



**REPUBLIC OF MALAWI**

**MINISTRY OF HOMELAND SECURITY**  
**Department of Disaster Management Affairs**

**COMPREHENSIVE BASELINE ASSESSMENT OF DISASTER RISK MANAGEMENT  
IN MALAWI**

**Report prepared by:**



**December, 2018**

## EXECUTIVE SUMMARY

This document presents a report of the baseline survey of Disaster Risk Management (DRM) in Malawi. This study was commissioned by the Government of Malawi through the Department of Disaster Management Affairs (DoDMA). The objective of this assignment was to conduct a comprehensive baseline assessment of disaster risk management in Malawi. The baseline assessment required collection of data and information on categories and indicators proposed which were approved by the client during the inception phase. Primarily, the data and information will be used to: (a) act as a benchmark to measure progress in the implementation of the DRM Policy; (b) analyse the costs and benefits of disaster risk management alternatives; (c) monitor and report on progress in the implementation of the SFDRR; (d) guide the design and implementation of disaster risk management programmes; (e) facilitate the coordination of stakeholders involved in disaster risk management in the country; and (f) provide baseline information for the design of a successor Disaster Risk Management Programme Support that DoDMA implements with support from UNDP.

The study collected data from 2075 households from 17 district and city councils. Specifically, the urban strata included the four (4) major urban areas: Mzuzu City, Lilongwe City, Zomba City and Blantyre City, while the other 13 districts (Karonga, Nkhata bay, Salima, Dedza, Ntcheu, Balaka, Machinga, Mangochi, Zomba, Phalombe, Blantyre, Chikwawa and Nsanje) were considered as rural (non-city) areas.

**Demographics:** The results show that on average the mean age of household head is 43 years. In terms of sex of head, more male headed households (54 %) were interviewed than female heads (46 %). About 13 % of households had a member with disability, about 14 % among the female headed households and 11 % among male-headed households. Furthermore, 7 % had physical disability (8% among female headed households, 5% male headed households). The study also established that 68 % of the household heads were able to read and write, 28 % reached senior primary school and only 2 % attained some level of tertiary education. Similarly, 51 % reported to be self-employed as farmers at the time of study, 11 % were house wives, 6 % were studying, and 5 % were either employed in the informal or formal sector. Crop sales account for 37 % of income sources with no significant differences between male and female headed households. Casual labour and petty trade accounted for 26% and 19 %, respectively. The study also revealed that 54 % of the households owned a mobile phone, 37 % owned a bicycle, 33 percent owned a radio, and 11 percent a television.

**Hazards and Disaster Occurrence:** The percentages of the households who reported that disasters occurred for the previous five years ranged from 80 to 100%. The effects of the disasters varied across the districts, the least impact being amongst residents of the cities. Households in the cities had readily available disaster mitigation strategies than those in the rural areas. Strong winds (No Rains) was reported by 74 percent of all the sampled households. This however was more of

a common disaster in the Northern and Southern Region than in the Central region. Drought and dry spells were the second common disaster that was reported by 68 percent of the sampled households. Higher proportions (70%) of households from Central and Southern Regions reported the drought and dry spells occurrences as affecting their livelihoods. The third disaster reported was outbreaks of crop pests and diseases by 62 percent of the sampled households. This disaster was more pronounced in the Northern Region (71%) than both the Central (51%) and Southern (63%). The fourth major disaster reported by 58 percent of the study population was floods. The Central Region (80%) registered the highest proportion followed by the Northern Region (67%) and Southern Region (47%).

**Household Resilience:** The study findings revealed that Ganyu (casual labour) (41%), Tree Planting (21%) and Small-scale Business (20%) were the three major measures that households take in order to be resilient to shocks and disturbances. Ganyu as an adaptive measure is highly reported by 50% of the households interviewed in the Southern Region followed by the Central Region (28%) and Northern Region (20%). The Public Works Programme (PWP) was the only safety net programme that contributes to the resilience of the households.

**Livelihoods loss from agriculture:** Majority of the sampled households (65%) revealed that maize was severely affected and followed by other cereals (18%), legumes/ pulses ((8%) and cassava (8%) in the past five years. If disaggregated by gender, female headed household's registered higher loss (67%) compared to male counterparts (64%). The study also revealed that Balaka was worst hit by disasters (93%) particularly maize losses and followed by Ntcheu (88%), Salima and Phalombe (84%) respectively, Zomba Rural (81%) and the least were recorded in Blantyre City (27%) and Lilongwe city (26%). For food security analysis in Malawi, it is essential to go beyond the aggregate loss figures and focus on the impact of those crops most important for household food security and for the case of Malawi its maize. This implies that those districts that were hit hard by the disasters they have been food insecure over the years.

