



Developing Innovative Solutions with Communities to Overcome Vulnerability through Enhanced Resilience (DISCOVER)



Participatory Vulnerability and Capacity Assessment (PVCA) Report

for the districts of Balaka, Dedza, Karonga, Nsanje and Salima

December 2011



Acronyms

ACP	Alliance for Climate Protection
ADC	Area Development Committee
AIDS	Acquired Immunodeficiency Syndrome
CA	Christian Aid
CADECOM	Catholic Development Commission in Malawi
CBO	Community Based Organisation
CEPA	Centre for Environmental Policy and Advocacy
CHRR	Centre for Human Rights and Rehabilitation
COOPI	Cooperazione Internazionale
CU	Concern Universal
DADO	District Agriculture Development Office
DC	District Council
DFID	Department for International Development
DISCOVER	Developing Innovative Solutions with Communities to Overcome Vulnerability through Enhanced Resilience
ECRP	Enhancing Community Resilience Programme
ESCOM	Electricity Supply Corporation of Malawi
FGD	Focus Group Discussion
FHI	Family Health Institute
FISD	Foundation for Irrigation and Sustainable Development
FOCUS	Foundation for Community Support Services
GVH	Group Village Headman
HIV	Human Immunodeficiency Virus
IRLAD	Irrigation, Rural Livelihoods and Agricultural Development Project
ISDR	International Strategy for Disaster Reduction
JRU	Joint Resilience Unit
MP	Member of Parliament
NAPA	National Adaptation Plan of Action
NGO	Non-Governmental Organisation
NICE	National Initiative for Civic Education

NSO	National Statistical Office
PRA	Participatory Rural Appraisal
PVCA	Participatory Vulnerability and Capacity Assessment
SHA	Self Help Africa
SSLPP	Small Scale Livestock Promotion Programme
TA	Traditional Authority
UNICEF	United Nations Children's Fund
VCPC	Village Civil Protection Committee
VDC	Village Development Committee
VHC	Village Health Committee
VSL	Village Savings and Loans

1. Background

1.1 DISCOVER Programme

Following the establishment of the Joint Resilience Unit (JRU) by Department For International Development (DFID), Irish AID and the Norwegian Embassy; a funding window was created for Non Governmental Organisations (NGOs) in Malawi to access a grant fund for the implementation of a Climate Change Adaptation programme in the most vulnerable districts in Malawi. The objective of the programme is to reduce the occurrence and recurrence of extreme poverty and hunger in Malawi.

DISCOVER is a programme that was developed by a consortium of four NGOs namely Cooperazione Internazionale (COOPI), GOAL, Self Help Africa (SHA) and Concern Universal (CU) as the lead agency. Other implementing partners in the consortium are Solar Aid, Clioma, CUMO Microfinance Limited (a non-deposit taking rural microfinance institution owned by Concern Universal), Centre for Environmental Policy and Advocacy (CEPA) and Self Help Africa (SHA). Self Help Africa is collaborating with Foundation for Community Support Services (FOCUS), Foundation for Irrigation and Sustainable Development (FISD) and Small Scale Livestock Promotion Programme (SSLPP) in Karonga district. The DISCOVER programme is being implemented in disaster-prone areas in the five districts of Balaka, Dedza, Karonga, Nsanje and Salima. These districts were identified by the National Adaptation Plan of Action (NAPA) and programme partners as among the most vulnerable to disasters and climatic variability in Malawi. The specific objectives of the DISCOVER programme are as follows:

1. To increase the capacity of local authorities, communities and individuals to address and mitigate the impacts of climate change strengthened: 104 fully functional Village CPCs, 17 Area CPCs and 5 District CPCs, 59,700 households aware of their impacts on and solutions for enhanced individual and community resilience to climate change.
2. To increase capacity of communities and individuals to adapt their livelihoods to climate variability and the impacts of climate change and to manage disasters increased: 16,000 households with improved, diversified crops, 4,150 farmers practicing Conservation Agriculture and greater dietary diversity in 29,000 households, 50,000 households using efficient stoves, 5.8 million trees raised, 27,000 individuals (with primary focus being on women based on lessons learnt that are less privileged in accessing such services) directly benefitting from VSL and microfinance services
3. Strengthen information sharing between stakeholders on DRM and climate change adaptation: improved information shared which builds on evidence and practical experiences with 300,000 people reached with improved and relevant information.
4. Strengthen the early warning system for climate related disasters (slow and rapid onset

disasters): 55 communities covered by a community-based early warning system with trialed evacuation plans.

5. To contribute towards strengthened disaster risk reduction and climate policy and programmes and delivery structures of key Government Ministries and Departments: existence and use of community-based mechanisms for community engagement in policy and decision making processes, number and type of DISCOVER innovations that have been built into nationally endorsed adaptation and DRM programmes, and number and type of policies, strategic plans and programmes that have been influenced or contributed to by the programme (precise target number to be confirmed upon completion of CEPA's Policy Advocacy Strategy).

The programme targets 298,500 people in 104 Group Village Headman areas (GVHs) within 5 districts and 17 Traditional Authorities (TAs) who are vulnerable to climate variability. The programme is designed to work with communities and local government structures in order to bring about a tangible and significant increase in the resilience of the most vulnerable communities in the districts. The aim is to ensure that the most vulnerable communities and individuals are empowered to develop sustainable, entrepreneurial and innovative solutions to climate change variability.

The programme was largely developed based on secondary data from the affected districts and TAs. All partners believed that it was important to clearly understand the context of vulnerability

for each selected location in order to develop viable participatory solutions to the challenges which these communities face in order to enhance their resilience to climatic variability. A Participatory Vulnerability Capacity Assessment (PVCA) was therefore conducted across target areas in all five districts in order to ascertain the extent of vulnerability of each community and identify factors that are exacerbating the situation. This report presents the findings of this PVCA exercise.

1.2 PVCA process

PVCA is a process that empowers community members using participatory tools to systematically analyse their problems, suggest their own context-specific solutions and how to achieve those solutions. It is an essential disaster-risk-reduction tool which can be used for designing livelihood or poverty-reduction projects. The PVCA also helps reveal the links between the different kinds of risks a community faces and ways in which the members of that community interact (Christian Aid, 2009¹).

1.3 The DISCOVER PVCA Objectives

The PVCA had the following specific objectives:

1. To document the community members' current understanding of climate change and its impact on their livelihoods
2. To identify the key vulnerabilities of the communities in the DISCOVER programme areas

¹ Christian Aid (2009) Christian Aid Good Practice Guide: Participatory Vulnerability and Capacity Assessments (PVCA). Christian Aid

3. To document how communities perceive risks and threats to their lives and livelihoods
4. To help communities analyse the resources (capacities) and strategies available in their communities which can be used to address or reduce the identified risks
5. To help the communities develop their own action plans
6. To contribute towards the establishment of a baseline for the evaluation of the DISCOVER programme

2. PVCA Methodology

2.1 Study Districts

The PVCA was conducted in all the five DISCOVER districts: Nsanje, Balaka, Dedza, Salima and Karonga. All of these districts are prone to hazards of various kinds such as floods, dry spells, windstorms and earthquakes. These events disrupt people's lives and livelihoods, leading to hardship and food insecurity.

