degradation | Human diseases |
|------------------------------|-----------------------------|------------------------------|------------------------------|---|------------------------------|
| Prolonged dry spell- drought | | Prolonged dry spell- drought | Prolonged dry spell- drought | Prolonged dry spell- drought | Prolonged dry spell- drought |
| Cyclones/ Strong winds | | | Pests | Increased precipitation | Human diseases |
| Pests | | | | Pests | Pests |
| Increased precipitation | | | | | Increased precipitation |
| Human diseases | | | | | |

Community members determined the probability and impact of the hazards, and plotted them in a risk quadrant. Below is an example, also from GVH Phimbi. The two hazards ranked highest, prolonged dry spells/droughts and pests, were deemed so by community members to have the greatest impact and to occur the most frequently.

Table 6. Risk Quadrant for GVH Phimbi

| | | |
|--|--|--|
|  IMPACT | Low Probability High Impact <ul style="list-style-type: none"> • Cyclones/ Strong winds • Human diseases • Increased precipitation resulting in flooding, increased soil erosion and degradation | High Probability High Impact <ul style="list-style-type: none"> • Prolonged dry spells-drought • Pests outbreak |
| | Low Probability Low Impact | High Probability Low Impact |
| PROBABILITY  | | |

Chikwawa

Chikwawa district has a population of 564,684 (Population and Housing Census 2018), with 51.8% of the population below the age of 18. Chikwawa generally experiences unreliable and variable rainfall ranging from a minimum of about 170 millimetres to a maximum of about 968 millimetres, likely because it is located below the Shire Highlands. The wet season lasts from about November/December until April/May, when the dry season commences.

According to the Chikwawa district Socio-economic profile (July 2017), the major problems facing the district (in order of priority) are: food insecurity, low accessibility to safe water and sanitation, high morbidity and mortality, high illiteracy (41.4% of the population over the age of 15), poor communication infrastructure, environmental degradation, poor urban planning, high prevalence of HIV/AIDS (8.4% of women and 6.5% of men aged 15-49), poor livestock management, unsustainable technologies and projects, declining fish stocks, wildlife/human conflict over resources, and a rise in crime. A total of 39.8% of people in Chikwawa consider themselves to be 'very poor' and 27.6% classify themselves as 'poor' (MIHS 2016/17). A total of 89.6% of people living in Chikwawa did not have enough food throughout the previous 12 months, though 86.5% have access to an improved water source. Only 6.4% of people living in Chikwawa have electricity. A total of 85.8% of households use firewood as their main fuel source for cooking, while 13.6% use charcoal.

Two partners, CADECOM Chikwawa and CICOD, are working in six GVHs in Chikwawa district. CADECOM Chikwawa is working in the communities of GVHs Lundu and Gaga in TA Chapananga, which were selected for participation in the CCPM as hazard prone areas at the ADC meeting held at Chapananga court on May 4th, 2018. The two GVHs have hills with serious deforestation and much bare land along the Mwanza and Ngona rivers due to firewood fetching, charcoal burning, and cultivation along the river sources and riverbanks to support their livelihoods. The villages are located very far from the district headquarters hence have few or no other NGOs working in the area. GVHs Lundu and Gaga have many villages under them with diverse topographic pattern. The communities are closer to the Mozambique border than they are to Chikwawa district Headquarters. Most of these people belong to Nyungwe tribe but they all speak Chichewa and Chimang'anja as major languages.

CICOD is working in Traditional Authority (TA) Ngowe, which is located at the South East part of Chikwawa District, 18 kilometres away from Ngabu trading centre. CICOD was appointed to work in this area by the District Executive Committee (DEC) having analysed that the area has been adversely affected by climate shocks such as droughts and floods.

In recent years, floods, drought, and Fall Army Worm (FAW) have affected food production in TA Ngowe, which has also been deforested, so women must travel long distances to look for firewood, as most people cannot afford electricity or solar energy. Additionally, TA Ngowe is characterised as a saline area. The water is salty and not suitable for domestic purposes. Community members in Masanduko GVH resort to drinking water from rivers, which is not much cleaner than the salty water from boreholes. Having the Shire River nearby is an advantage, however most people in TA Ngowe lack irrigation materials.

Flooding makes TA Ngowe difficult to access during the rainy season, so few aid organizations have reached TA Ngowe with interventions. Communities in TA Ngowe experience poverty, food insecurity, limited access to potable water, and poor housing. CICOD is working under the CCPM in all four GVHs in the TA: Masanduko, Mchacha, Khungubwe and Mwanajovu GVHs, covering 15 villages in total.

Machinga

Machinga district has a population of 735,438 (Population and Housing Census 2018), 55.4% of whom are under the age of 18. A total of 34.4% of people in Machinga over the age of 15 are illiterate. It has an HIV/AIDS rates of 8.3% for women aged 15-49 and 3.1% for men. A total of 51.6% of people in Machinga classify themselves as 'very poor' in a subjective self-assessment, the district with the third highest proportion in Malawi (MIHS 2016/17). A total of 93.9% of people in Machinga did not have enough food throughout the past 12 months (MIHS 2016/17), while 81.2% have access to an improved water source. Only 2.1% of households in Machinga have electricity. A total of 94.2% of

households use firewood as their main source of fuel for cooking, and 5.8% of households in Machinga use charcoal.

CADECOM Mangochi are working in TA Liwonde, in GHVs Mangamba, Ngongondo and Chilala, which is located to the west of Machinga district, covering an area of 272 square kilometres. It has a population of 94,119 people as projected in 2013. TA Liwonde has 17 GVHs and 95 villages. Each GVH has approximately 6 villages and each village has an average of 991 people. It has one Extension Planning Area (EPA), Mbonechera EPA, which has 32,402 farming families representing 14.4% of Machinga district. The EPA has 20 established sections; only 7 are filled with extension workers.

CARD conducted the PVCA in TA Nsanama in Machinga District, which is located to the East of the district seat and it has a total area of approximately 354 square kilometres and an approximate population of 10,169 households. The TA constitutes 19 GVHs with each GVH having an average of 630 households and 59 villages with each village having at least 145 households. TA Nsanama has two Extension Planning Areas called Mbonechera (shared with TA Liwonde) and Nsanama EPA located at Nsanama trading centre.

According to the Land Resource Conservation Officer in Machinga District, population growth has caused land to be depleted and many trees to be cut down which in turn is causing dry spells almost every year. The Land Resource Conservation Officer further said that dry spells are occurring more frequently than they did in the past, and this poses a threat to communities now and in the years to come.

He further explained that many people rely on natural resources as a means of survival, such as trees for charcoal production, since agricultural proceeds are unpredictable and because people have limited sources of income to help them cope with climate shocks. Frequent cutting down of trees for charcoal production and the cultivation of hilly areas has caused soil erosion and siltation in rivers. Most of the



Figure 3. Women and men in GVH Mangulu, Machinga district, conduct hazard analysis, May 2018. Photo credit: Chinsisi Daudi.

rivers are drying up because of lack of adequate rainfall. Furthermore, many people are cultivating

along the riverbanks and in the rivers when the water levels are low in search of irrigation and because they do not have sufficient land for farming. Farming in and along riverbanks causes soil erosion.

Similar to communities in Balaka, community members in TA Nsanama ranked dry spells as the most important hazard that they face, followed by pests/diseases and strong winds (tied for second most important hazard). For communities in TA Nsanama, floods were ranked the least important of the four hazards discussed, as community members determined that floods have a low probability of occurring. In fact, none of the three GVHs mentioned floods in their historical timelines recalling events of the past 30 years.

Communities note the frequent cutting down of trees and erratic rainfall patterns as contributing factors to low agricultural productivity levels. Over the years, TA Nsanama has frequently experienced prolonged dry spells, affecting households' food security and access to potable water. Below, an example of a historical timeline produced by community members is presented. When conducting this activity, CARD made efforts to specifically include elderly women and men in the exercise, as they could recall the events of the past 30 years to complete the exercise.

Table 7: Historical Timeline of GVH Mkhumbwa, Machinga district

| YEAR | EVENT | IMPACT |
|-------------|---|--|
| 1975 - 1992 | Loan fertilizer distribution by HE Kamuzu Banda's leadership | <ul style="list-style-type: none"> • High crop yields by households leading to food security • High household income levels after crop sales as a result of bumper yields |
| 1988 | Prolonged dry spells | <ul style="list-style-type: none"> • Food shortage • No access to water for household or farm use • Low income as a result of low yields • Livestock sold as a coping strategy |
| 1990 | Pest attack of cotton crop | <ul style="list-style-type: none"> • Low cotton production levels • Low income realised due to low production |
| 1995 - 2004 | Distribution of Starter pack (fertilizer, maize seed, groundnuts and beans) by the government | <ul style="list-style-type: none"> • Low household productivity levels as the starter pack was not enough |
| 1996 | Locust (dzombe) outbreak in rice | <ul style="list-style-type: none"> • Low rice production • Low income levels • Increased level of food shortages |

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| 1997 | Wildlife animals from Liwonde National Park attacked their village | <ul style="list-style-type: none"> • Crops were destroyed • 1 life was lost • Livestock was lost |
| 2000 | Heavy and strong winds | <ul style="list-style-type: none"> • Houses were destroyed • 5 people were seriously injured |
| 2000 | Very good rains | <ul style="list-style-type: none"> • High yields • High income per household • Households were food secure |
| 2001 - 2002 | Lack of enough rainfall | <ul style="list-style-type: none"> • Hunger (food insecurity) |
| 2001 - present | Social cash transfer | <ul style="list-style-type: none"> • Households in the community have been able to buy livestock • Livelihoods of the people in the community have improved • Very few extremely poor households benefit |
| 2002 - 2003 | Careless cutting down of trees by the community members | <ul style="list-style-type: none"> • Low rainfall • Low yields • Low income as a result of low sales of products |
| 2004 | Pest attack on cassava (nsabwe) | <ul style="list-style-type: none"> • Low cassava production • Low income as a result of low cassava sales |
| 2005 - 2006 | Lack of enough rainfall | <ul style="list-style-type: none"> • Hunger (food insecurity) |
| 2005 - present | Farm input subsidy program | <ul style="list-style-type: none"> • Productivity levels increased in the first years of the program, but have now declined because of the general price increase of inputs |
| 2013 - present | Lack of adequate water points | <ul style="list-style-type: none"> • Threats of cholera outbreaks • People travel long distances to fetch water |
| 2014 to 2015 | Erratic rainfall and heavy winds | <ul style="list-style-type: none"> • Stunted growth of crops leading to hunger and food insecurity • Soil fertility was washed away |
| 2016 to 2017 | <ul style="list-style-type: none"> • Prolonged dry spells • Fall army worms | <ul style="list-style-type: none"> • Low yield from crops hence food insecurity • Low household income |
| 2017 to present | <ul style="list-style-type: none"> • Fall army worms in maize and cotton • Prolonged dry spells | <ul style="list-style-type: none"> • Low crop yields hence food insecurity • Low household income |

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|-----------|---|--|
| 2017-2018 | Electric fence built by the management of the national park | <ul style="list-style-type: none"> • Reduction in number of animals from the game reserve destroying their crops • Reduced death rates of members of the community |
| 2018 | Access to nearest markets to sell produce | <ul style="list-style-type: none"> • High household income levels • Households are food secure • They do not travel long distances to sell their produce |

The very good rains in the year 2000 show the importance of adequate rains, and that community members can easily connect the effect of food security and adequate household income with the cause. It is also clear that different community members are impacted to varying degrees by different weather and other events. For instance, it is interesting that community members perceive that very few extremely poor households actually benefit from social cash transfer.