**Vulnerability to disasters:** Household exposure to hazards depends on physical, economic, social and political factors. As such any mitigation measures need to take into consideration the different forms of vulnerability. The study asked households the key factors that make them particularly vulnerable to the different hazards they are exposed. Almost 70 percent mentioned poverty, more among the female headed households and those from Salima (93%), Balaka (90%), Ntcheu (90%), Balaka (88%), Mangochi (87%) and Dedza (86%) districts. Poverty remains a key factor to vulnerability as poor people are likely to live in areas exposed to potential hazards and have less resources to cope when a disaster strikes. Location in high risk areas was reported by 54 percent as a key factor that make households to be vulnerable to different hazards, with high proportions in the districts of Nsanje (87 %), Chikwawa (78 %) and Mzuzu city (77 %).

**Disaster Relief Support:** The study established that 27% of the respondents indicated that they received the support from government, NGOs, family members, Faith Based Organizations, Community Based Organizations, political parties and community members in the past two years. The results findings also revealed that the support were most relevant in Zomba city (100%), Blantyre city and district (100%), Balaka (91%), Karonga (90%) and just mention a few. The study also inquired the timeliness of the support received, the results have revealed that 78% respondents indicated that the support were timely received especially in especially in in Blantyre city (100%), Phalombe (95%), Zomba Rural (91%) and Karonga (95%). The study further revealed that in the past two years, the overall support received from different organizations were adequate (53%). However, the study revealed that Blantyre rural recorded the highest (83%) adequate support received and Nkhata bay was recorded the least (0%).

## **ACKNOWLEDGEMENT**

The consultant team would like to thank all the stakeholders and individuals who contributed to the successful execution of the DRM baseline study and the ultimate production of this report. We are especially grateful to the DODMA senior management for their support and guidance. We appreciate the invaluable input which would strengthen the future course of DRM interventions.

We sincerely extend our gratitude to those individuals who provided in-depth stories of change and gave permission for their names and positions to be used in this report. Many thanks go to the DODMA technical staff whose insightful opinions and lessons learned from their programming experience positively contributed to further insights into the development of this report. We are specifically highly indebted to Dr. Stern Kita, Mr. Revie Manda, and Mr. Boyd Hamela who contributed in various ways in ascertaining timely data collection and through mobilization of resources and creating time for interviews during the inquiry process. We also acknowledge the contribution of team of research assistants and data entry team whose commitment is recognized and reflected through the entire existence of this report.

## ACRONYMS

CBEWS	Community Based Early Warning System
CPC	Civil Protection Committees
DC	District Commissioner
DCCM	Department of Climate Change Management
DoDMA	Department of Disaster Management Affairs
DRM	Disaster Risk Management
EA	Enumeration Area
EWS	Early Warning System
FAW	Fall Army Worm
FGDs	Focus Group Discussions
FOCUS	Foundation for Community Support Services
GFCS	Global Framework for Climate Service
GVH	Group Village Headman
IFRC	International Federation of Red Cross
KII	Key Informant Interviews
NGO	Non-Governmental Organization
ODK	Open Data Kit
PDNA:	Post Disasters Need Assessment
PHC	Population and Housing Census
PPS	Probability Proportion to Size
PSU	Primary Sampling Unit
SFDRR	Sendai Framework for Disaster Reduction
SHA	Self Help Africa
TA	Traditional Authority
UNDP	United Nations Development Programme
UP	United Purpose
VCPC	Village Protection Committees
VCPC	Village Protection Committees
VH	Village Headman