2.2 The PVCA study communities

The targeted communities for the PVCA were those that are more prone to the mentioned hazards. The DISCOVER programme covers 104 GVH but all of these could not be included in the PVCA due to cost implications and time limits.

Consortium partners therefore used a systematic random sampling method to identify communities for the process. The programme areas in each district were divided into zones. The zones were then stratified by grouping them communities in relation to similarity of geographical features like rivers, road access, settlement patterns, the nature of livelihood sources and nature of hazards affecting the same communities. Balaka, Dedza and Salima had eight zones each whilst Karonga, and Nsanje had six zones each. Secondly, using random sampling, one community (GVH area) was chosen from each zone to make sure that each zone was represented. This process led to identification of 36 communities where consultations were carried out.

Table 1: DISCOVER PVCA communities (GVH)

Dedza	Balaka	Karonga	Salima	Nsanje
Kabulika	Chakanza	Kayuni	M'manga	Chimombo
Chikomba	Govati	Mchekacheke	Kasache,	Chitsa
Dzindevu	Kanyimbo	Mwakaboko	Mtauchira	Kawa
Huwa	Kwitanda	Mwandwanga	Mwanzakanga	Mbenje
Kafulama	M'gomwa	Mwantende	Chionjeza	Nguluwe
Kakhome	Mpilisi	Mwaungulu	Saopampeni	Nyachikadza
M'ganja	Nyanyala		Kandulu	
Mchanja	Tsite		Maganga	

Participants in the PVCA process were community members from the sampled GVHs and representatives of community institutions such as Village Development Committees (VDCs), VCPCs and Village Health Committees (VHCs). Particular attention was paid to ensure that all the segments of communities were represented in the process - women, children, the elderly and people who are physically challenged were invited to the exercise through community leaders and extension workers who were knowledgeable of the targeted communities. In general, the total number of participants per session ranged from 20 to 50 members in all the districts.

2.3 Data collection

Data was collected using a PVCA checklist. The checklist was developed by the DISCOVER Monitoring & Evaluation (M&E) technical team in line with the DISCOVER programme thematic areas. The checklist comprised of the following thematic areas:

- Context and impact of climate change to the communities
- Hazard trend analysis
- Livelihoods and community capacity assessment
- Community Vulnerability Analysis
- Food Security and poverty assessment
- Household energy sources and utilisation

The main method of data collection was Focus Group Discussions (FGDs). In addition to the FGDs the following tools were used:

- Participatory mapping for community hazards and resources
- Hazard historical trend analysis
- Ranking – wealth and scoring
- Access to and control over resources and benefits profile (Gender Analysis)
- Stakeholder analysis
- Seasonal food availability and access
- Agricultural activity calendar
- Problem tree analysis and action planning

After development of the checklist, a number of steps were taken to standardise the checklist and ensure that trainers in the communities had the skills to use it. Firstly, the checklist was reviewed by the DISCOVER consortium members and members of the District Councils from respective districts where PVCA was going to be conducted. In addition, a training of trainers was conducted with key staff from the districts who in turn trained district teams who collected the data. Trainers shared concepts and terms that are related to PVCA in order to reach a common understanding on these. In addition, trainers also shared skills on how to use the checklist and application of Participatory Rural Appraisal (PRA) tools. Some of the key concepts that were discussed during training were as follows; disaster, climate change, hazards and resilience. The training of trainers was conducted for three days. After the training of trainers was concluded, the DISCOVER partners organized a three day training for the PVCA research teams at district level in all districts. At district level, the first and second day were focused on the theory

of PVCA, (tools used and processes) and the third day was used to pre-test

the checklist and make clarification or corrections appropriately.

3. Results

3.1 Contextualising climate change

3.1.1 Community understanding of climate change and its evidence

Climate change is defined as a change in the climate that persists for decades or longer, arising from either natural causes or human activity (ISDR, 2009).



Community hazard and resource mapping process with GVH Mbenje community (TA Mbenje, Nsanje district). This session was facilitated by Goal Malawi: *Photograph by Mathews Mutimaukanena.*

Community members in all the programme areas indicated knowledge of climate change. Communities defined climate change as a change in weather over time or things related to weather that result in certain extreme events for their areas, mostly in the negative sense. In all communities, climate change was explained by giving evidence of its impact on their day to day lives. For example, changes in rainfall patterns: rains that were expected between October and March now start later and stop earlier than the normal times, receiving too much rainfall

leads to flooding and at other times too little rainfall results in dry spells, as well unpredictable rainfall and variable amounts. Communities define climate change based on their current experiences compared to the past years, agreeing that it is warmer in recent years than before. The traditional cold and hot seasons have been changing such that some cold months are no longer as cold as they used to be. In addition to the changes in rainfall and temperature, the participants also mentioned frequent occurrences of dry spells, droughts, strong winds and earthquakes (Karonga). Some diseases such as the outbreaks of chicken pox (Salima) and influenza (Nsanje and Salima) were also associated to be signs of climate change.

While most people understood climate change in relation to elements of weather, in Karonga some people defined climate change more widely to include 'social and behavioural changes' in relation to what is happening now and what used to happen in the past. They pointed out issues of the HIV and AIDS pandemic and adoption of western ways of life which are influencing the behavior of the youth as aspects of life associated with climate change.

3.1.2 Impact of climate change

The communities reported that climate change has impacted their lives through reduced agricultural production resulting in food insecurity; through diseases including HIV and AIDS, malnutrition, water shortages and loss of household and community assets.

Food insecurity was mentioned as the most important and outstanding effect of climate change in all districts. The communities reported that too much precipitation within a short period of time resulting in flooding and inadequate rain leading to dry spells and droughts have been the two major causes of crop failure resulting in low or no yields across all the GVHs visited. Therefore most households have experienced reduced harvests over recent years which has resulted in chronic food insecurity

Secondly, communities in all the districts mentioned that floods have become a common phenomenon during rainy seasons. Communities reported that floods wash away their crops and in addition also wash away the fertile top soils resulting in land degradation and low soil fertility. In areas where soils are sandy minerals are also leached due to flooding. These factors contribute to loss of soil fertility and result in low crop production.

Considering the recurrence of these events which are due to climate change and variability, communities also mentioned that over the years they have noticed increased incidences of malnutrition. They reported that due to lack of adequate food, prevalence of malnutrition has increased in the communities. Malnutrition cases were reported as being most common among children under-five years of age and amongst the elderly.