Community members were asked to comment on the frequency of events. As of now, prolonged dry spells are the most frequently occurring hazard. It is hoped that planting trees will reduce this in the coming 30 years. Table 9 below illustrates the frequency of events in the past, their present status, and what community members think their frequency will be in the years to come.

Community members believe that prolonged dry spells will occur less frequently in the future as a result of the tree planting they have begun to do. They believe that pests in cotton will always affect them as they have perceived that no company has developed good pesticides to eliminate these pests, demonstrating that communities are unfamiliar with or choose not to use natural methods of pest management. Community members in GVH Mnkumbwa do not believe they will have a problem with locusts in the future because presently the locusts are in other parts of Malawi, but not where they are, and they believe this trend will continue. Heavy winds have not occurred too frequently and the community does not expect this to change.

Community members do not believe that FAW will affect them in the future because according to them, FAW is considered an outbreak that pesticide companies are prioritizing and on the verge of developing a solution. It is interesting that community members see cotton pests as inevitable, something that they must learn to live with, but trust that companies will find a chemical solution to the problem of FAW. Communities are confident that sensitizations against careless cutting down of trees will work to reduce this practice, and that their planting of community forests will also serve to reduce the likelihood of deforestation in the future. Finally, they believe the tree planting will also help to prevent erratic rains in the future.

Table 8: Frequency of events in GVH Mnkumbwa, Machinga district

| Event | Frequency | | | | |
|-----------------------------|--------------------------|--|------------------------------------|---|------------------------------|
| | In the past | Present status | In 5 years to come | In 10 years to come | In 30 years to come |
| Prolonged dry spells | Did not occur frequently | Occurs frequently (2 or more times per year) | Will continue occurring frequently | Will not occur frequently | Will not occur as frequently |
| Pests in cotton | Never existed | Occurs every year | They will continue occurring | They will continue occurring | They will continue occurring |
| Locusts (Dzombe) | Was occurring frequently | Does not occur anymore | Will not occur anymore | Will not occur anymore | Will not occur anymore |
| Heavy winds | Did not occur frequently | Does not occur frequently | Will not occur frequently | Will not occur frequently | Will not occur frequently |
| Fall army worms | They never existed | Occurs frequently (2+ times per year) | Will not occur frequently | Will not occur frequently- the extent will further be reduced | Will not occur anymore |
| Deforestation | Did not occur frequently | Occurs frequently (2+ times per year) | Will not occur frequently | Will not occur frequently | Will not occur frequently |
| Erratic rainfall | Did not occur | Occurs frequently (2+ times per year) | Will not occur frequently | Will not occur frequently | Will not occur frequently |

Zomba

Zomba District has a total population of 746,724 more than half (51.8%) of whom are younger than 18 years old. A total of 31.6% of people over the age of 15 are illiterate, and Zomba has the highest prevalence of HIV/AIDS of the four CCPM districts, with 16.8% of women aged 15-49 and 9.3% of men HIV positive. Zomba district is tied with Mchinji with the highest proportion of people (58.3%) identifying as 'very poor' in a subjective self-assessment, and an additional 30.8% self-identifying as 'poor' (MIHS 2016/17). A total of 89.3% of people in Zomba district did not have enough food throughout the past 12 months, though 83.0% of people have access to an improved water source (MIHS 2016/17). Almost all households in Zomba use firewood as the main source of fuel for cooking, at 96.0%, with only 2.4% using charcoal as their main source. Zomba is the least electrified of the CCPM districts (0.3%, MIHS 2016/17).

Zomba Research and Development Department (ZARDD) of Zomba Catholic Diocese is working in TA Mwambo, in three GVHs of Chaweza, Kathebwe and Magoli. TA Mwambo has a total area of 482 square kilometres with a total population of 177,274; which has 13 GVHs with a total of 325 villages. Mpokwa and Likangala EPA are under TA Mwambo but CCPM is only implemented within Mpokwa EPA. Chaweza is the largest GVH with 4,855 households (2,409 FHHs, 2,446 MHHs), followed by Kathebwe with 3,066 households (1,637 FHHs, 1,429 MHHs) while Magoli has 1,953 households (1,217 FHHs and 736 MHHs).

The area is blessed with Lake Chilwa, the second largest lake in Malawi. Lake Chilwa is now completely dried up, which has compromised the livelihoods of the people who live in the area since the lake had been their main source of income through fishing activities.



Figure 4. Part of Lake Chilwa in GVH Kathebwe, which has dried up, 20 October 2018. Photo credit: Ganizani Nansongole, ZARDD.

The Zomba DEC meeting revealed that TA Mwambo is prone to dry spells/drought, soil degradation, flooding, receives erratic rainfall, has no sufficient renewable source of energy due to deforestation, has experienced a decline in agricultural yields, and is generally vulnerable to climate change.

Summary of hazards

During the PVCA, communities were requested to rank the hazards in terms of their extent and severity. Three partners provided hazard-ranking data. Eagles Relief and Development International provided individualized hazard data for three communities where the tool was administered; CARD and CADECOM Chikwawa consolidated data across all communities where they conducted the PVCA. Some partners did not report on individual tools in their PVCA reports.

Communities consistently ranked dry spells/droughts and pests as the top two hazards. Dry spells and droughts were ranked first by almost all communities. Pests were ranked second in four communities, first in one, and mentioned by two additional communities. While cyclones/strong winds were mentioned by all eight communities as a top priority, it was frequently ranked as less significant than other hazards mentioned. The drying of Lake Chilwa is a hazard to all three GVHs where the CCPM will be implemented in Zomba district.

Table 9: Frequency of hazards across all 4 programme districts

| | Hazard | Frequency ² | Score ³ |
|---|--|------------------------|--------------------|
| 1 | Prolonged dry spell / drought | 7/8 | 34 |
| 2 | Pests | 7/8 | 26 |
| 3 | Increased precipitation / flooding | 6/8 | 20 |
| 4 | Cyclones / strong winds | 8/8 | 15 |
| 5 | Human disease / lack of potable water | 4/8 | 11 |
| 6 | Soil erosion / soil degradation / land degradation | 4/5 | 9 |
| 7 | Drying of Lake Chilwa | 3/8 | 3 |

Community Resources (Community Capacities)

Participants were tasked with identifying the resources that are available in their areas, in addition to the hazards related to climate change that they experience. Common resources that were identified in the communities were forests, rivers, hills, etc. Some frequently mentioned resources from all programme areas have been listed in Table 10 below.

Table 10: Sample of resources identified by communities across all 4 programme districts

| <i>Natural Resources</i> | <i>Infrastructure</i> | <i>Social Resources</i> |
|--|---|---|
| <ul style="list-style-type: none"> • Land • Wetlands • Forests • Livestock • Streams • Rivers • Hills | <ul style="list-style-type: none"> • Dams • Water points/boreholes • Community woodlots • Roads • Bridges • Railway line • Houses • Football grounds • Network transmitter | <ul style="list-style-type: none"> • Social services (incl. primary schools, under-5 clinics, churches, mosques) • Trading centres/ markets, seasonal markets • Village banks • Labour (people are willing to work) |

Participants were then tasked with mapping their resources. Although participants sometimes struggled to produce a two-dimensional illustration of their geographic space due to low literacy rates, community members still managed to produce maps of the resources (and potential hazards) in their areas. Some drew maps on the ground and others drew maps on flip chart paper.

² How many times the hazard was mentioned across 8 instances of the hazard ranking tool in 8 communities for which data was provided across all programme districts.

³ If a community ranked a hazard first, it received 5 points, second, 4 points, and so on. A higher overall score means the hazard was a top priority; a lower score means the hazard was a lower priority across communities.

In the PVCA, community members evaluated the capacity they have to participate in their own development. For instance, the people of GVHs Lundu and Gaga in Chikwawa district depend on wetlands along Mwanza and Ngona Rivers to grow crops. There are streams that can be used for irrigation farming. They have areas suitable to establish tree nurseries and rearing of small stocks such as chicken, goats, pigs and sheep.



Figure 5. Women and men in GVH Mkhumbwa, Machinga district, draw a resource and hazard map on the ground using symbols, before transferring it to paper, May 2018. Photo credit: Chinsisi Daudi.

Communities in GVHs Lundu and Gaga already have two irrigation schemes. There is one Community-Based Childcare Centre (CBCC), primary schools, a health centre, one produce market and boreholes which are far apart. There are churches and mosques in the area.

In addition, they have formed different committees, which are functioning, such as VNRMCs, child protection committees, child corner, lead farmers, and health committees, which can participate in and oversee CCPM activities. According to CADECOM Chikwawa staff, the community members in GVHs Lundu and Gaga actively participated during the PVCA exercise, revealing that they are committed to participating in the CCPM.