# CONTENTS

EXECUTIVE SUMMARY .....	i
ACKNOWLEDGEMENT.....	iv
ACRONYMS .....	v
CONTENTS .....	vi
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
1 INTRODUCTION.....	1
1.1 Background to assignment.....	1
1.2 Objectives of the Baseline Survey .....	2
2 METHODOLOGY .....	3
2.1 Literature Review .....	3
2.2 Data collection.....	4
2.2.1 Cross Cutting Issues .....	5
2.2.2 Sampling Frame .....	5
2.2.3 Training and piloting.....	9
2.2.4 Electronic data collection .....	9
2.2.5 Ethical Considerations .....	10
2.2.6 Study Limitations.....	10
3 FINDINGS .....	11
3.1 Demographic and Social-economic characteristics.....	11
3.1.1 Age and sex of household head .....	11
3.1.2 Disability.....	12
3.1.3 Education level.....	13
3.1.4 Occupation .....	14
3.1.5 Sources of Income.....	15
3.1.6 Communication Assets.....	16
3.1.7 Productive Assets .....	18
3.1.8 Livestock ownership .....	18
3.1.9 Materials for the wall .....	19
3.1.10 Roofing materials.....	19
3.1.11 Water sources.....	20
3.2 Hazards and Disaster Occurrence .....	21
3.3 Household Resilience .....	26
3.4 Livelihoods loss from agriculture. ....	28
3.4.1 Agricultural investment losses .....	28
3.4.2 Productive assets losses.....	34
3.4.3 Other livelihood losses.....	35
3.4.4 Monetary Losses .....	36
3.5 Vulnerability to disasters .....	37
3.5.1 Factors that make households vulnerable to shocks .....	39
3.5.2 Deaths due to disaster.....	40
3.5.3 Missing due to disasters (expand) .....	41
3.5.4 Injuries due to disasters .....	41
3.5.5 Damaged Houses due to Disasters .....	41
3.5.6 Disaster Evacuation.....	42

3.5.7	Displaced Victims .....	43
3.5.8	Infrastructure Damages .....	43
3.6	DRM Institutions, Strategies and Knowledge .....	43
3.6.1	Mainstreaming of DRM .....	44
3.6.2	Decentralization through Information Centers .....	44
3.6.3	Emergency Operation Centres.....	44
3.6.4	Hazard Contingency Plans .....	44
3.6.5	Presence and Functionality of Civil Protection Committees (CPCs) .....	45
3.6.6	DRM Programs implemented at district level .....	47
3.6.7	Funding of DRM Programs .....	50
3.7	Disaster Relief Support .....	52
3.7.1	Response support type and relevance .....	52
3.7.2	Risk Reduction and recovery support types before and after disaster .....	55
4	CONCLUSION AND RECOMMENDATION .....	57
4.1	CONCLUSIONS .....	57
4.2	RECOMMENDATIONS .....	59
5	REFERENCE.....	61
6	APPENDIX 1 Tables.....	62
7	APPENDIX 2: Household Questionnaire .....	75
8	APPENDIX 3: Institutional Questionnaire .....	92
9	APPENDIX 4: Focus Group Discussions Checklist .....	107

## LIST OF TABLES

Table 1: Selected documents which were reviewed.....	3
Table 2: Methods of data collect data for datasets inventories.....	5
Table 3: Total number of sampled households in target districts and cities .....	9
Table 4: Mean age and sex of household head .....	12
Table 5: Percentage of households in possession of communication assets by districts .....	17
Table 6 Percentage Distribution of Households that Reported Occurrence of Selected Disasters .....	25
Table 7 Percentage Distribution of Households by disaster risk management measures .....	27
Table 8 Agricultural investment losses in monetary terms (Crops in hectares) .....	30
Table 9: Percentage of households reporting loss of livestock due to disaster.....	31
Table 10: Agriculture investment losses (Livestock).....	33
Table 11: Households who reported losing other livelihood assets due to disaster.....	36
Table 12: Loss in monetary terms .....	36
Table 13 Factors that make households vulnerable to hazards (%).....	39
Table 14 Number of deaths due to disaster.....	41
Table 15 Injuries due to disasters .....	41
Table 16 Damaged houses due to disasters.....	42
Table 17 Whether the household was evacuated in the last five years and place of evacuation.....	42
Table 18 Number of times public infrastructure got damaged.....	43
Table 19 Functionality Capacity of Civil Protection Committees at District, Area and Group Village Headmen Levels.....	45
Table 20 Distribution of DRM Programs and details of beneficiaries .....	48
Table 21 Funding of DRM Programs .....	51
Table 22: Relevance, timeliness and adequacy of the support received in the past two years (from 2016 to 2017).....	54
Table 23: Percentage of households by whether the household has a member with disability and type of disability .....	62
Table 24: Education level of household heads at district level (%) .....	63
Table 25: Percentage of distribution of households by main source of incomeMain source of income (%) .....	64
Table 26: Communication assets .....	65
Table 27: Percentage of households possessing specific productive assets .....	66
Table 28: Materials for the floor.....	67
Table 29: Percentage of households by main materials used for the main dwelling unit .....	68
Table 30: Percentage of households by main water sources at household level.....	68
Table 31: Percentage of households who consider to be vulnerable to the different types of hazards .....	69
Table 32: Factors that make one to be vulnerable.....	70
Table 33: Percentage distribution of households by support providers for disaster relief .....	71
Table 34: Percentage of households by type of support received due to disasters .....	72
Table 35: Percentage of households by risk reduction activities before disaster.....	73
Table 36: Percentage of households by risk reduction activities after disaster occurred.....	74