Apart from increased cases of malnutrition, communities in Salima, Karonga and Nsanje districts also mentioned an increase in communicable diseases such as diarrhoea, influenza, and cholera as impacts of climate change. The participants indicated that when they have been hit by floods, protected water sources and toilets are destroyed which leads to increases in waterborne and water-related diseases. As flooding normally happens in the critical period (November to March) of the agriculture calendar, these illnesses reduce household labour availability for crop production.

Another impact of climate change mentioned was persistent water shortages. In Nsanje and Balaka communities reported that they now walk long distances looking for water because permanent and reliable water sources such as shallow wells and boreholes have dried up. Prolonged dry spells and early, short rainy seasons were cited as main causes of water shortages and reduced ground water in these areas.

Loss of life and property such as infrastructure, livestock and other economic activities were also mentioned as impacts of climate change. Members of the communities mentioned that almost everyone that participated in the PVCA process had lost important assets due to the occurrence of disasters. Some households said that they had lost economically active family members

Communities in Balaka and Karonga districts also linked the increased transmission of HIV and AIDS in their areas to climate change related factors. In Balaka, communities indicated that due to crop failure and the resultant increase in poverty levels, unprotected transactional sex was reported to be on the increase, resulting in the continued spread of HIV and AIDS. In Karonga communities indicated that floods force people out of their homes and when people are evacuated to safe areas due to floods, there are 'temporary marriages' in the camps which can spread HIV and AIDS. The people in Karonga also mentioned that vulnerable women offer sex for cash which leads to the further spread of HIV.

who were breadwinners both in the course of these disasters and to HIV and AIDS. They mentioned that the impact of this loss was too much to bear and was making them poorer.

In some districts communities mentioned that climate change was resulting in damage to the environment in general. Specifically they mentioned issues of soil erosion, cutting down of trees for fuel wood and charcoal as an alternative livelihood strategy; and siltation of water bodies. During the study some damaged infrastructure such as roads, houses, school blocks and bridges were noted by the assessment team in a number of communities.

3.1.3 Future perception of vulnerability and its impacts (analysis based on current experiences)

Vulnerability refers to the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard (ISDR, 2009). Many participants in the PVCA exercise mentioned that their future looked bleak and uncertain. They indicated that the damaging effects of disasters are increasing on a yearly basis resulting in erosion of both household and community assets. In all the communities visited members indicated that the frequency of disasters such as floods, dry spells, strong winds and earthquakes (Karonga) was increasing as compared to ten years ago. The people in Karonga indicated that earthquakes used to happen occasionally but nowadays it is happening frequently. In fact there was an earthquake the day before the commencement of the PVCA. Even though it was of minor intensity it still instilled fear among the community

members. The communities projected that these hazards will continue and that the risk on their livelihoods increase - as the frequency of these events increases there is less room for people to recuperate and recover their normal livelihood activities.

Women, children, the elderly, the people with disability and chronically ill were seen by communities to be more vulnerable and at risk compared to others members of the community. Women were generally considered to be more vulnerable because they bear the social and emotional responsibility of seeing their children go hungry because they are with them most of the time and have the responsibility of feeding them. In addition a majority of women stay at home and when disasters strike, the burden of rescuing both children and property falls on them.

Children's vulnerability is due to the fact that they are much less capable of acting on their own to protect themselves in times of fast occurring hazards (floods, earthquakes) and slow hazards (hunger, diseases). Secondly, during floods, children's education is affected as they are unable to access schools due to flooding rivers and washed away bridges. Thirdly, community members believe that children will be more vulnerable in cases of food insecurity meaning that they are at risk of malnutrition and increased morbidity.

As for the elderly, people with disability and chronically ill communities indicated that they will be more vulnerable because they are weak and less able to take care of themselves. The communities in Karonga indicated that when disasters occur, men tend to move to areas which might not have been

affected by the calamity and marry other women:

*Tawanalume kanandi tikutola mitala.
Pala njala yafika, tikuluta na
kukakhala ku nthengwa uku kuli
vakudya. Ntheula tikuchimbila njala
munthowa yeneyiyi”*

(We men are sometimes are polygamous - we move to areas which have not been affected by calamities like these, and marry another woman).

Men in this instance then seem be less vulnerable.

3.2 Hazard analysis

3.2.1 Community hazard and resource map.

A hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage (ISDR, 2009²).

During the PVCA communities were asked to draw community maps indicating hazard prone locations and the resources the communities owned. Apart from being a tool for information gathering the maps were also used for discussion as they provided visibility to analyze and understand the hazard prone areas. The maps also helped to identify and to show natural resources like water, land and forests.

In general the maps showed that villages were made up of several clans. The different settlement patterns in the

villages ranged from clusters to scattered and linear. Settlement patterns were generally aligned to roads, rivers, water sources, hills and other social services. The inhabitants of all the communities visited during the assessment were predominantly farmers. Land and water sources were considered some of the main resources available for the people of these areas and their livelihoods revolved around

them. Community resource map for Saopampeni village in Salima district



² 2009 UNISDR Terminology on Disaster Risk Reduction (2009) Geneva, Switzerland

3.2.2 Hazards in the communities

Error! Reference source not found. shows that in all the districts the common hazards mentioned were floods, droughts and dry spell and high winds. Further to this other hazards mentioned were wildlife attacks, earthquakes, crop pests and diseases and human disease outbreaks like cholera, diarrhoea and HIV/AIDS. **Error! Reference source not found.** provides the lists of the hazards identified in the districts.

Table 2: Hazards in the districts

Salima	Dedza	Nsanje	Balaka	Karonga
Armyworms	Crops pests and diseases	Armyworms	Drought	Earthquakes
Earthquakes	Droughts	Birds	Flooding	Floods
Floods	Dry spells	Dry spells	High winds	High winds
High winds	Earthquakes	Floods		
Human diseases (cholera, dysentery, HIV/AIDS)	High winds	High winds		
Wild animals (hippopotamus, crocodiles)	Human diseases (Cholera)	Locusts		
	Wildfires			

3.2.3 Intensity and frequency of disasters

A disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (ISDR, 2009). During the PVCA exercise communities indicated that over the past years they

have been affected by disasters of various types and magnitude. Floods were the most common disasters in the communities. For example in Salima and Nsanje they mentioned that floods have occurred almost on a yearly basis since 2001. Earthquakes were also mentioned as one of the outstanding disasters in Karonga with the 2009 earthquake being the most disastrous of all. Communities in Karonga indicated that earthquakes are happening on a

yearly basis. In Salima, communities also talked of wild animal attacks, especially crocodiles and hippopotamus. These are common in communities that are situated close to rivers. In all districts and targeted areas the impact of disasters on communities was noticed to be increasing. This trend has been noticed for the past ten years although the impacts are experienced at different levels. In general floods and dry spells are causing the most damage to people's livelihoods.