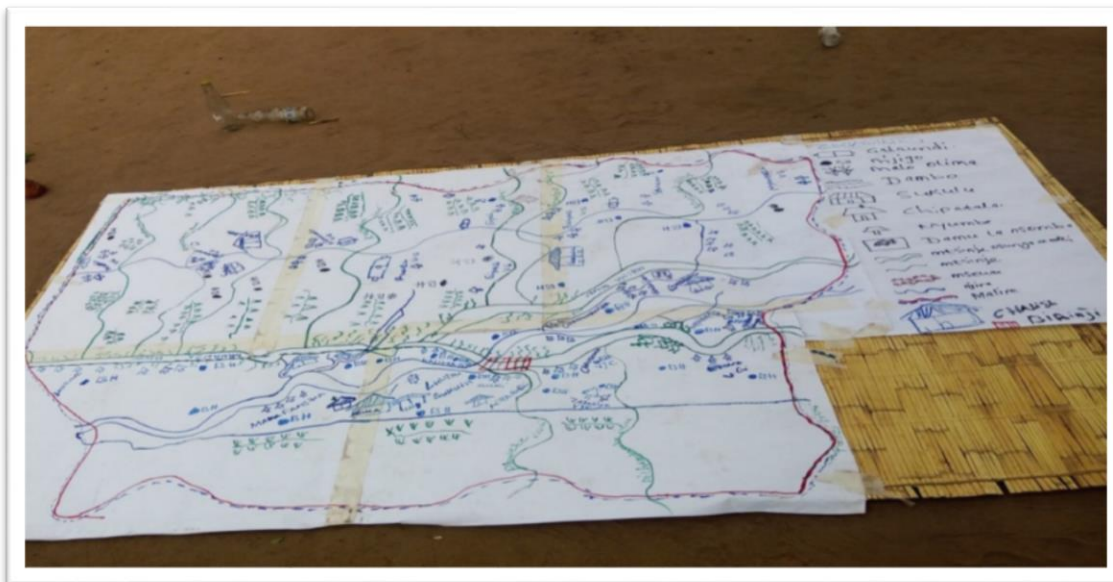


Figure 6. Resource map drawn by community members in GVH Lundu, Chikwawa district. Photo credit: Rhodrick Mwamlima, CADECOM Chikwawa.

Resilience

Community members discussed resilience in terms of what a ‘resilient’ community possess that makes it resilient. They then ranked their own community’s level of resilience using a Participatory Ranking Methodology, in which community members define and measure the aspects of resilience that are most relevant and important to them in their area.

Community members prioritized the five most relevant resilience themes to them and ranked each on a 4-point scale,⁴ a score of 4 indicating that they believe their community is doing very well in that aspect and a 1 indicating that members find their community severely deficient in that area. Below, as an illustration, are the results of how community members in Balaka ranked their top five themes.

Table 11. Resilience measure from Chingere village, GVH Phimbi, Balaka district

| | | | | | |
|---|---------------|--|-----------------|----------------------------|--|
| 4 | | | | | |
| 3 | | | | | |
| 2 | | | | | |
| 1 | | | | | |
| | Food Security | Diversified Income generating activities/ business | WASH facilities | Health services- Hospitals | Sustainable Natural resources management |

Scores for the five themes are averaged to produce a single resilience score. In the example above, community members gave themselves a score of 1.4 out of 4. Overall, 14 CCPM participating communities have an average resilience score of 1.6 out of 4 at baseline. This data collected via the resilience tool forms the baseline for indicator 1.3 in the results framework for the CCPM. As the CCPM is implemented and community members take action to build their resilience to climate shocks, it is expected that these scores will go up over the course of the programme.

All communities prioritized water as a key aspect of resilience that concerns them. An example is in GVH Nkhumbwa, Machinga district, where the people gave water a score of 1 point out of 4, because they drink water from Mwalasi River, which is unsafe. At times they have to dig in the river to get water and often the river dries up, especially on the side where most of the population lives. The area has few boreholes, sometimes causing conflict between community members.

⁴ A score of 4 indicates that community members believe their community is doing very well (as well as possible) in that theme, whereas a score of 1 indicates that members find their community to be severely deficient in regards to that resilience theme.

Table 12. Frequency of resilience themes across all 14 instances of the resilience tool

| Rank | Theme | Frequency |
|------|---|-----------|
| 1 | Adequate access to clean, potable water (e.g. enough boreholes) | 14 |
| 2 | Forest/tree nursery | 11 |
| 3 | Food/food security | 9 |
| | (Solar) irrigation scheme | 9 |
| 5 | Small stock farming | 5 |
| | Energy saving techniques | 4 |
| | Hospital | 4 |
| | Drought-tolerant crops | 3 |
| | Solar gadgets | 3 |
| | Sustainable NRM management plan | 2 |
| | Electricity | 1 |
| | Roads | 1 |
| | Bridge | 1 |
| | IGAs/small-scale businesses | 1 |
| | Agro-ecological approaches | 1 |
| | Community based care centres | 1 |

Afforestation, or planting and managing forests and tree nurseries were the second most-frequently mentioned resilience theme. Many communities noted the careless cutting down of trees in their areas, often in order to produce and sell charcoal. Some communities want to establish a community forest, while others have already established these forests but struggle to maintain them and protect the trees from being cut down.

Food/food security and irrigation schemes, particularly solar, are tied for the third most frequently mentioned resilience theme. Irrigation schemes is one strategy to increase crop yields and therefore, food security. Small livestock farming (e.g. goats and sheep) is the fifth most frequently mentioned resilience theme, indicating that community members feel that the resilience of individual households is important to community resilience overall, and that access to household resources is an important aspect of resilience.

Solutions prioritized by communities

After delineating the hazards that they have faced and the available resources in their areas, community members were tasked to identify relevant solutions to the climate change-related challenges they face. By creating and pruning solutions trees, community members identified their most pressing issues related to climate change, to feed into their own community action plans and work plans under the CCPM.

Communities are interested in enhancing their resilience by learning agro-ecological approaches and how to eat a nutritious diet, information they can apply on their farms and in their homes. PVCA participants are interested in working together with their neighbours to build resilience at the community level. Communal actions under the CCPM will include establishing and strengthening village- and area-level committees to manage natural resources and reduce disaster risks, planting trees in community wood lots and reeds along riverbanks, and establishing seed banks, VSLAs, and marketing groups to diversify income. Many communities in CCPM programme areas are interested in establishing solar irrigation schemes as a sustainable solution to food insecurity. Communities are also interested in improving their resilience by using sustainable sources of energy, such as improved cook stoves that burn less fuel than open fires and traditional cook stoves, and solar energy.

Community priorities in Balaka

Communities in Balaka, where Eagles Relief is working, came up with solutions to the climate risks they face that they would like to implement under the CCPM together with Eagles. Many proposed actions applied to several different climate risks so a summarized list of proposed solutions is presented below.

Suggested interventions for Climate Change Adaptation from communities in Balaka district

- Engage in winter farming/ irrigation (communities)
- Provision of improved farm inputs for rain-fed and winter farming (in collaboration with Eagles Relief)
- Provision of irrigation materials (in collaboration with Eagles Relief)
- Provision of solar pumps to enhance irrigation capacity in the community (in collaboration with Eagles Relief)
- Engage in agro-ecological practices (communities)
- Engage in Agricultural diversification (communities)
- Engage in collective marketing (communities, in collaboration with Eagles Relief)
- Engage in income-generating activities (communities, in collaboration with Eagles Relief)
- Provision of training to communities in soil conservation technologies (in collaboration with Eagles Relief)
- Engage in soil conservation technologies (communities)
- Engage in small livestock production (communities, in collaboration with Eagles Relief)
- Training communities in forest management and tree planting in flood prone areas/ catchment areas/ forest reserves (in collaboration with Eagles Relief)
- Afforestation (communities)
- Promoting water safety plans (communities, in collaboration with Eagles Relief)

- Promoting Community Led Total Sanitation (CLTS) marketing (communities, in collaboration with Eagles Relief)
- Rehabilitation and drilling of boreholes (in collaboration with Eagles Relief)
- Training water committees on water management and borehole rehabilitation (communities, in collaboration with Eagles Relief)
- Establishment of forest reserves and tree planting in catchment areas (communities, in collaboration with Eagles Relief)
- Design and implement community natural resources management plans (communities, in collaboration with Eagles Relief)
- Promote renewable energy technologies e.g. biogas, use of solar energy (in collaboration with Eagles Relief)
- Promote fire briquettes (communities, in collaboration with Eagles Relief)
- Promote low carbon technology including energy saving cook stoves – ‘chitetezo mabula’ (communities, in collaboration with Eagles Relief)

Community priorities in Chikwawa

Communities in GVHs Lundu and Gaga, where CADECOM Chikwawa works, suggested the following solutions for the climate change-related problems they are facing:

- Form village farmers’ field schools, to disseminate learnings on agro-ecology, including on soil and water conservation, pit planting, manure, agroforestry, livestock production, irrigation, swale excavation. (communities, in collaboration with CADECOM Chikwawa)
- Encourage the use of improved quality seeds that are available. (communities, in collaboration with CADECOM Chikwawa)
- Provide push bikes to lead farmers, as well as educational materials, to enhance their effectiveness and geographic reach. (in collaboration with CADECOM Chikwawa)
- Host exchange visits within and outside the district, to learn from others who are having success with agro-ecological approaches. (in collaboration with CADECOM Chikwawa)
- Intensify business skills and promote the production of energy saving stoves for household use and sale. (communities, in collaboration with CADECOM Chikwawa)
- Support village banks with loans. (in collaboration with CADECOM Chikwawa)
- Introduce solar pumps for irrigation schemes. (in collaboration with CADECOM Chikwawa)
- Form community-based childcare centres in all villages (CBCCs). (communities)
- Construct shallow wells where rope and washer pumps can be installed. (communities)
- Establish village tree nurseries in all villages in order to raise tree seedlings for afforestation. This process could include the use of truncheons and branches to rehabilitate water catchment areas, including river banks and bare land. (communities, in collaboration with CADECOM Chikwawa)

Communities in TA Ngowe (CICOD programme area) are facing food insecurity, brought on by insufficient harvests due to drought, pests, and poor soil fertility, a lack of knowledge on nutrition, and poor access to clean and safe water. Communities are eager to build their business skills to earn more money, and gain access to safe water and sustainable energy options for household cooking and lighting. Communities in TA Ngowe organized their proposed interventions along the three themes of food, water/land/environment, and energy.