## LIST OF FIGURES

Figure 1: Disability by sex of household head (%).....	13
Figure 2: Disability at regional level (%) .....	13
Figure 2: Level of education of household head .....	14
Figure 3 Occupation of household head in the study districts(%).....	15
Figure 4: Sources of income (%).....	16
Figure 5 Percentage of households possessing specific communication assets.....	17
Figure 6 Percentage of households possessing specific productive assets .....	18
Figure 7: Ownership of livestock amongst the households.....	18
Figure 8: Materials for the wall used for the main dwelling house .....	19
Figure 9: Roofing materials on the houses of the households.....	20
Figure 10: Water Sources amongst the households .....	20
Figure 11: Percentage of respondents reporting occurrence of disasters and those that were affected by any disaster in the past five years.....	22
Figure 12 Percentage Distribution of Households by Disaster Occurrence .....	23
Figure 13 Major Existing Resilience Mechanisms Reported .....	27
Figure 14 Percentage of respondents reporting that they lost crops due to disasters.....	29
Figure 15: Acres lost per crop due to disasters across the three regions .....	30
Figure 16 Mean number of livestock loss.....	32
Figure 17: Estimated number of livestock lost due to disaster.....	33
Figure 18: Percentage of households who lost productive assets due to disasters.....	34
Figure 19: Average number of productive assets lost due to disasters by sex of head .....	35
Figure 20: Whether households consider to be vulnerable to the different types of hazards.....	38
Figure 21: Level of vulnerability severity .....	39
Figure 22: Service providers for DRM Relief Support.....	52
Figure 23: Type of support by service providers .....	53
Figure 24: Risk reduction initiatives before disasters occurs.....	55
Figure 25: Risk reduction and recovery support after disasters occurs .....	56

# **1 INTRODUCTION**

This document presents a report of the baseline survey of Disaster Risk Management (DRM) in Malawi. This study was commissioned by the Government of Malawi through the Department of Disaster Management Affairs (DoDMA). The report is organized as follows: (a) section 1 presents the introduction which has the following sub-sections; background to the assignment; objectives of the baseline study; (b) section 2 presents the methodology with the following sub-sections; literature review; household survey and sampling design; quantitative and qualitative data collection; ethical considerations; training and piloting; (c) section 3 presents the list of indicators to be collected through survey or to indicators to be analyzed and presented in the final report; (d) section 4 discusses the findings of the baseline survey; (e) sections 5 presents the recommendations based on the key findings; (f) section 6 presents the conclusion to the report.

## **1.1 Background to assignment**

Malawi is exposed to various types of hazards, both natural and human induced. In the recent decades, the country has witness an increase in the frequency and magnitude of these hazards, which often culminate into disasters. Apart from loss of lives and livelihoods, disasters have also contributed to slow socio-economic development of the country, while eroding generational efforts and gains in infrastructural development and other spheres of life. While most of cases are being attributed to climate change and climate variability, rapid population growth, unsafe construction practices, high levels of poverty, lack of enforcement of regulations, environmental degradation are also factors all contributing to the rise in disasters occurrences.

The Government of Malawi approved the National Disaster Risk Management Policy in 2015 as a way of ensuring a coordinated approach to building the resilience of the nation to natural and human-induced hazards. The implementation of the DRM Policy is being coordinated through the Department of Disaster Management Affairs (DoDMA), in the Office of the President and Cabinet. In 2015, Malawi also joined the global community in adopting the Sendai Framework for Disaster Reduction (SFDRR). The SFDRR is a global framework to guide the design and implementation of disaster risk reduction programmes at the global, national and local level. From 2019, countries will be required to start reporting on the implementation of the SFDRR. The office of the United Nations Strategy for Disaster Reduction coordinated the development of monitoring and reporting arrangements for the SFDRR, which were launched early December 2017.