Flooding due to the siltation of the Lifidzi river

and local capabilities to respond to the warnings received (ISDR, 2009).

Communities in the DISCOVER programme areas were asked if they had any early warning systems for the hazards that affect them. Communities in Salima who are working with COOPI indicated they have a flood early warning system. The system is managed by the VCPC using river gauges for monitoring water levels and cell phones for communication. In addition, communities working with GOAL in Nsanje district also mentioned that they have river gauges for monitoring water levels. Apart from these, scientific early warning systems (rainguage, mobile phones) and information provided by the weather department through radio, communities in various sites indicated that they have their own local indicators for early warning of hazards.

3.2.4 Hazard early warning systems

An early warning system is defined as a set of capacities needed to generate and disseminate timely and meaningful warning information to enable communities threatened by a hazard to prepare and to act appropriately in sufficient time to reduce the possibility of harm or loss (ISDR, 2009). This definition encompasses the range of factors which are necessary to achieve effective responses to hazard warnings. A people-centred early warning system is supposed to comprise of four key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination of alerts and warnings;

Table 3 presents the local early warning indicators as documented from the districts.

Table 3: Locally used early warning signs

Hazard	District	Early warning indicator
Floods	Nsanje	Presence of many ants- <i>Midzodzo</i> moving together in a long column
		Movement of hippos around the village marking flood boundary
		Heavy rains for more than three days
		Radio weather forecast
	Dedza	Raining for three consecutive days in the uplands of Dedza
	Balaka	Heavy blowing of winds before rains
	Salima	Strong winds from different directions
		Water level measured using tree roots
		Frequent and heavy rainfall
		Continuous rainfall upland
		Dark cloud cover upstream
		River water comes with debris, bubbles and logs
		Sound of water in the river
		Calls of a particular large frog
		Spiders build their nests in the ground and fortify them
	Karonga	Occurrence of black millipedes (<i>Abongololo</i> , a <i>Nyamnyirenda</i>)
		Red beaked birds flying from the direction of the mountain very fast as if they are running away from something
		North easterly rains (Mwantende village)
Drought	Nsanje	<i>Mtondo</i> trees bears many fruits
		<i>Nsau</i> trees bears many fruits
		Appearances of Pangolin in the village
		Overlapping of cold seasons
	Dedza	South-easterly rains
		Prolonged cold spells extending into the month of August
	Balaka	Mango trees producing lots of fruits
	Karonga	Unbearable sunshine in August
Heavy winds	Nsanje	Radio weather forecast
Famine	Karonga	Occurrence of black millipedes (<i>Abongololo</i> , a <i>Nyamnyirenda</i>)
	Balaka	Mango trees producing lots of fruits

3.2.5 Monitoring and communication of the of early warning indicators

Almost all the communities indicated that they had experienced various disasters in the past and that following these experiences they had developed their own formal and informal early warning monitoring of these hazards. Apart from Salima and Nsanje where they have the scientific early warning systems, the other communities indicated that they do not have proper mechanisms for monitoring early warning indicators of hazards. The indicators are just noticed when they appear.

Table 4 presents the community communication modes documented during PVCA exercise. These communication modes are used mostly for fast onset hazards like floods, strong winds and animal attacks. However, for

In times of need and urgency communities indicated that they use various modes to communicate about impending hazards. In Salima, communities that are working with COOPI use cell phones to communicate to fellow community members and this is supplemented with other modes of communication in order to alert all the community members. In all the other sites, communities indicated they use local means such as drums, ululations and whistles in order to communicate emerging hazards.

slower onset disasters like droughts community meetings and other gatherings are used to share information and the indicators identified.

Table 4: Community hazard early warning indicators modes of communication

District	Mode of communication
Nsanje	Emergency meetings
	Beating drums
	Mega phone
	Whistling
	Phones
	Flags
Salima	Mega phone (loud speaker)
	Whistle
	Beating tins/ drums (in some cases the drum has a unique identifiable sound)
	Yelling
Karonga	Ululation
	Drum beating

3.2.6 Community reaction to hazard warning messages

Communities indicated that when people receive a message on an impending hazard, regardless of whichever method is used to pass on the message, they normally respond to the warnings. For example in the case of floods, communities in Nsanje indicated that they construct temporary shelters, transfer livestock and other assets to higher ground and assemble boats. In addition, for impending dry spells the people keep an additional supply of seeds with the intention to replant should the warning become a reality. In Salima district, the communities indicated that their response includes packing belongings in readiness for evacuation, evacuating to designated areas, treating drinking water, staying alert and informing other people.



3.3 Livelihoods and community capacity assessment

3.3.1 Livelihoods activities

Error! Not a valid bookmark self-reference. presents the livelihood activities that community members identified in their communities. The assessment showed that the communities were predominantly (over 90%) subsistence farmers whilst also engaging in a range of other income generating activities - many of them with relatively low profit margins. Apart from farming and trading of produce the other livelihood strategy that stood out in the study was *ganyu* (piece work). This is not a reliable livelihood activity as it depends on the availability of the piece work and it is generally a coping mechanism used when other livelihood options. The major disadvantage of *ganyu* is that it reduces the amount of time which vulnerable households can spend growing food on their own land.

In Balaka, 70% of the households indicated that *ganyu* is one of their major livelihoods strategies. It was also noted that firewood and charcoal trading has emerged as a major coping mechanism and in Balaka. 20% of households engage in this activity. This is not a sustainable livelihood option as it leads to the degradation of the environment and increase fuel wood scarcity. In Karonga 90% of households indicated that farming was their main source of income whilst 10% got their main income from other sources such as small businesses. In Dedza 100% were engaged in farming of some sort with 70% relying on *ganyu* and 45% owning some form of livestock

Table 5: Household livelihood activities (Multiple responses %)

Livelihood activity	Nsanje	Balaka	Salima	Dedza	Karonga
Farming	100	100	84	100	90
Farm produce trading	31	-	-	-	-
Ganyu (Piece work)	21	70	61	70	-
Livestock production	15	-	-	45	-
Fish trading	12	-	26	-	-
Firewood & charcoal trading	10	20	-	-	-
Selling mats & clay pots	7	-	-	-	-
Brick making	1	-	-	-	-
Small businesses (groceries)	-	30	41	-	10
Salaried workers	-	-	6	-	-
Bicycle taxi	-	-	11	-	-
Irrigation farming & trading	1	-	7	-	-

Other	-	-	-	-	
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3.3.2 Crops grown in the communities

Table 6 presents the list of crops being produced by farmers in the visited communities. The most common crop in all the sites was maize which farmers grow for food. In addition all the sites were also producing cotton for household income. Nsanje and Salima had the widest variety of crops being produced. Karonga has the smallest variety of crops by far.