Suggested interventions to address food issues from communities in TA Ngowe, Chikwawa district

- Distribution of food (in collaboration with CICOD)
- Procurement of early maturing varieties of seeds (in collaboration with CICOD)
- Distribution of goats on pass-on programs to act as a coping strategy (in collaboration with CICOD)
- Engage in backyard gardening (communities)
- Procurement and distribution of Orange Flesh Sweet Potato (OFSP) seeds (in collaboration with CICOD)
- Different income generating activities that can empower communities to be independent and raise income levels so they can buy sufficient food (communities, in collaboration with CICOD)
- Formation of cooperatives or Farmer groups to sell produce at a group level to attract buyers and companies to attain high prices (communities, in collaboration with CICOD)
- Bee keeping as an IGA (communities)
- VSLs for savings, loans and cash management (communities)
- Promotion of local businesses (communities, in collaboration with CICOD)
- Provide different business trainings (in collaboration with CICOD)
- Facilitate marketing linkages where possible (in collaboration with CICOD)
- Training in technical Know-how of how to manage the pest (in collaboration with CICOD)
- Provide crops that cannot be attacked by the pests (in collaboration with CICOD)
- Intensive extension services (in collaboration with CICOD, government agriculture extension officers)
- Training in agro-ecology (in collaboration with CICOD)
- Establishment of irrigation schemes for winter cropping (communities, in collaboration with CICOD)
- Repair boreholes and/or pump water to increase communities' access to water (in collaboration with CICOD)
- Provide training on how to utilise already available local foods which are nutritious (in collaboration with CICOD)
- Take a lead farmer approach (communities, in collaboration with CICOD)

Suggested interventions to address water, land, environment issues from communities in TA Ngowe, Chikwawa district

- Drilling of boreholes (in collaboration with CICOD)
- Using solar energy to pump water from non-saline areas to the communities for drinking (in collaboration with CICOD)
- Rehabilitation of some boreholes (in collaboration with CICOD)
- Irrigation farming (communities)
- Provision of drought tolerant/ early maturing varieties of seeds (in collaboration with CICOD)
- Planting of trees (communities)
- Engage in sustainable agricultural practices (communities)
- Enact by-laws to prohibit cultivation along riverbanks (communities)
- VNRMCs and DRR committees to be established and strengthened (communities)

Suggested interventions to address energy issues from communities in TA Ngowe, Chikwawa district

- Training in construction of energy-efficient stoves, use of stoves (communities, in collaboration with CICOD)
- Make connections between solar companies and communities to enhance use of solar lighting (communities, in collaboration with CICOD)

Community priorities in Machinga

Communities in TA Liwonde (CADECOM Mangochi programme area) are facing drought, floods, and land degradation, which affect their food security and livelihoods. They have proposed solutions to increase their access to water and sustainable energy, and adopt agro-ecological approaches in cultivation to increase crop yields. Community members have also identified post-harvest strategies (e.g. decrease post-harvest losses and develop value chains) to build their livelihoods as well. Communities in TA Liwonde organized their proposed interventions along the three themes of food, water/land/environment, and energy.

Suggested interventions to address food issues from communities in TA Liwonde, Machinga district

- Promotion of agro-ecological practices, e.g. Box ridging, Crop residue incorporation, Manure making and application (communities, in collaboration with CADECOM Mangochi)
- Planting early maturing and drought tolerant crop varieties (communities, in collaboration with CADECOM Mangochi)
- Engage in crop diversification (communities)
- Set up local and communal diversified seed banks (e.g. OPV maize) (communities)
- Intercropping, especially of leguminous crops (communities)

- Engage in water harvesting technologies e.g. swales (communities)
- Engage in VSLAs (communities)
- Engage in Agroforestry practices (communities)
- Engage in intercropping of leguminous crops (communities)
- Crop rotation (where applicable) (communities)
- Promotion of livestock production (communities, in collaboration with CADECOM Mangochi)
- Catchment conservation (communities)
- Afforestation (communities)
- River bank protection e.g. planting of trees, Bamboos, and bananas (communities)
- Documentation of early warning systems on indigenous knowledge with DRR committees (communities)
- Promotion of botanical and biological methods to fight crop pests (communities, in collaboration with CADECOM Mangochi)
- Soil and water conservation such as rain water harvesting, infiltration pits, swales and contour ridging (communities)
- Promote and use traditional methods such as use of neem, mukuna, sand and ash to prevent post-harvest losses (communities, in collaboration with CADECOM Mangochi)
- Promote and use PICS bags (communities, in collaboration with CADECOM Mangochi)
- Market system development, i.e. value addition and formation of associations and cooperatives (communities, in collaboration with CADECOM Mangochi)

Suggested interventions to address water, land, environment issues from communities in TA Liwonde, Machinga district

- Afforestation and re-afforestation (communities)
- Natural tree regeneration (communities)
- Lobby community leaders to institute by-laws on NRM (communities, in collaboration with local government)
- Promotion and engagement in forest based enterprises, e.g. bee keeping (communities, in collaboration with CADECOM Mangochi)
- Promotion and engagement in income generating activities (communities, in collaboration with CADECOM Mangochi)
- Drilling of boreholes (in collaboration with CADECOM Mangochi)
- Promotion of irrigation farming (where applicable) (communities, in collaboration with CADECOM Mangochi)
- Provision of irrigation equipment (in collaboration with CADECOM Mangochi)
- Intensification of intercropping (communities)

- Promotion and use of new agricultural technologies (communities, in collaboration with CADECOM Mangochi)

Suggested interventions to address energy issues from communities in TA Liwonde, Machinga district

- Establishment of village forest area (communal and individual woodlots) (communities)
- Production and utilisation of energy saving stoves (fixed stoves) (communities, in collaboration with CADECOM Mangochi)
- Creation and use of briquettes (communities, in collaboration with CADECOM Mangochi)
- Promotion and use of solar powered lights (communities, in collaboration with CADECOM Mangochi)
- Provision of Solar Kiosks for charging cell phones (in collaboration with CADECOM Mangochi)

Communities in TA Nsanama, where CARD is working, prioritize water interventions, income-generating initiatives, and agro-ecological approaches to increase their resilience and improve their livelihoods. Their proposed solutions are listed below:

Suggested interventions from communities in TA Nsanama, Machinga district

- Enhance soil and water conservation practices (e.g. manure making)
- Establish small scale irrigation schemes (e.g. treadle pumps and solar powered irrigation schemes)
- Enhance afforestation/agroforestry activities
- Strengthen village savings and loans associations
- Conduct nutrition trainings
- Enhance market/group selling/farmer organizations
- Enhance livestock management skills (small stock – goats, chickens, rabbits)
- Promote seed fairs for local seeds (promote seed multiplication for local seeds)
- Provision of potable and quality water (e.g. solar powered pumps)
- Promote efficient energy fixed cooked stoves
- Address high illiteracy levels
- Engage youth in all programmes. Ensure youth serve on committees, as Village Agents, and as Lead Farmers.
- Promote good post-harvest management practices (e.g. PICS bags)
- Promote agro-ecology principles and approaches, both on individual farms and communal areas
- Promote farm business schools

Community priorities in Zomba

Communities in TA Mwambo in Zomba district are facing many similar issues to those of other communities, such as food insecurity, dry spells, floods, pests, soil degradation, access to potable water, deforestation, and strong winds. In addition, these communities have been affected by the drying up of Lake Chilwa, which used to be their primary source of livelihoods activities. As an example, the table below represents how ZARDD compiled the information learned from communities. ZARDD conducted the PVCA in September, so they had the opportunity to learn from other partners what worked well in the process of implementing and reporting on the PVCA.

Table 13: Proposed interventions from TA Mwambo, Zomba district

| Hazard/ problem | How community members are coping up | Proposed interventions/ activities by communities | Remarks |
|---------------------------|--|--|--|
| Hunger/food insecurity | <ul style="list-style-type: none"> • Piece work in Phalombe and Mozambique. • Irrigation farming on own farms (using watering cans). • VSLAs • Selling properties like bicycles to buy food. | <ul style="list-style-type: none"> • Upscale VSLs in order to improve HH access to loans (communities, in collaboration with ZARDD) • Promote small business skills through solar kiosks (communities, in collaboration with ZARDD) • Promote small scale livestock among vulnerable households (communities, in collaboration with ZARDD) • Upscale irrigation systems using solar energy (in collaboration with ZARDD) • Relief distribution of food items⁵ | <ul style="list-style-type: none"> • Communities believe that diversifying income sources can improve household food security. • ZARDD will not distribute food items because this increases dependency on humanitarian aid. |
| Drought/ dry spell | <ul style="list-style-type: none"> • Planting drought-tolerant crops like sorghum • Selling properties. | <ul style="list-style-type: none"> • Promote agro-ecology (in collaboration with ZARDD) • Provide seeds: drought tolerant crops, early maturing varieties (in collaboration with ZARDD) • Form community seed banks (communities, in collaboration with ZARDD) | <ul style="list-style-type: none"> • Communities believe that crop yields will improve when they have access to technologies that reduce the impact of dry spells. |

⁵ Struck through items represent an intervention/activity proposed by the community that ZARDD has decided not to implement per the corresponding explanation in the 'Remarks' column.