Several efforts are currently underway to build the resilience of the Malawi nation to disasters, both from state and non-state actors. For instance, from 2012 to present, DoDMA has been implementing a Disaster Risk Management Programme Support which is being funded by UNDP. DoDMA has also been implementing two disaster recovery projects supported by the World Bank to address the effects of floods and droughts that occurred in 2015 and 2016. Government and other players have been providing humanitarian assistance to households affected by disasters, whenever they occur. These efforts aim at protecting the most vulnerable people from the adverse

effects of disasters, with focus on building long term resilience of communities and the nation to disasters.

## **1.2 Objectives of the Baseline Survey**

The objective of this assignment was to conduct a comprehensive baseline assessment of disaster risk management in Malawi. The baseline assessment required collection of data and information on categories and indicators proposed which were approved by the client during the inception phase. Primarily, the data and information will be used to: (a) act as a benchmark to measure progress in the implementation of the DRM Policy; (b) analyse the costs and benefits of disaster risk management alternatives; (c) monitor and report on progress in the implementation of the SFDRR; (d) guide the design and implementation of disaster risk management programmes; (e) facilitate the coordination of stakeholders involved in disaster risk management in the country; and (f) provide baseline information for the design of a successor Disaster Risk Management Programme Support that DoDMA implements with support from UNDP.

## 2 METHODOLOGY

Based on the terms of reference, the consultants employed both qualitative and quantitative methods in responding to the research questions and providing data for establishment of baseline values. Data collection tools included (a) Household questionnaire; (b) Institutional questionnaire (c) Focus Group Discussion guiding questions; and (d) physical observation checklist in the sampled communities and a checklist for the targeted institutions.

### 2.1 Literature Review

The consultant reviewed relevant local, regional and global literature to capture indicators. The consultant ensured that such indicators do not just cover DRM programming at country level but are sufficient to be used for reporting to the Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Africa and the Sendai Framework Disaster Reduction Framework at global level. **Table 1** presents some of the critical documents reviewed.

**Table 1: Selected documents which were reviewed**

ID	Documentation	Justification
1	The Climate Action Intelligence database (UNDP/EAD 2012)	Contains name of actors, their location and funding sources on climate change management in Malawi. As the database captures distribution climate change programmes, it contributed to inventory of resilience.
3	Sendai Framework for Disaster Reduction (2015 -2030)	Outlines the global commitment to disaster risk reduction and guided development of DRM indicators for Malawi.
4	Sendai Framework Data Readiness Review Report (2017)	Outlines current data availability and challenges for member states. This report was used to compare Malawi situation with other countries when writing the final report.
5	Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Africa	Outlines African countries commitment in managing disasters. This was used to synchronize Sendai Framework and Malawi DRM indicators to align with African Union commitments.
6	National Disaster Risk Management Policy (2015)	Sets long term goal and mission of reducing disaster losses in Malawi. It guides national DRM indicator development. We also used this document as referral for analysis on how existing DRM programme support the national policy and resilience of communities
7	DRM Operational Guidelines (2016)	The DRM operational guidelines (2016) support implementation of DRM Policy (2015) and describe

		roles of various stakeholder to DRM management in Malawi.
8	The Malawi Growth and Development Strategies (2017)	Is an overarching planning document in Malawi and aims at building a productive, competitive and resilient nation. It presents indicators regarding DRM management in Malawi. This document was used for analysis on how existing disasters impact on social economic development in Malawi
9	National Resilience Strategy (2017)	Sets number of indicators on how to measure resilience in poverty reduction, and attainment of food security and nutrition. This document guided the development of national DRM indicators.
10	Disaster Risk Management Programme Support to Malawi (2012 – 2016)	The programme among others has supported establishment of a national platform and coordination mechanisms for DRM/DRR under UNISDR guidelines and review contingency plans in 15 disaster prone districts. The consultants used this document as basis for analyzing the mainstreaming of DRM at institution level in district councils.
11	Baseline report for Early Warning System, Tools for previous studies (DRM preparedness)	Provide the status of DRM management in Malawi and may provide insights on designing data collection tools for the survey
12	National Disaster Recovery Framework (2017)	It establishes a systematic framework for operationalizing recovery needs, prioritizing the implementation of recovery interventions, and guiding the allocation of recovery investments across short-term humanitarian needs long-term reconstruction in alignment with national policies and laws. This was used to analyse the DRM resilience inventory.
13	National Disaster Risk Management Operation Guidelines for Malawi (2016)	The Guidelines describe the roles of various stakeholders in DRM and their respective DRM roles and responsibilities.
14	Report on Status of Disaster Risk Management in Sub Saharan Africa (2010)	Outlines status and best practices for disaster management in southern Africa. Would be used for in the final report. Analysis of comparison between Malawi and other countries in DRM programming

## 2.2 Data collection

Several data collection approaches were used to collect both quantitative and qualitative data or indicators. **Table 2** below presents how data for the expected inventories was collected.