Table 6: Crops being produced by households in the visited communities

Crop	Nsanje (%)	Dedza (%)	Balaka (%)	Salima (%)	Karonga (%)
Maize	80	100	100	95	100
Cotton	16	60	90	41	30
Sorghum	16	-	40	-	-
Brush millet	14	-	-	-	-
Sweet potatoes	10	45	30	30	-
Beans	4	-	-	69	-
Rice	4	70	-	76	-
Ground nuts	3	50	50	23	-
Vegetables	2	-	-	19	50
Cow peas	2	70	-	10	-
Banana	2	-	-	-	-
Sesame (Chitowe)	2	-	-	-	-
Sugarcane	0.3	-	-	18	-
Cassava	0.2	20	20	30	-
Tobacco	-	20	20	13	-
Pigeon peas	-	-	70	-	-
Soybeans	-	-	-	10	-
Bananas	-	-	-	6	-

3.3.3 Livestock production

Table 7 shows the proportion of households that own each type of livestock in the districts. The most popular livestock were chickens followed by goats. The communities indicated that chickens especially the local breeds were easy to raise and manage. They withstand diseases and are easy to feed. They also said that goats were the most resilient livestock to various problems such as diseases and the disasters affecting the communities for example floods and droughts.

Community consultations revealed that ownership of livestock especially the larger types is a measure of wealth and the poor are associated with having no livestock or owning smaller types. In addition it was also learnt that livestock is often sold during the lean months or after a disaster to provide income for purchasing maize and other foodstuffs. Hence the households that owned livestock were seen to be better off than those that did not as they have an additional coping mechanism.

Table 7: Household livestock production

Type of livestock	Dedza (%)	Balaka (%)	Salima (%)
Chicken	75	70	69
Goats	65	50	75
Guinea fowl	10	20	9
Cattle	20	10	18
Ducks	20	20	39
Pigs	25	20	9
Doves/Pigeons	-	20	1
Sheep	10	-	13
Rabbits	10	10	3

3.3.4 Changes in livelihoods as a result of climate change / variability

During the FGDs it was learnt that the livelihoods of the communities were changing in relation to climate variability. Communities indicated that in order to adapt their livelihood had to change and that communities had to devise coping

strategies in order to survive. For example people indicated that they were trying to grow more drought resistant crops such as sorghum, cassava and sweet potatoes whenever possible. The major difference between a resilient community and one which is not is the type of coping strategies engaged – positive or negative. Some of the

changes that have occurred as copying strategies in the communities visited include:

3.4 Assets, skills, and knowledge for climate change adaptation

3.3.4.1 Increased reliance on *Ganyu* (Casual Labour) to generate income

Communities said that they rely on the land in order to generate both food and non-food items through the sale of farm produce. However, due to the constant wiping out of crops by floods, winds or wild animals, communities end up producing far less than they require. As a result they have to rely on *ganyu* in order to generate income to fill the gap. This was noticed more in locations which were closer to town centres where people could source the *ganyu*. However, unfortunately when households move to seek *ganyu* they neglect their own gardens or leave them unattended which forms a vicious cycle as they are not able to generate sufficient income from their land to break free from their reliance on *ganyu*.

3.3.4.2. Increased irrigation farming

The effects of climate change have forced the communities to rethink their crop production strategies. Many farmers are now using their wet lands for irrigated farming. In addition flooded locations were also being used for crop production using residual moisture. In cases where plants have been washed away farmers who keep some seed then use it to replant their gardens. This was common in Salima and Nsanje. These activities have made the irrigable land more valuable and a much sought after asset for the households.

Table 8 (on following page) shows the assets, skills and the knowledge the communities have in relation to the predicted hazards. The table shows that based on past experiences of the communities on disasters like floods, droughts and high winds a number of lessons have been learnt and appropriate steps have been undertaken to address them. For example the

communities that are affected by floods indicated the various community structures like school blocks and religious buildings in their communities are some assets where they would seek shelter in times of flooding. In addition communities also demonstrated knowledge of what they do (preparedness) when a flood occurs. Table 8 shows that there is a great deal of knowledge, skills and experience which the communities have in relation to the disasters that befall them.

Table 8: Assets, skills, and knowledge to adapt to climate change effects

Hazard	Assets	Skills	Knowledge
Floods	Buckets, Plastic sheets, Tents, Classrooms, Churches, Boats, Shovels, Rain gauges, Hoes, Drums, Jerry Cans, Megaphones, Whistles, Wheelbarrows, Torches, Dish Racks, Raised houses, Panga knives, Raincoats, Gumboots, Bicycles, Utensils	Early warning systems in place: Megaphones, Drums, Rain gauges, Emergency drills and Communication protocol **	Continued heavy rains, Significant appearing of ants, Hippos, Fish (<i>Nyume</i> and <i>Nkhopokopo</i>), Birds (<i>Tsekwe</i>) VCPC members informed on how to relay information about disasters to community members, early warning signs and emergency evacuation skills
Floods (Salima)	Pangas, Needles for making mats, Sacks Bicycles, Churches, Schools, Roads, Vetiva grass, Boreholes, Dams, Forests, Elephant grass, Oxcarts, Mosques, Land, Livestock, Canoes, Loud speakers, Whistles, Bicycle Ambulances, Pails, Hoes, Dust bins, Torches, Pots, Lamps, Mattresses, First aid kit, Plates, Cups, Canoes, Shovels, Evacuation points, Condoms, Boats, Phones, Polywraps	Casual labour, Bicycle taxi, Making mats, Planting elephant grass, Constructing canals, Storing foods in bags, <i>Ulimi ogoma</i> , Canoe operation, River dredging, Temporary settlement construction using reeds, Constructing houses with strong and raised foundations, Construction of dykes, Construction of channels, Constructing houses with baked bricks, Replanting, Irrigation, Planting trees, Knowledge of drug administration	Fishing, Growing sweet potatoes and tomatoes, Selling livestock, Shifting to safe places, Planting trees and desiltation, Evacuating, Telling people to go to evacuation points.
Drought	Treadle pumps, Hoes, Manure, Watering cans, Jerry cans, Tree nurseries, Wheelbarrows, Rakes, Shovels, Crop seeds, Motorized pumps, Livestock	Irrigation, Farming along river banks, Manure making, Afforestation activities, Household small scale businesses, Piece work/Casual labour	Interpretation of traditional early warning signals - <i>mtondo</i> and <i>mkunkhu</i> trees producing abundant fruits, appearance of strange animals like <i>nkhaka</i> (Pangolin), Low rainfall, Wilting of crops
Pest Infestations	Pesticides, Watering cans, Brooms, Plastic sheets, Sprayers, Hoes, Availability of agriculture extension workers	Involvement of agriculture extension workers, Ability to spray crops, Tilling land to expose and kill pathogens	When leaves wilt, it signifies root destruction by aphids, Mottling of leaves, Wrinkling or shrinking of leaves, Lodging of stems means the plant has been attacked by <i>mafa</i> (worms)
Stormy winds (Nsanje)	Trees, Hoes, Stabilized sand bags, Long fences	Reforestation, Use of stabilized sand bags on roofs	Early indicators: Whirlwinds, Dark clouds, Dusty storms, Hooting of Storks