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| | | | |
|----------------------|---|---|--|
| | | <ul style="list-style-type: none"> • Promote and engage in Crop diversification (communities, in collaboration with ZARDD) • Promote and engage in rain water harvesting technologies (communities, in collaboration with ZARDD) | <ul style="list-style-type: none"> • Access to quality seed is limited. ZARDD will distribute OPV seed to community seed banks. |
| Floods | <ul style="list-style-type: none"> • Transferring of affected households to higher areas • Constructed dyke • Planting vetiver and bananas along the river bank • Create water ways in times of heavy rains | <ul style="list-style-type: none"> • Provide materials for community & homestead dyke construction (in collaboration with ZARDD) • Construct water ways (swales) (communities) • Promote catchment conservation through afforestation, tree regeneration (communities) • Promote disaster preparedness: Set up early warning systems, Conduct PSP, Run awareness campaign (communities, in collaboration with ZARDD) • Strengthen VNRMCs and VCPCS (communities) • Support the VNMRC by providing polyethylene tubes and tree seeds (in collaboration with ZARDD) • Plant vetiver grass and bananas along constructed dykes and Phalombe River (communities) | <ul style="list-style-type: none"> • Communities explained that with the dyke in place the effects of flooding will be reduced. • Some farmers have stopped cultivating along the river banks which they hope will reduce flooding. • The communities are very committed in constructing dykes and catchment conservation along the Phalombe river. |
| Fall Army Worm (FAW) | <ul style="list-style-type: none"> • Physical catching and killing the worms • Applying ashes, soil, 'Usipa' soup and pepper solutions directly to plant • Applying synthetic pesticides | <ul style="list-style-type: none"> • Encourage agro-ecology activities (in collaboration with ZARDD) • Engage in Crop rotation (communities) • Engage in early planting (communities) • Engage in mixed cropping (communities) | <ul style="list-style-type: none"> • Several methods have been tried but none is found to be effective. • Conflicting messaging of how to prevent it is an issue. |

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| | | | |
|---------------------------------|--|--|--|
| <p>Drying up of Lake Chilwa</p> | <ul style="list-style-type: none"> • Migration to other areas like Mangochi for fishing businesses • Catchment conservation | <ul style="list-style-type: none"> • Diversifying livelihood activities (communities, in collaboration with ZARDD) <ul style="list-style-type: none"> - Provision of goats through pass on program - Promotion of small scale business, VSLs • Catchment conservation (communities, in collaboration with ZARDD) - Supporting the VNMRCs with resources such as tree seeds, tubes etc. | <ul style="list-style-type: none"> • The drying up of Lake Chilwa has increased food insecurity in CCPM communities as it has compromised livelihood activities. • As explained above ZARDD will promote income diversification to fill the gap created by the drying up of Lake Chilwa. |
| <p>Safe potable water</p> | <ul style="list-style-type: none"> • Digging of shallow unprotected wells • Waking very early in the morning fetching water to reduce waiting time • Have water point committees to manage the water point • Walking long distance searching for water | <ul style="list-style-type: none"> • Drilling water points (in collaboration with ZARDD) • Formation and training of the new water points committees to be established (communities, in collaboration with ZARDD) | <ul style="list-style-type: none"> • It has been noted the target area has got few safe potable water points • There is overcrowding in safe water points • Several possible water points in GVH Kathebwe have saline rocks so are not suitable for drilling boreholes |
| <p>Soil/land degradation</p> | <ul style="list-style-type: none"> • Very handful farmers are making and applying manure | <ul style="list-style-type: none"> • Promotion and use of good agricultural practices (communities, in collaboration with ZARDD) <ul style="list-style-type: none"> - Manure making and application - Agro-ecology concepts - Crop residue incorporation - Agroforestry | <ul style="list-style-type: none"> • It was noted that a majority of community members are not practicing practices that improve soil fertility or prevent land degradation, |

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| | | | |
|-----------------------------------|--|---|--|
| | | <ul style="list-style-type: none"> - Vegetative cover - Crop rotation | and in fact are engaging in practices that degrade soil |
| Deforestation / lack of fuel wood | <ul style="list-style-type: none"> • Cooking using maize Stovers • Cooking using pigeon peas stems • Walking long distance searching firewood • Established community woodlots | <ul style="list-style-type: none"> • Establish and strengthen VNRMCs (communities, in collaboration with ZARDD) • Encourage farmer managed natural regeneration (FMNR) (Communities, in collaboration with ZARDD) • Promotion and use of energy serving technologies (communities, in collaboration with ZARDD) - <i>Chitetezo mbaula</i> (improved cook stoves) • Promotion and establishment of both community and homestead woodlots (communities, in collaboration with ZARDD) | <ul style="list-style-type: none"> • Fuel wood is a problem whereby household members have to walk a long distance fetching firewood |
| Stormy winds | <ul style="list-style-type: none"> • Building strong houses with slanted roofs and small windows • Planting trees around homestead • Community forests in each village and house | <ul style="list-style-type: none"> • Building strong houses • Planting trees around homestead • Extension service on modern house construction | <ul style="list-style-type: none"> • ZARDD will only promote the planting of trees around homestead to act as a wind break, and not do any activities related to construction of housing. |

As clearly demonstrated by ZARDD in Table 13 above, many recommendations from communities for actions to be taken to respond to climate shocks will be taken up by implementing partners, but not all suggestions from communities are in the purview of the CCPM. For instance, giving direct food aid and support to build houses would reduce community resilience, rather than build it. Implementing partners in the other three CCPM districts have made the same decisions in regards to their work plans, taking on board the suggestions from communities which are feasible and promote community self-help and resilience.

Community Validation

To ensure the planned interventions under the CCPM are truly community-driven, findings from the PVCA process and baseline survey were validated with the communities to close the feedback loop. Advocacy partners (CISONECC and CADECOM National) joined implementing partners in the validation exercises, enabling advocacy partners to get a sense of the situation: climate literacy is low in CCPM communities, and linkages between local community structures and duty bearers, including district level government officials, are weak. Because of their participation in the validation exercises, advocacy partners have devised an advocacy strategy that will be relevant to communities and driven by their needs at local, district, and national levels.

PVCA validation exercises allowed implementing partners, advocacy partners, and community members to discuss expectations and timelines of project implementation, and in some instances led to programme adaptations.

Balaka

Eagles validated the PVCA and baseline findings in three communities in TAs Matola and Nkaya with community members from 15 villages. Community leaders, members of VCPCs and ADCs, and representatives from some government departments attended.

They used flip charts to display the information clearly for community members, and translated all findings into local language. They hosted open discussions with community members on the findings, and noted that community members were very engaged and actively participated. Community members made further suggestions on interventions at the validation meetings, including bee keeping, mushroom cultivation, and afforestation using indigenous trees.

Chikwawa

In Chikwawa District, validation exercises were conducted at GVH level. Community members who participated in the PVCA presented the results to the rest of the community, who were able to freely provide feedback on the process. CICOD notes that it was successful to have community members drive the process and CICOD there just to facilitate the understanding of the project. Had CICOD led the process, community members would have been less willing to refute the findings. Community members were able to remind each other of the aim of the project to promote sustainable solutions, not short-term fixes, and remind each other that the distribution of food was not in the purview of the CCPM. Before the validation meetings, drilling new boreholes had been a solution requested by community members, however in the validation meetings it was suggested by some members that there are some existing, faulty boreholes that can be rehabilitated instead.

Machinga

In GVH Liwonde, CADECOM Mangochi had planned to distribute banana suckers to participants to promote household nutrition as well as income generation. However, in the PVCA validation meetings, community members pointed out that banana suckers will attract elephants, which are already a nuisance to farmers, leaving the nearby national park to eat farmers' crops. Community members suggested that mango seedlings be distributed instead, which CADECOM Mangochi now plans to do.

In GVHs Mangulu and Mnkumbwa, CARD briefed the District Agriculture Development Officer (DADO) before conducting PVCA validation exercises with communities. In communities, CARD hosted validation meetings with community members, local leaders, lead farmers, village agents, representatives from local committees (including VNRMCs, VDCs, and VCPCs), as well as EPA government staff who co-facilitated the session with CARD programme staff. In general community members found the information to be a true reflection of the issues they had raised in PVCA focus group discussions and baseline survey data collection. However, CARD note that some communities are not as available to focus on climate change-related issues as they face major infrastructure challenges. For instance, in GVH Mangulu, there is no bridge across the Nsambuzi River, which floods during the rainy season and has crocodiles, which have injured 14 and killed three people in recent years. Communities need a bridge across the river, a case to be addressed by the District Council, not by the CCPM. CARD notes that the lack of the bridge will also impact their ability to work in these areas during the rainy season.

Zomba

ZARDD conducted PVCA community validation in January 2019 in each of the three GVHs where they are working. According to the M&E Officer, it was an interesting activity because while the figures from the baseline survey and PVCA activities were valid to community members for the most part, there were some that they called into question. For instance, according to the survey, roughly one-third (36.6%) of respondents in Zomba practice intercropping. At the validation exercise in GVH Kathebwe, community members disputed this, saying that a higher proportion of people than that in their area practice intercropping. Overall, the activity went on well and the community members are motivated to work under the CCPM per their action plans developed through the PVCA.

Lessons learned

1. Stay focused on climate change.

A PVCA process, if managed poorly, has the potential to raise expectations as the tools are meant to highlight issues affecting the community and members can get carried away discussing all of the problems they face across many sectors. It is therefore important to clearly communicate the

focus of the program. It became evident through the PVCA process that communities do not fully understand what climate change is. The promotion of climate literacy within communities will be an important aspect of the CCPM. It is important to involve local leaders and government representatives in the PVCA, so that when communities raise issues that are outside the programme's goals (e.g. construction/repair of bridges), their views can be heard by the appropriate stakeholders.

2. *Advocacy is necessary.*

The promotion of advocacy at community level represents an opportunity for advocacy partners to engage with communities to enact change at a local level, in addition to the national level. By taking a human rights approach to issues of climate change and climate justice, advocacy partners will assist communities to advocate at local, district and national levels for their climate change-related issues as well as other issues community members perceive as pressing. It was good that advocacy partners participated in the community validation exercises, though they had wished to have been involved in PVCA and baseline activities as well.

3. *Leaving no-one behind takes time and dedicated efforts.*

Extra effort and time needs to be taken in order to 'leave no one behind'. Literacy was an issue when administering some PVCA tools, so facilitators had to make extra effort to bring less literate people on board. Facilitators found success in giving different roles to different groups, e.g. the elderly were tasked to recall historical timelines. Implementing partners must continue to make special efforts to ensure that members of vulnerable groups, including women and girls, FHHs in particular, the elderly, and HIV- and disability-affected households engage with the programme, and document and share their strategies of success.

4. *The CCPM nexus of food, water and energy issues is relevant: food, water and energy are top priorities of women, men and youth.*

Women and men often have similar, yet different priorities. In a summary of men's and women's issues in TAs Nkaya and Matola in Balaka district, Eagles developed Table 22, below. It is interesting to note that women and men had the same top priority (food insecurity), and that access to safe drinking water is mentioned by both women and men in their top three priorities. Women ranked potable water higher than men, as their second priority, as opposed to men's third, though it is remarkable that men's second priority is also related to water, in regards to the damage it does to the soil and crop yields. Both men and women prioritize the availability of wood products. Women are concerned with the lack of firewood because they are typically responsible for cooking, and would also prefer cleaner alternatives. Men are concerned with the lack of timber as a building material. Both women and men are interested in income-earning opportunities, though in this case women mentioned 'income-generating activities and loans' more broadly, while men specifically cited agricultural value chains as a top priority.