Table 2: Methods of data collect data for datasets inventories

<b>Task</b>	<b>How was addressed</b>
<b>Inventory of Hazards</b>	Review existing datasets on hazards and disasters in Malawi i.e. DoDMA database and the National Climate Action Intelligence (EAD 2012). The consultant also conducted household interviews, Focus Group Discussions as well as Key Informant Interviews (KII) to establish profile hazards for areas
<b>Inventory of Exposure</b>	The consultants used Key Informant Interviews- KII to understand the factors that led to exposure and a checklist for physical observations for example landscape, building standards and location of structures on the likelihood of further occurrences of hazards.
<b>Inventory of Vulnerabilities</b>	The consultants used FGDs and household survey to collect information/data on inventories of vulnerability.
<b>Inventory of resources/capacities/resilience</b>	Data was collected through household and institutional survey, household and institutional checklists, In-depth KII interviews, FGDs, Case Studies and physical observations. Literature review also provided valuable information

## ***2.2.1 Cross Cutting Issues***

### ***2.2.1.1 Genders analysis***

To have a balanced analysis in terms of gender, the study deliberately disaggregated out data collection and analysis by gender that included men, women and youth. The gender analysis has isolated the magnitude of effect among the gender categories. This has added value to the baseline since the disaster perceptions, impact and challenges differ across gender categories. the report also takes into consideration how gender dimension affects resilience and recovery from hazardous occurrences.

### ***2.2.1.2 Vulnerability analysis***

Vulnerability is another aspect that was considered in this analysis. Disasters accelerate or worsen the degree of vulnerability among the disadvantaged groups such as the elderly, physically challenged, orphans and vulnerable children and the less literate. In this case, the baseline isolated and analyzed the extent to which the vulnerable are affected and their current mitigation and recovery mechanisms. The study also analyzed factors (social, economic, cultural, religious, environmental, political and built environment) safeguard or exacerbate vulnerability in an area.

## ***2.2.2 Sampling Frame***

To come up with valid and reliable results, a representative sample was drawn using probability sampling methods. The sampling included the three major regions of Malawi, namely North, Centre and South; and was stratified into rural and urban strata. The study also took into consideration methodological design of national-wide surveys by the National Statistics Office (NSO) such as the Integrated Household Surveys (IHS), Demographic and Health Surveys (DHS). The urban strata included the four (4) major urban areas: Mzuzu City, Lilongwe City, Zomba City

and Blantyre City, while the other 13 districts (Karonga, Nkhatabay, Salima, Dedza, Ntcheu, Balaka, Machinga, Mangochi, Zomba, Phalombe, Blantyre, Chikwawa and Nsanje) were considered as rural (non-city) areas.

The target groups for the DRM baseline assessment included individual households and institutions at district councils such as the Department of Climate Change and Meteorological Services (DCCMS), Environmental Affairs Department (EAD) and the Department of Water Resources within the sampled districts. The institutions further included NGOs and CBOs. While a multistage sampling was used for households (purposeful sampling to select EAs and random sampling to identify actual households), institutions and communities were purposefully selected in consultation with DoDMA.

#### **2.2.2.1 Household sampling techniques**

As stated above, a multistage sampling method was employed to select households. Thus, a stratified two-staged sampling was used in this survey for selection of household that were interviewed.

##### **First stage selection**

In the first stage of sampling, the primary sampling unit (PSU) was the enumeration area (EA) as defined in the 2008 population and housing census (PHC). The EA is the smallest operational area established for the census with well-defined boundaries, corresponding to the workload of one census enumerator. The EAs have an average of about 235 households' each. The EAs were sampled (within the target districts and urban areas) systematically with Probability Proportion to Size (PPS) from the ordered list of EAs in the sampling frame. Within each targeted district or urban area, a simple random sampling technique with equal probability was used to determine the number of EAs to be sampled. After the number of EAs was identified in each district or urban area, then purposive sampling was employed, based on key informant discussions with the client on high risk areas, to determine the actual EAs to be included in the sample.