Heavy winds /Cyclones Salima	Rivers, Land forests, Livestock, Sickles, Panga knives, plastic sheets Trees	Afforestation, Sand bags and wire reinforcements on roofs, Making poles, from trees Irrigation Casual labour, Construction of temporary housing, Roof making and maintenance, Planting trees	Afforestation
Cholera	Boreholes, Roads, Forests, Dams, Pit latrines, Boreholes, Bicycles, Chlorine, Treated water.	Construction of toilets, Making stretchers, Digging rubbish pits, Constructing dish racks, Constructing kitchens	Eating hot foods, Drinking sate water, Washing hands at all times, Practicing good sanitation, Treating water
Dry Spells	Rivers, land, Dams	Irrigation (using residual moisture)	
Wild Animals	Barbed wire	Fencing gardens with barbed wire	Guarding
Chicken pox			Drinking water from soaked Indian Hemp.
Pests - Army Worms	Farm Inputs, Land, Rivers, Fruit trees e.g. mangoes and pawpaws, Sprayers, Chemicals, Money (to buy chemicals)	<i>Ulimi Ogoma</i> , Spraying techniques	Replanting crops, Applying pesticides, Seeking extension services, Early warning systems, Escorting children to and from school, Booking boarding for primary schools.

Ulimi Ogoma – Residual irrigation, Use of residual moisture for farming

3.5 Access to and control of resources, benefits and assets

Gender refers to the social differences between females and males throughout the life cycle. Gender differences are learned and though deeply rooted in every culture, are changeable over time, and have wide variations both within and between cultures. Gender, along with other aspects of social identity such as Table 9 presents the summary of assets, benefits and resources the communities identified at household

class and race, determines the roles, power, and access to resources for females and males in any culture (Oxfam GB, 2010). In this assessment the gender aspects of access to and control over resources, benefits and assets were assessed.

level. In addition it also shows who has access to and control over those resources and assets.

Table 9: Household access to and control over profile

Resource/Benefit	Access to				Control over			
	FA	FC	MA	MC	FA	FC	MA	MC
Bicycle	X	X	X	X			X	
Oxcart	X	X	X	X			X	
Farm land	X	X	X	X			X	
Chairs	X	X	X	X			X	
Livestock	X	X	X	X	X		X	
Settlement land	X	X	X	X			X	
Kitchenware	X	X	X	X	X			
Cell phone	X	X	X	X			X	
Family woodlot	X	X	X	X			X	
Radio	X	X	X	X			X	
Farm produce	X	X	X	X			X	
Fishing kit	X	X	X	X			X	

FA=Female adult, FC=Female child, MA=Male Adult, MC=Male Child

In all districts and communities, it was learnt that almost all household resources, benefits and assets were accessed by both men and women. However, there were significant differences when it came to control. It was learnt that, except for kitchenware, almost all the household assets were under the control of male adults in all the

communities. Control over livestock differed with the livestock size. Women reported having a share of control over chickens and other small livestock like guinea fowl and ducks whilst men were in control of goats and other bigger livestock like pigs, cattle etc. The other difference was with land. The control of land differed depending on the marriage

system being practiced in a particular location. For example in Balaka, Salima, Dedza and Nsanje where they follow the matrilineal system of marriage some communities reported that the women were the owners of the land enabling them to make final decisions on issues of land. However this control still goes back to the husbands as they are the ones providing households with farm inputs for the land and deciding what to produce. The only limitation these men had was that they could not sell the land. In addition, with decisions about disposing the land, women would still seek approval from their brothers or uncles. Hence for married women in the matrilineal system the control over land still went to the men they were married to or authorities in their clan.

In Karonga, the communities mentioned that they practice the patrilineal system

of marriage where the household stays in the village of the husband. The men control all the assets and have the final word on disposing of the assets. Women normally do not make decisions about these issues on their own. Even if they are household heads, they consult their brothers, uncles or their sons before the asset is finally sold.

Apart from domestic resources, some communal assets like village forests, water points, graveyards, schools, and irrigation schemes were also identified in some villages. Control of these communal resources was mainly in the hands of the GVHs. While schools were under the control of the School Committee, the Village Natural Resources Management Committees were put in place in selected villages to promote control of communal forest areas.

In one FGD a woman referred and equalled women to a piece of cloth, locally known as '*chitenje*' (a wrapper). She said women are like men's '*chitenje*' which when worn out, can easily be replaced by a new one. In this, she meant that women have no control over household assets as it is the men that make the final decision on any asset. If a woman tries to control or make a decision the man can divorce her and marry another woman. This was trying to emphasize the fact that women in this community are vulnerable and at risk for they do not have control over essential productive assets and cannot make decisions about them.

3.6 Stakeholders in climate change and adaptation

Table 10 shows the stakeholders communities mentioned as having significance and influence in issues of climate change adaptation at the community level, for example, CPCs, DC offices, NGOs and some CBOs. However, it is important to mention that the level of influence and significance of these institutions varied from one community to another and even at district levels.

Table 10: Stakeholder in climate change adaptation

Nsanje	Dedza	Karonga	Salima
Forest committees	DC	Red Cross	COOPI
VDCs	CUMO	Lusubiro Foundation	Action Aid
Agriculture committees	DADO	World Vision	VHC
VHC.	CADECOM	Government	Red Cross
Red Cross	UNICEF	-	Police
Water point committees.	Member of Parliament	-	DODMA
School committees	Traditional Authority	-	DC
Area Civil Protection Committees (ACP)	Red Cross	-	ADC
Village Civil Protection Committees (VCPC)	World Vision	-	Muslim Association
CBOs	IRLAD	-	Red Cross
Lead farmers	-	-	UNICEF
Livestock Committees	-	-	Agriculture
Home Based Care groups.	-	-	Malawi Lake Basin
HIV/AIDS support groups	-	-	MP
-	-	-	NICE
-	-	-	Forest Committees
-	-	-	FHI
-	-	-	Agriculture Committees
-	-	-	CHRR
-	-	-	Water Aid

3.7 Constraints to climate change adaptation efforts

The communities mentioned that considering the changes in climate that have occurred and related increase in their own vulnerability; they were trying to adapt their lifestyles in order to increase their food availability and alleviate the current poverty situation. However, in their efforts to address their vulnerability, they were encountering some challenges and these are presented in the following paragraphs:

3.7.1 Inadequate access to farming inputs

The communities in almost all the sites mentioned that currently the rainy season is unpredictable. Most of the time the season is short or punctuated with dry spells. They said that in order to alleviate this problem the likely solution is to plant improved crop varieties which could do well in their localities. These crops could be some varieties of maize, rice, sorghum, millet, cassava and sweet potatoes. However they mentioned that they lacked adequate farm inputs such as seed or planting materials and fertilizers to realize high yields. They said most of the planting materials for improved varieties have to be bought which is a challenge to most of the community members as they have limited means of earning income.