Table 14: A comparison of priorities of issues between women and men, Balaka District

| Top 5 priorities for women | Top 5 priorities for men | Remarks |
|--|--|--|
| 1. Food insecurity and Malnutrition | 1. Food insecurity (drought, pests, and lack of improved farm inputs) | Both men and women stress that they experience food shortages every growing season for years now due to prolonged dry spells, pests, lack of improved farm inputs etc. Furthermore, it was learned that few farmers are involved in winter cropping due to lack of irrigation equipment. |
| 2. Lack of access to clean and safe drinking water | 2. Floods, Soil erosion and degradation | Women indicated they are facing challenges to access clean and safe water: they walk long distances and spend much time fetching water from safe sources. Men said soil erosion and degradation in most fields due to flash floods is significantly contributing to low crop production. |
| 3. Lack of clean energy for cooking; scarcity of firewood | 3. Lack of access to clean and safe drinking water | <i>“Women spend most of their time doing household chores- including cooking”</i> women said. Women find it difficult to fetch firewood and have less knowledge on clean energy technologies for cooking. On the other hand, men indicated access to safe and clean water is a problem affecting household chores. |
| 4. Inadequate income generating activities and access to credit loans | 4. Increase in deforestation- Scarcity of trees for firewood, construction of houses | Women want more opportunities to earn income, e.g. small scale business and access to credit loans, hence failing to meet basic needs for their families. Men noted that deforestation is increasing due to charcoal making, firewood, curing bricks. This is contributing to prolonged dry spells, affecting farming. |
| 5. High illiteracy among women; lack of access to adult literacy schools | 5. Lack of reliable markets for farm inputs | Women acknowledge a need for greater literacy that may help them to hold various positions in the community. Men were concerned with low market prices for crops being offered by various buyers (e.g. cotton at 370MK/Kg, Pigeon peas at 100MK/Kg). |

Eagles also consulted youth to separate out their issues. Interestingly, all five of the issues of youth in TAs Nkaya and Matola are mentioned by either men or women above. This could partially be due to partners’ difficulties in separating ‘youth’ from other community members. In Malawi youth are defined by the government as people aged 18-35, but practically, once a person marries, they

rarely identify as a 'youth' regardless of their age. Often, once a woman has a child she is a mother, and therefore no longer a 'youth'. Youth members report that loans are inaccessible to them. They are also interested in studying at night, so they need reliable, sustainable, and affordable lighting options.

Table 15: Priority issues of youth, Balaka District

| Top 5 priorities for the youth | Remarks |
|---|--|
| Food insecurity | The communities have experienced food shortages each growing season due to prolonged dry spells, Pests outbreak- Fall Army Worms, Lack of improved farm inputs. |
| Lack of access to clean and safe drinking water | It was learned that due to increase in non-functional water points, participants are covering long distances to access clean and safe drinking water. |
| Inadequate income generating activities, access to credit loans | Due to a lack of opportunity to access credit/loans, youths are failing to venture into small scale business to generate income. |
| Flooding- Soil erosion and degradation | It was stressed that flash floods are continually causing soil erosion in most arable lands/field resulting in degradation of land. This is contributing to soil infertility in most fields contributing to low crop production. |
| Lack of renewable energy sources for lighting home | It is too difficult to study from home at night because current lighting mechanisms depend on paraffin that is scarce and expensive and not good for the environment. |

5. The promotion of agro-ecology is key.

Agro-ecology, an approach to farming which involves no chemicals (e.g. fertilizers, pesticides), goes against business-as-usual agriculture in Malawi, and it is clear that stakeholders are both unfamiliar with the concept and not entirely convinced of its value. Community members have heard of 'conservation agriculture' and 'climate smart agriculture', which have many overlaps with agro-ecology but still allow for chemical use, and are not familiar with 'agro-ecology' per se. Community members still request inputs of inorganic fertilizer, as according to them, fertilizer always produces bumper crops. Some community members believe that pesticides are the only solution for some pests. Even government extension workers in some localities express doubt that sufficient crop yields can be realized without chemicals. Therefore, education on and promotion of agro-ecology principles and approaches must continue with all stakeholders, and Trócaire and partners must be very clear in our messaging, not to confuse agro-ecology with conservation agriculture.

6. *Co-creation with programme participants will lead to a sustainable programme legacy.*

When communities are consulted in the design of a development programme, and they can see that the proposed interventions came from them and their needs, they are more engaged and more likely to stay engaged throughout and beyond the life of the programme. Partners found it useful to take the extra step of validating the PVCA and baseline findings with communities, and are now confident that project work plans are relevant to communities' needs. Community members will continue to be consulted throughout implementation of the CCPM.

Conclusion

Conducting PVCA activities in CCPM programme areas has allowed programme participants, implementing partners, and Trócaire to understand the context of climate shocks and hazards which participating CCPM communities face. Droughts, floods, the drying up of Lake Chilwa, and pests are all negatively impacting the wellbeing and livelihoods of community members. While communities demonstrate a good understanding of how climate shocks and good weather events affect their crop yields and incomes, they are less conversant on how human activity influences the frequency and intensity of these climate shocks, and on what they themselves can do to mitigate this.

By conducting the PVCA, implementing partners and Trócaire demonstrated to communities that their perspective and input are valued, and through the validation activities community members expressed their appreciation for being consulted in the design of the programme. Additionally, the PVCA allowed communities to make action plans for climate change mitigation activities under the CCPM. The PVCA allowed implementing partners to focus on the hazards and risks experienced by communities as a result of climate change, and focus the action plans on climate mitigation activities. Work plans of partners therefore reflect what communities requested and indeed are already working on themselves.

In this way, the PVCA enabled the design of a relevant, community-driven programme to sustainably build the resilience of participating communities against current and future climate shocks. For instance, GVH Kathebwe, Zomba district, is very prone to floods as it is located near Phalombe River and Lake Chilwa. In response, community members had already begun construction of a dyke. ZARDD therefore pledged to provide trees and vetiver to plant on the dyke in order to supplement the work that the community had already begun. The ideas are coming from the communities and as a result communities feel ownership of the CCPM and it is highly likely that the work done under the CCPM will have a sustainable legacy and continue to influence behaviour change and action against climate change beyond the life of the programme.

Annex: Sample PVCA findings from each tool

| Tool | Partner Example |
|---|-----------------------------|
| 1 Stakeholder mapping | Eagles, ZARDD |
| 2 Problem/solution tree and pruning | CADECOM Chikwawa, Eagles |
| 3 Historical timeline / Long-term trend analysis | ZARDD |
| 4 Daily time chart | CADECOM Mangochi, Eagles |
| 5 Seasonal calendar | Eagles, ZARDD |
| 6 Hazard and Risk analysis, Risk Quadrant, Hazard Assessment matrix | CADECOM Mangochi |
| 7 Resource, Hazard, market mapping and transect walk | CADECOM Mangochi |
| 8 Resilience tool | CICOD |
| 9 Wealth ranking | CARD, Eagles |

1. Stakeholder mapping

Mapping the stakeholders in an area helps community members better understand the institutions and organizations (governmental, non-governmental and community-based) which may influence, or might be impacted by the project. First, communities brainstormed and presented these institutions and organizations in a Venn diagram, whereby the large circle represents the whole community (GVH), and smaller circles represent different stakeholders. The larger the circle, the more important community members deemed that stakeholder to be. Circles

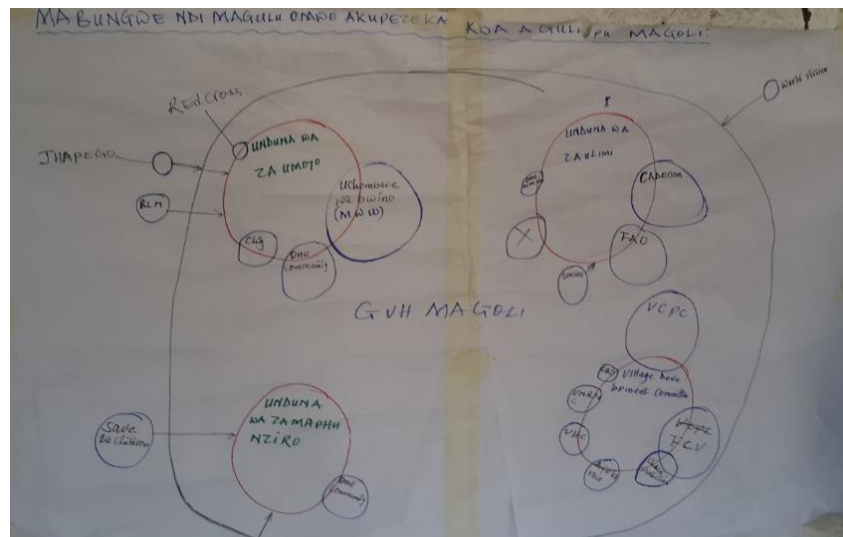


Figure 7. Venn Diagram of Stakeholders in GVH Magoli, Zomba district.

placed near each other show a close relationship. Overlapping circles represent actors with members/elements in common.

After mapping stakeholders, some communities plotted stakeholders on an interest/influence quadrant, below.



| | | |
|--|--|--|
|  Interest | ADMARC VSL | The community members Traditional leaders ADC, VDC, VCPC |
| | World Vision (WVI), Red Cross, United Purpose Charcoal burners, traditional doctors, Firewood users CBCCs- 'Sukulu ya nkhomba phala' | Government Extension workers (Agriculture, forest, health, social and community development, water) Business people |
| Influence  | | |

Figure 8. Stakeholder mapping from GVH Phimbi, Balaka district.

2. Problem/Solution tree and pruning

Below, the problem tree, solution tree, and pruning is presented from GVH Phimbi, Balaka district.

Problem tree

a. The main problem and the causes identified in relation to hazards and climate change.

| Major problem | Root causes | Related effects to community members |
|-----------------|---|--|
| Food insecurity | <ul style="list-style-type: none"> • Soil degradation- loss of fertility due to erosion • Inadequate knowledge in Good Agricultural Practices- e.g. Agricultural diversification • Pests and diseases: e.g. Fall Army worms, crop storage pests-weevils • Environmental degradation • Rising of Farm inputs prices • Prolonged dry spells • Lack of access to improved farm inputs • Lack of irrigation farming materials • High population growth • Inadequate Agricultural land | <ul style="list-style-type: none"> • Malnutrition among children • Death • Increase in theft and other illegal activities • Divorce • Increased poverty • Increase in diseases • Low participation in community development • Poor performance among school-going children • Increase in early marriages • High prostitution |

b. Negative effects of the problem (Food insecurity) on community capacity to adapt to the weather related hazards?