##### **Second stage selection**

Following the selection of DRM sampled EAs in the first stage, a listing of households was conducted in each sample EA to provide the sampling frame for the second stage selection of households based on 2008 PHC. Even though the household list might have changed, the 2008 PHC still remains the current reference. In this case, the TA or the Village headman was contacted to provide the current listing of households. This also applied to urban areas but in urban areas there was also a possibility to randomly select households by using plot numbers. A random systematic sampling was used to select primary households (and replacement households) from the household listing for each sample EA.

Following the selection of sample EAs, a random systematic sampling was used to select 20 households. All the households within selected EAs will be assigned an identity (id) from 1 to n (the total number of households listed in the EA). To obtain the sampling interval (SI) for the selection of households within the sample, EA households (n), were divided by 20. A 2-point decimal places will be maintained. The sample households within the sampled EA will be identified by the following selection numbers:  $\lceil \frac{S}{SE} \rceil S = R + \lceil SI * (j-1) \rceil$  rounded up to the next integer, where  $j = 1, 2, 3, \dots, 20$ . The  $j$ -th selected household is the one with a serial number equal to  $S \cdot \lceil \frac{SI * (j-1)}{SE} \rceil$ .

### 2.2.2.2 Household sample size and power calculations

The sample size for a household survey such as the DRM baseline assessment is determined by the accuracy required for the survey estimates for each domain, in this case, a district is a domain. The accuracy of the survey results depends on both the sampling error (error due to non-representativeness of the sample) and the non-sampling error (arising from human error). Sampling error decreases with increase in sample size while non-sampling error may increase with an increase in the sample size. Specifically, sampling errors are inversely proportional to the square root of the sample size as shown in equation (1).

$$SE = \sqrt{\sum_{s=1}^S \frac{n_s(1-p_s)}{n_s-1} \sum_{i=1}^{n_h} (\mu_{si} - \bar{\mu}_{si})} \quad (1)$$

Where SE is the sampling error,  $p$  is the overall sampling proportion,  $n_s$  is the sample size for stratum  $s$  and  $\mu_{si}$  is the weighted value of the variable  $y$  in the  $i$ -th cluster in the  $s$ -th stratum.

Equation (2) shows that with a smaller sample size, sampling error increases. This in turn means that the data from the sample may be less representative than expected. It is therefore important that the overall sample size should be manageable for quality and operational control purposes. In other words, we need a sample size so that both errors are minimized. This is especially important given the challenge of collecting accurate information on impacts of climate change on household livelihoods and associated economic practices as well as the effectiveness of weather and climate forecasts.

$$\begin{aligned} \frac{\partial(SE)}{\partial n_s} &= \frac{\partial \left( \sqrt{\sum_{s=1}^S \frac{n_s(1-p_s)}{n_s-1} \sum_{i=1}^{n_h} (\mu_{si} - \bar{\mu}_{si})} \right)}{\partial n_s} \\ &= -\frac{1}{2} \left( \frac{2n_s-1}{n_s-1} \right) \left( \sqrt{\sum_{s=1}^S \frac{n_s(1-p_s)}{n_s-1} \sum_{i=1}^{n_h} (\mu_{si} - \bar{\mu}_{si})} \right)^{-1} < 0 \end{aligned} \quad (2)$$

Taking into account all these factors, all the sampled EAs in each of the 28 districts will constitute the sampling frame for household interviews. Sample size for this study is calculated using equation (3):

$$n = \left[ \frac{z^2 [p(1-p)]}{\xi^2} \div \left\{ 1 + \frac{z^2 [p(1-p)]}{\xi^2 N} \right\} \right]$$

$$= \left[ \frac{\xi N (z^2 (P(1-P)))}{\xi^2 (\xi^2 N + z^2 (P(1-P)))} \right] \quad (3)$$

Where: N = Population size; n=Sample size;  $\xi$  = Margin of error; z= z-score; p= probability value (p-value). The study will be powered at 5% marginal error and point estimates will have a 99% confidence interval.