The community members also mentioned that they have recently noticed increased occurrences and intensity of garden pests which require pesticides. This is a cost which many of them cannot afford to pay.

3.7.2 “Borrowing from the future”

In Salima the communities indicated that in times of need, households must sometimes borrow food from others on the condition that they will repay twice the amount once they harvest their crop. Harvests are already poor due to the effects of disasters and yet they are indebted to pay back the food they owe. This exacerbates the already bad food situation. In other cases households borrow food in return for future provision of labour.

3.7.3 Limited access to land for agricultural production

Land scarcity has emerged as one of the major challenges coming in with the impacts of climate change. Due to excessive and frequent disasters such as floods, droughts and animal attacks some people said they are choosing to move to safer locations. However as they are moving they have to find settlement and farming land which is a challenge as most suitable land is already occupied. They said that in their new locations they have limited social services such as schools, health workers and agricultural extension workers in addition to rebuilding their settlements and livelihoods.

3.7.4 ‘Escape to the environment’

The communities mentioned that in the event of threats to their lives and livelihoods the next step is to get assistance from the surrounding environment which seems to be a free resource available to enable them to cope. However, in the discussion it was noticed that the environment was being used in both positive and negative ways. For example people in some communities mentioned that they were using wetlands for crop production. In the event of floods occurring, they survive on crops produced from winter

production. This was seen to be a useful coping strategy.. However for some communities especially in Balaka and Dedza they mentioned that they were going into the remaining forest areas to cut trees for firewood and charcoal for sale. Communities in these areas said that trees are diminishing and other alternative sources of fuel are becoming scarce. These practices show how the environment is being impacted by climate change. Apart from this people in a number of communities also said that due to the increase in the incidences of flooding they have noticed that their soils were losing fertility.

3.7.5 Mobile life

The communities also mentioned that coping with the impact of climate change uses up much of the time that community members could otherwise use for productive activities. They said that searching for food, renovating houses and other household assets after storm damage have become unplanned frequent activities which they have to attend to.

3.7.6 Increased incidences of theft

Finally community members also testified that there have been increased incidences of theft in recent years. They said that lately yield has been low for most households and of those that do not have alternatives some have resorted to stealing from those that have. This is a social problem.

Other constraints to adaptation include increasing levels of poverty due to

multiple hazards and frequent disaster incidences. Inadequate water supply, especially for irrigation is another major bottleneck to adaptation. Other constraints include; limited sources of capital for starting businesses, poor accessibility due to damaged road infrastructure, and limited support from organisations that only target a small proportion of people with their services. With respect to access to capital for businesses, stringent lending rules and difficult loan repayment conditions for lending institutions limits access to financial services.

It was learnt during FGDs that for poor communities, adapting to climate change and variability is a constant struggle. The vicious cycle of poverty is already hard enough to break and adding climate change issues complicates the situation even more. According to the community discussions, two main factors are responsible for the mal-adaptation to climate variability and change, and these are poverty and population pressure.

Poverty is a significant factor because people do not have resources with which to adapt to the effects of climate change. Population pressure is a result of little available resources that are under pressure from so many people who want to use them. This results in continuous environmental degradation by communities despite being aware of the consequences. In the end, poverty and population pressure start feeding off each other, with the result being even greater environmental damage.

4. Community Vulnerability Analysis, Food Security and Poverty Assessment

4.1 Community level poverty ranking

Table 11 shows the summary of the attributes that were presented in all the communities categorizing the better off (rich), middle income and the poor of their communities. The attributes were similar in all the sites.

Table 11: Community wealth attributes

Rank	Attributes
Better off (rich)	Livestock e.g. cattle, goats, pigs and chickens Food to last them year round Send their children to good and/or paying schools Well established businesses Iron roofed houses Sofa sets in their homes Ability to pay for medical services Big land holdings and large gardens (more than 2 acres) Property e.g. ox-carts, cars, motor cycles, maize mills, sewing machines Employ others (source of <i>ganyu</i>)
Middle Income (Poor)	Have food for more than half a year Own small scale businesses e.g. brewery, bicycle taxi, selling doughnuts Own smaller livestock like goats, chickens etc. Cultivate a diversity of crops Can employ <i>ganyu</i> labourers but can also participate themselves Employed Have bicycles Have good sizes of land up to 2 acres Able to meet some basic needs e.g. clothing, food Own a house that does not leak
Very Poor	Do not have food to last the whole year Rely on <i>ganyu</i> or firewood/charcoal selling for their daily needs Poorly built and grass thatched houses Mostly lack basic things like food and clothes Most likely not to have any type of livestock Lack income for supporting their children's education Limited land for farming Lack supporting farm equipment and inputs

The results in Table 11 will help in the targeting of the beneficiaries in the VSL component, for example, which is targeting the vulnerable. In addition it will also help to assess how the beneficiaries are moving from one category to another as they build up their resilience. Communities were then asked to determine what proportion of people in their community fell into each of these three categories. These results are set out in

Table 12.

Table 12: Community wealth ranks

Rank	Nsanje %	Dedza %	Balaka %	Karonga %	Salima %	Mean % across all Districts
Better off (rich)	18	10	10	20	16	15
Poor	24	40	30	30	30	31
Very poor	58	50	60	50	54	54

Table 12 shows that the majority (about 54%) of the households in the communities falls into the very poor category. The communities indicated that this group includes the elderly, orphans, the chronically ill and those households affected with long term illnesses. The middle income (poor) group can be considered as a group in transition. This group depends on the prevailing circumstances to determine whether they fall into the very poor category or to rise up into the better off position. The better off were the smallest group in all the communities surveyed comprising an average of 15% of total community members.

4.2 Food Security Assessment

Food security refers to the condition of having enough food all year round. It is built on three pillars namely

a) Food availability: sufficient quantities of food available on a consistent basis;

b) Food access: having sufficient resources to obtain appropriate foods for a nutritious diet;

c) Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.

4.2.1 Food sources

During the assessment the communities were asked to mention their main sources of food. The communities indicated that an average of 80% get the majority of their food from their own production. This food is sometimes supplemented by using income from casual labour, businesses and fishing. This means that any disruption in the agricultural production also disturbs the household food availability. The participants also indicated that persistent crop failure was being cushioned by increased irrigation farming. Crops that are produced during

summer season through irrigation included sweet potatoes, cassava and maize.