Failure for most community members to participate in various climate related projects/ community developmental activities to build resilience and adaptive capacity to the effects of climate change, as most of their time is spend fetching food for the families at Balaka town.

c. The effects resulting from the changes related to extreme weather events and climate change.

The community experiences prolonged dry spells which are due to changes in extreme weather events/climate change. This has mainly contributed to low crop production (maize, cotton, legumes, vegetables) and negatively affected livestock farming.

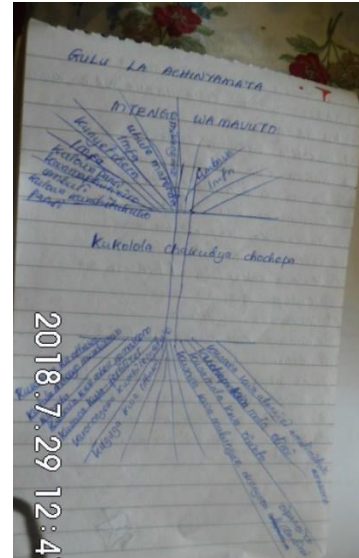


Figure 9. Problem tree produced by youth in GVH Gaga, Chikwawa district. Photo credit: Rhodrick Mwamlima.

d. Categorizing important causes into direct and indirect causes. Why?

| Direct Causes | Indirect Causes |
|---|---|
| <ul style="list-style-type: none"> • Soil degradation- loss of fertility due to erosion • Pests and diseases: e.g. Fall Armyworms, crop storage pests-weevils • Prolonged dry spells • Lack of access to improved farm inputs • Lack of irrigation farming materials | <ul style="list-style-type: none"> • High population growth • Inadequate Agricultural land • Inadequate knowledge in Good Agricultural Practices- e.g. Agricultural diversification • Environmental degradation • Rising of Farm inputs prices |
| <p>These directly affect crop growth and crop yield, and also significantly affect participants' livelihoods.</p> | |

e. To what extent have the causes and effects identified increased or decreased (improved or worsened) in the last 30 years?

Over the past 10 years, the direct causes and their related effects have increased and worsened due to changes in weather events and climate change.

f. Have there been any external interventions form NGOs or the government, to address the causes and reduce the negative effects? What were the results? Why?

Yes, but the majority of NGOs had projects which have now phased out and implementation methodologies for the projects were not addressing the root causes of food insecurity.

g. Has the community done something to control the causes or reduce their negative effects? What were the results? (If nothing has been done at community level, why?)

Yes, GVH Phimbi is endowed with the Shire River which some community members use for irrigation farming on a small scale, e.g. bucket irrigation system. In 2016/17, Oxfam had a one-year project in the area which supported some households with winter farm inputs (e.g. Maize seed, fertilizer, legumes, and vegetables). Participants in this project were food secure in 2017, however due to lack of improved farm inputs for winter, few farmers have cultivated their winter gardens in the year of 2018.

h. Does the community believe that it can launch some initiatives to slow down the impacts or reverse trends? Which issues are beyond their capacity?

Yes, however, a lack of knowledge on Good Agricultural Practices, lack of access to improved farm inputs, lack of irrigation materials to launch medium scale irrigation, and lack of knowledge and materials on natural resources management have hampered community efforts to date.

i. What kind of interventions do participants believe could be done to address some of the causes?

Provision of start-up farm inputs for rain fed and winter farming; Promoting use of solar pumps to enlarge irrigation capacity in the community; Promote afforestation; Promote Good Agricultural practices and manure making; Promote Agricultural diversification

Solution tree

a. Describe the main solutions identified?

Availability of improved farm inputs for rain fed and winter farming; Use of solar pumps to enlarge irrigation capacity in the community; Afforestation; Good Agricultural Practices (GAP); Agricultural diversification; Manure Making and use

b. Describe the actions for implementing the solutions and the results of the actions.

| Actions | Results |
|---|--|
| <ul style="list-style-type: none"> • Training communities in Manure making and use • Training communities in forest management and trees planting in flood prone areas/ catchment areas/ forest reserves • Training communities in soil conservation technologies • Training community in Good Agricultural practices • Promotion of Agriculture diversification • Provision of improved farm inputs for rain fed and winter farming • Provision of Irrigation materials | <ul style="list-style-type: none"> • Increase in crop production • Increasing self-reliant in farming (e.g. Seeds secured in seed banks) • Increase in livestock production • Increased knowledge in Good Agricultural practices, natural resources management, soil conservation • Improvement in irrigation farming |

Pruning

| The problems that would be impossible to address in the short term? Why? | The problems that would be addressed through feasible action plans. |
|---|---|
| <ul style="list-style-type: none"> • Rising of Farm inputs prices • Prolonged dry spells • Environmental degradation • High population growth • Inadequate Agricultural land | <ul style="list-style-type: none"> • Soil degradation- loss of fertility due to erosion • Inadequate knowledge in Good Agricultural Practices- e.g. Agricultural diversification • Pests and diseases: e.g. Fall Armyworms, crop storage pests-weevils • Lack of access to improved farm inputs • Lack of irrigation farming materials |

3. Historical Timeline / Long-term Trend Analysis

The historical timeline for TA Mwambo, Zomba district, consolidated from all three GVHs where PVCA was conducted, is presented below:

| Hazard | Year | Coping mechanism | Intensity |
|----------------|--------------------------------------|---|--|
| Hunger | 1949 2001/2002 | <ul style="list-style-type: none"> - Piece work in near and far places - Growing of drought tolerant crops like pigeon peas and sweet potatoes. - Village banks | <ul style="list-style-type: none"> - According to communities it assumes that next season hunger will be experienced due to floods. |
| Stormy wind | 2010, 2016 | <ul style="list-style-type: none"> - Building strong houses - Planting trees around the area. - Extension services on modern house construction | <ul style="list-style-type: none"> - At least some community members were injured and houses damaged. - Assumed that in 2 years' time it will come again |
| Dry spells | 1992, 2004, 2011, 2017 | <ul style="list-style-type: none"> - Irrigation farming - Fishing at lake Chilwa - Village banking | <ul style="list-style-type: none"> - After a year or two this dry spell comes and affects a lot of households in all GVHs. |
| Floods | 1946/49 1991 1993 2015-2016 | <ul style="list-style-type: none"> - They take shelter in schools. - Construction of Dyke - Planted vetiver grass - Building high khondes around homes. | <ul style="list-style-type: none"> - When these floods come, it destroys properties and lives hence the community is becoming aware of hazard occurrence. |
| Fall army worm | 2016-2018 | <ul style="list-style-type: none"> - Applying pesticides - Applying ashes and soil on tip point of maize plant | <ul style="list-style-type: none"> - About 80 % of maize fields were attacked. |

| | | | |
|--------------------------|--------------|---|--|
| | | <ul style="list-style-type: none"> - By physically collecting and killing the worms | |
| Drying up of Lake Chilwa | 2014 2017 | <ul style="list-style-type: none"> - Doing piece work. - Going to Mangochi for fishing and other work. - Irrigation farming - Planting trees and reeds around the lake. | <ul style="list-style-type: none"> - It assumes that this will be a big problem and communities don't know what to do |
| Scabies | 1994 2018 | <ul style="list-style-type: none"> - Isolation - Medication | <ul style="list-style-type: none"> - With the help of medical staff the intensity won't be huge anymore |

4. Daily Time Chart



Figure 10. Pattern summary of daily activities between women and men, GVH Phimbi, Balaka district. Photo credits: Raphael Mkwate.

The session focused on outlining key daily activities patterns of community members of different groups, e.g. women and men. In summary, it was learned that men usually have more resting time than women and spend less time on income generating activities than do women. This means that the majority of the work at household level significantly involves women e.g. household chores, farming, selling of vegetables, casual labour, winter gardens, etc.

Daily Time Chart for Women in GVH Chilala, Machinga district

| TIME | ACTIVITY |
|-------------|---|
| 04:30-05:30 | Sweeping the surroundings |
| 05:30-07:00 | Drawing water |
| 07:00-07:30 | Cleaning utensils / bathing school children |
| 07:30-10:00 | Fetching firewood / relish |
| 10:00-12:00 | Preparing food (lunch) |
| 12:00-13:00 | Taking lunch |

| | |
|-------------|---|
| 13:00-17:00 | Drawing water, washing clothes, bathing |
| 17:00-18:30 | Preparing supper |
| 18:30-19:30 | Taking supper, cleaning the utensils |
| 19:30-20:30 | Chatting, relaxing |
| 20:30-04:30 | Sleeping |

5. Seasonal calendar

The session focused on understanding the seasonal activities and events related to Agricultural production, social-economic activities and consumption of the community.

In Balaka, the seasonal calendar showed that December to February is when the community experiences rains for rain-fed agriculture. The community is negatively affected by dry winds from March to November. The calendar also indicated that April to July is when food is available among households as farmers harvest crops (e.g. Maize, Pigeon peas, sweet potato, Cassava, etc.).

The below chart was developed by ZARDD based on communities' feedback in TA Mwambo in Zomba district.

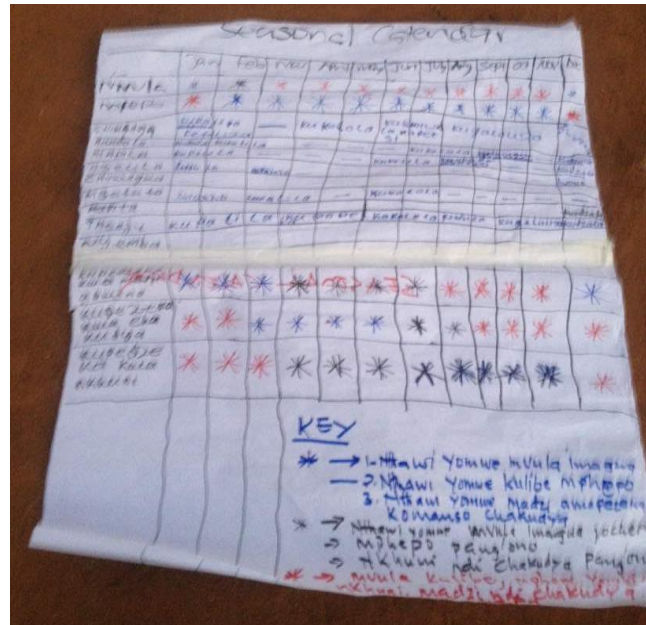


Figure 11. Seasonal calendar from GVH Matola, Balaka district. Photo credit: Raphael Mkwate.

Seasonal calendar from TA Mwambo, Zomba district

| ACTIVITY | JAN | FEB | MARCH | APRIL | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC |
|------------------------|---------------|-------------|---------------|---------------|--------------|------------------|---------------|---------------|-------------|-------------|-------------------|-------------|
| Rainfall | Lighter rains | Heavy rains | Lighter rains | Lighter rains | | | | | | | Lighter rains | Heavy rains |
| Weather | Mild | Mild | mild | mild | Cold weather | Cold weather | Cold weather | Mild | Hot weather | Hot weather | Hot weather | Hot weather |
| Winds | | | | | | | | | | Heavy wind | Heavy wind | Heavy wind |
| Floods | Very heavy | Very heavy | | | | | | | | | | |
| Diseases | High | High | High | Low | Low | Low | Low | Low | | High | High | High |
| Water availability | available | available | available | Low | Low | Low | Very Low | Very Low | Very Low | Very Low | Low | available |
| Piece work | Very High | Very High | Very High | Very low | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low | Very Low | Very High |
| Small scale businesses | Less | Less | Less | More | More | More | More | Less | Less | Less | Less | Less |
| Fishing | Very Low | Very Low | Very High | Very High | Very High | Very Low | Very Low | Very Low | Very High | Very High | Very High | Very Low |
| Maize | | | | harvesting | | | | | | | Planting, weeding | |
| Rice | | | | | | | | | | | | |
| VSLs | Depositing | Depositing | depositing | depositing | | Sharing of money | Money sharing | Money sharing | depositing | depositing | depositing | depositing |

6. Hazard and Risk Analysis

The assessment matrix for hazard and risk analysis conducted by CADECOM Mangochi in GVH Chilala, TA Liwonde, Machinga district, is presented below.

ASSESSMENT MATRIX FOR HAZARDS

| Hazard | Type of hazard | Warning signs | Speed of onset | Frequency | Duration | Elements at risk | IMPACT |
|--------------------------------|----------------|---|----------------|--------------------|--------------------|------------------------------|---|
| Strong winds | Natural | Unstable wind directions , heavy clouds | Rapid | Yearly | Shorter | People, livestock and houses | Crop damage, house roof damage |
| Soil erosion | Man made | Gully | Slow | Yearly | 3 months Jan-March | Land | Loss of top fertile soil |
| Drought | Natural | Erratic rains | Slow | Yearly | Three weeks | Crops | Crops withers and sometimes permanent wilting |
| Fall army worms | Natural | Not clear by community | Rapid | Yearly | Continuous | Crops e.g. maize | No harvest realized Hunger |
| Environmental/land degradation | Man made | Wanton cutting down of trees | Slow | Yearly | Continuous | Land | Low yields |
| Floods | Natural | Heavy rains | Rapid | Depend on Rainfall | 1 day | People, crops livestock | Loss of life, properties and houses |
| Elephants | Man made | None | Rapid | Yearly | Continuous | Crops, people | Crop damage, hunger ,loss of life |

7. Transect walk, resource and hazard mapping

Participants conducted transect walks across their communities to take note of the resources available to them as well as the hazards and risks they face in their communities.



Figure 12. Photo showing degraded land during the transect walk in TA Liwonde, Machinga district. Photo credit: Anastazio Makhulula, CADECOM Mangochi.

After conducting transect walks, community members produced maps of their resources and hazards.



Figure 13. Resource and hazard map from GVH Ngongondo, TA Liwonde, Machinga district.

8. Resilience Tool

In TA Ngowe, in Chikwawa, groups of women from FHHs, women from MHHs, youth, and men were convened to conduct this tool. First, the participants were asked to list down the characteristics/themes of a community they admire (Resilient/modern community), and the characteristics of a community they do not admire (e.g. a vulnerable community).

| Characteristics of a community they admire | Characteristics of a vulnerable community |
|---|---|
| <ul style="list-style-type: none"> • Wells and safe water • Forest reserves • Solar schemes for irrigation • Hygienic toilets • Good housing • Good road connectivity • Livestock keeping as a source of income • Groups involved in Village Savings Loans (VSL) • Fertile soils areas • Adequate Schools • Good nutrition status • Availability of hospitals | <ul style="list-style-type: none"> • Poor road connectivity • No schemes for irrigation • No tree nurseries • Poor safe water • No health facilities • Poor house structures • No groups involved in Village Savings Loans (VSL) • Inadequate schools • Inadequate maize mills |

Participants then gave a name to their community if it had achieved all the characteristics of a community they admired. They gave the name “Mwanaalilenji”, roughly translating to ‘the children have nothing to cry for’, meaning that they want to see their communities needing nothing because they have all necessities they can ever want. Participants then listed the five most important themes relating to energy, food security and water they would prioritise in their community, and ranked them on a scale of 1 to 4 based on the current status of their community in regards to that issue.

1. **Food Security**, given a score of 1 due to low yields (because of drought, FAW, and soil infertility), inadequate irrigation materials and skills, and low knowledge of soil and water conservation techniques.
2. **Safe water**, given a score of 2 because some boreholes have salty water, there are not enough boreholes, some are no longer in operation, resulting in people having to walk long distances to access water sources.
3. **Livestock for resilience**, given a score of 2 because few farmers have livestock, something they would like to see in a pass-on programme to promote resilience.
4. **Irrigation Scheme**, given a score of 1 because of the lack of equipment and skills for irrigation in the communities.
5. **Tree planting nurseries**, given a score of 1 because many trees in the area have been cut down, and natural trees have not been taken care of, resulting in few trees around.

| | | | | | |
|---|------------|--------------------|--------------------------------|-----------|---------------|
| 4 | | | | | |
| 3 | | | | | |
| 2 | █ | | | █ | |
| 1 | | █ | █ | | █ |
| | Safe water | Irrigation Schemes | Planting Trees/ Tree nurseries | Livestock | Food Security |

Figure 14. Resilience scores from TA Ngowe, Chikwawa district.

9. Wealth ranking

Ranking of wealth or wellbeing was used to understand vulnerability of community members by a simple ranking of different livelihood groups (Poorest of the poor, Poor, Better off poor). The criteria used by participants was availability of the following: House with Iron sheets, Cattles, Goats, Agriculture Land, Motor cycle, Food, Home land, Main source of income, Bicycle. The finding noted that about 76% of the households were categorized as poorest of the poor (KHOMO LOVUTIKA), 17% Poor (KHOMO CHITA BWINO) and 7% Better off poor (KHOMO LAMWANA ALIRENJI) as shown in the figure.

| Wealth Ranking | | | |
|------------------------|---------------------|------------|-------|
| Household Name | Category | Percentage | Count |
| KHOMO LOVUTIKA | Poorest of the poor | 76% | 84 |
| KHOMO CHITA BWINO | Poor | 17% | 19 |
| KHOMO LAMWANA ALIRENJI | Better off poor | 7% | 8 |

Figure 15. Wealth ranking from GVH Phimbi, Balaka district. Photo credit: Rafael Mkwate.

In TA Nsanama, Machinga district, the process started with drawing a map of the whole village and putting on the map all the houses with numbers and a separate sheet was used to list all the names of the households corresponding to the numbers on the map. Then participants were asked to list some of the characteristics of a household they consider in their community to be better off as compared to others. Characteristics listed include:

- Harvested enough food to last him/her the rest of the year (having grain storage full of grain, 'nkhokwe')
- Doing reliable business earning more than K20,000 per month
- Has iron-roofed house and is sleeping on good bedding
- Rearing livestock like goats, chickens, sheep and pigs
- Eats 2 or 3 meals per day
- Dresses in decent clothes
- Has irrigable land and is practicing winter cropping
- Is able to pay school fees for their children

Wealth Ranking results for all GVHs, TA Nsanama, Machinga district

| GVH | Village | Number of PWDs | | | Poorest HHs | | | Poor | | | Better off | | | Total | | |
|----------|---------------|----------------|-----------|-----------|-------------|-----------|---------------------|------------|------------|-----------------------|------------|----------------|--------------------|------------|------------|-------------|
| | | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| Mangulu | Mangulu | 1 | 11 | 12 | 3 | 11 | 14 5.2% | 55 | 181 | 236 88.1% | 2 | 4 | 6 2.2% | 61 | 208 | 268 |
| | Chindenga | 2 | 6 | 8 | 1 | 3 | 4 1.7% | 108 | 110 | 218 92.8% | 2 | 3 | 5 2.1% | 113 | 122 | 235 |
| | Chikuya | 3 | 5 | 8 | 6 | 13 | 19 22.1% | 18 | 39 | 57 66.3% | 2 | 0 | 2 2.3% | 29 | 57 | 86 |
| | Mgawo | 3 | 3 | 6 | 3 | 11 | 14 21.9% | 14 | 28 | 42 65.6% | 0 | 2 | 2 3.1% | 20 | 44 | 64 |
| Mkhumbwa | Mkhumbwa | 4 | 6 | 10 | 0 | 5 | 5 2.6% | 63 | 118 | 181 92.3% | 0 | 0 | 0 0.0% | 67 | 129 | 196 |
| | Nangoma | 2 | 2 | 4 | 10 | 6 | 16 20.3% | 20 | 24 | 49 62.0% | 12 | 3 | 15 19.0% | 44 | 35 | 79 |
| | Makawa | 4 | 1 | 5 | 4 | 12 | 16 8.8% | 16 | 95 | 156 85.7% | 3 | 1 | 5 2.7% | 72 | 109 | 182 |
| | Totals | 19 | 41 | 60 | 41 | 76 | 117 8.5% | 367 | 750 | 1167 84.6% | 24 | 1 6 | 41 3.0% | 496 | 884 | 1380 |

The table above shows a summary of household wealth in all GVHs the exercise was conducted.