4.2.2 Food calendar

The participants in the PVCAs mentioned that they have enough food to feed themselves from the month of March to June, soon after harvest. Some communities begin to experience food shortages from the month of July and a larger proportion experience food shortages from November to February with January and February being the climax of food shortages in most households. The lean season varies based on district. The lean season is defined as months when most households do not have adequate food.

The following were mentioned to be the lean months for the districts respectively:

Salima: October –March,

Nsanje: December- February,

Balaka: December to March

Dedza: November to February

4.2.3 Constraints to food production and access

The communities indicated that their main source of food is their own production. However if production is affected it automatically also means their food situation is affected. During consultations communities mentioned that the following are the challenges which they face on food production:

- Limited arable land for crop production

- Limited access to improved varieties due to physical access and financial constraints
- Limited market for farm produce
- Inadequate access to extension services to guide crop and livestock production
- Dry spells
- Floods
- Pests e.g. Stock bower, Grasshoppers
- Wild animals e.g. Hippopotamus

4.2.4 Food insecurity coping mechanisms

The main coping strategies that are used to overcome food shortages include engagement in *ganyu* in exchange for food, but also consumption of wild foods that are gathered from the local forests within the area. Other households access food through the market using proceeds from livestock sales. However, people from the poor category of households are the worst affected. Others cope through gathering firewood and selling charcoal to survive during lean months. It was observed by communities that the lean period is getting longer every year due to the effects of climate change.

4.2.5 Social services available in the community

In general most of the communities mentioned the availability of the following social services

- Public health (HSAs)
- Agriculture extension
- Police forums
- School committees
- Forest committees
- Child protection committees

However, the distances of these services to various communities varied. Most communities mentioned that

agricultural extension services, health services and markets were lacking.

5. Energy sources

Table 13 presents the cooking and lighting energy sources for the communities.

Table 13: Fuel sources

Balaka	Nsanje	Dedza	Salima	Karonga
Cooking energy sources				
Firewood	Firewood	Firewood	Firewood	Firewood
Charcoal	Maize stalks	Maize stalks	Crop residues	Charcoal
Pigeon pea stems	-	-	-	-
Maize stalks	-	-	-	-
Crop residues	-	-	-	-
Lighting energy sources				
Paraffin lamps	Paraffin lamps	Paraffin lamps	Paraffin lamps	Paraffin lamps
Torches (battery)	<i>Muuni</i>	Torches (battery)	Torches (battery)	Torches (battery)
<i>Muuni</i>	-	Candles	Candles	Candles
Solar energy	-	<i>Muuni</i>	<i>Muuni</i>	-
ESCOM	-	-	-	-

Munni – Burning twigs

The communities visited said that their main sources of energy for cooking are firewood, charcoal and crop residues like maize stalks and pigeon pea stems as presented in Table 13.

According to the Welfare Monitoring Survey (NSO, 2009) in Malawi 87% of households use firewood for cooking, 8% use charcoal and electricity, 2%. The PVCA results adhere to these figures.

The tables below present the district figures as sourced from the Welfare Monitoring Survey 2009 results.

Table 14: Household main source of cooking energy (%)

District	Firewood	Electricity	Charcoal	other
Karonga	94	2	4	0
Salima	96	1	3	1
Dedza	97	0	1	1
Balaka	94	1	5	0
Nsanje	96	0	4	0

Source: Welfare Monitoring Survey (2009)

The firewood and charcoal are either sourced from the communal bush areas or bought from the markets whilst the crop residues are from people's gardens. Some households in Balaka and Salima also mentioned the use of fuel efficient cooking technologies in order to limit the amount fuel used for cooking. This involves use of portable, ceramic homemade stoves called *chitetezo mbaula* facilitated by CU. Other forms of cooking stoves were also mentioned but the *chitetezo mbaula* was cited as the most common type of fuel efficient cooking stove in Balaka. It uses only three sticks of wood at a time for cooking.

Paraffin lamps, battery operated torches (becoming popular), candles, and the popular traditional '*muuni*' (burning twigs) were mentioned as main sources of light in all the sites. Very few households mentioned use of solar energy and ESCOM electricity. The table below presents the results from Welfare Monitoring Survey 2009.

Table 15: Households main source of fuel for lighting (%)

District	Paraffin	Electricity	Candles	Firewood	Grass	Other
Karonga	89	9	1	0	0	0
Salima	83	4	1	1	6	6
Dedza	84	13	1	1	0	1
Balaka	90	3	3	0	2	2
Nsanje	82	2	1	9	2	4

Source: Welfare Monitoring Survey (2009)

6. Conclusions

The PVCA confirms that major causes of vulnerability in the targeted districts and selected TAs are flooding, droughts and dry spells. In some districts, wind storms are drivers of vulnerability. Since all communities rely on agriculture for food production, it was noticed that agricultural production is now challenged by climate change and variability. Food production is reduced and the lean period when most households suffer from hunger is increasing.

Community coping mechanisms are overstretched and force some households to engage in undesirable coping strategies such as theft. Reliance on natural resources is increasing and this scenario is aggravating an already challenging situation. The findings also strongly point to the fact that there are dwindling adaptive capacities of communities and in some, a sense of helplessness. Anticipation of humanitarian aid was evident in some communities.

The results indicate increasing levels of vulnerability and downward erosion of both household and community assets. The findings also indicate that household and community resilience is fragile due to continued occurrence of different shocks in different proportions.

Children, the elderly, people who are chronically ill and the poorest of the poor are bearing the impact of climate change in greater proportions. It was evident that HIV and AIDS are exacerbating the already bad situation. HIV affected households have limited capacity to adapt to climate change

effects. Some of these groups require safety nets before they can meaningfully be engaged in productive activities. Interviews with women also indicate that women are bearing the impact of climate change more than men but their adaptive capacities are limited. There is fear that there will be increased impact of climate change on women in the future as compared to men. The lack of recognition of the importance of women in some societies and the feeling that women are objects that can be owned or disowned at will, raises the question on whether we should integrate gender aspects more in the programme.

In some locations i.e. Balaka, access to safe water is an acute problem. The role of livestock in building resilient communities was significant in some districts. This suggests a scale-up of livestock component.

In some districts, it was suggested that we help districts implement their contingency plans and help them put different environmental and climate change instruments into practice.

The findings also seem to suggest that we need to think about ways to include a Reproductive Health and Family Planning component into the programme - perhaps by linking up with local service providers for delivery. This is due to the increasing population and the pressure it is exerting on the limited resources.

While the programme will deliver hardware inputs to communities, it is important that it should also deal with the attitudes and mindset of

communities towards natural resource management.

Communities face a shortage of support services from government and other stakeholders and the community extension system is almost non-existent in many districts. The programme should find ways of ensuring that communities supported under the ECRP have access to quality extension services.

The PVCA process also revealed that communities are already trying hard to deal with impacts of climate change with the available skills and resources at community level. The DISCOVER programme will build on these existing initiatives, skills and capacities in implementation.





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