The sample size for this study has been calculated to be 1,994 households in the targeted 13 districts and 4 urban areas. To account for an estimated 5% non-response rate which is still conservative considering very high response rates in national surveys in Malawi, a total sample of 2,098 is estimated as from equation (4).

$$n_D = \frac{h}{N} \times Total\_ Sample\_ Size \quad (4)$$

In this case it will be;

$$n_D = \frac{h}{N} \times 2098 \quad (5)$$

Where: *h*= number of household in a district; *nD*=district sample size *N*=Total number of households in targeted districts and urban areas. The table below summarizes the sample sizes for each district

To collect information from these 2,098 households, EAs will be selected across the targeted districts and urban areas with a bias towards disaster prone areas. Using Optimal Design software, it has been established that a sample size of 2,098 households, distributed among EAs (clusters), an intra-cluster correlation coefficient (ICC) of 0.20 and at a level of significance of 0.05. The study therefore, resulted into a power of about 0.90. Theoretically, a sample size that gives a power of at least 0.8 is deemed very representative enough. In this case there was sample power of roughly about 0.9 which technically implies that we were theoretically good. To increase representation of areas with higher exposure to weather-related natural hazards, a minimum of 3 EAs in each targeted district or urban area was selected while in each EA a total of 20 households were interviewed with replacement. **Table 3** below presents the total number of sampled households segregated by target districts and urban areas.

**Table 3: Total number of sampled households in target districts and cities**

<b>ID</b>	<b>District</b>	<b>No. sampled Enumeration Areas (EAs)</b>	<b>Adjusted sample size (households) with 5% nonresponse</b>	<b>Actual</b>
1	Karonga	4	80	80
2	Mzuzu City	3	60	62
3	Nkhata bay	5	100	118
4	Salima	5	100	107
5	Lilongwe City	7	140	138
6	Dedza	4	80	73
7	Ntcheu	7	140	145
8	Balaka	6	120	120
9	Zomba District	5	100	110
10	Zomba City	3	60	67
11	Machinga	12	240	234
12	Mangochi	12	240	250
13	Phalombe	5	100	122
14	Blantyre District	4	80	80
15	Blantyre City	6	120	122
16	Chikwawa	6	120	126
17	Nsanje	6	120	121
	5 Percent Error		98	
	<b>Total sample</b>		<b>2,098</b>	<b>2075</b>

### ***2.2.3 Training and piloting***

The consultant hired 27 research assistants and 5 supervisors for data collection. Training was for 7 days including piloting. The intensive training focused on the introduction to DRM, objectives of study, methods and data collection tools of the baseline survey.

### ***2.2.4 Electronic data collection***

The study used electronic data collection method using a platform called Open Data Kit (ODK). The study used tablets in the administration of household, whilst institutional questionnaires, checklists and recording FGDs and Key Informant Interviews was generally in hardcopies. ODK synchronized data capture to a centralized hosting server for further analysis. The advantage of the electronic data collection and on-line facility is that it enhances quality control through real time monitoring and problem rectification. The second advantage is that in case of eventualities, the study team does not lose all data as some of it has already been backed up at the server.

### ***2.2.5 Ethical Considerations***

The is a study with minimal risk. Nonetheless, the consultants understood that the assignment has its own guidelines on confidentiality of data and respondents. Prior consent from identified potential respondents will be sought. The consultants also understood that the data and all related materials from the survey will not be disclosed to third parties.

### ***2.2.6 Study Limitations***

The study encountered challenges in obtaining qualitative data from the districts. It was planned that the district-based DRM officers would be the key respondents of the tool. The data collected was mostly administrative data that the district DRM officer collects from all the sectors of the district, compiles and sends to the national headquarters. However, in some districts the DRM officers could not provide this information and in some districts and for some variables, there was incomplete data.

### **3 FINDINGS**

#### **3.1 Demographic and Social-economic characteristics**

The main objective of this chapter is to present precise and descriptive summary of some demographic and socio-economic characteristics of the sample households during the baseline study. Hence the section provides a description of the demographic structure of the sample, important for policy interventions, as well as demographic and socio-economic information that is vital to interpret the findings of the study.

##### ***3.1.1 Age and sex of household head***

Age and gender in disaster risk management remains critical for policy advice, guidelines and best practices on how to make disaster risk management gender sensitive. More importantly, understanding the disaster preparedness behaviors, disaster specialists could design interventions towards specific demographics such as age, sex and location.

The results in Table 4 depict that on average the mean age of household head is 43 years, with younger household's head in the urban areas of Mzuzu city and Zomba city with an average of 38 years old. While relatively older household's heads were found in the districts of Nsanje (47 years old) and Chikwawa (46 years old). In terms of sex of head, more male headed households (54 %) were interviewed than female heads (46 %).

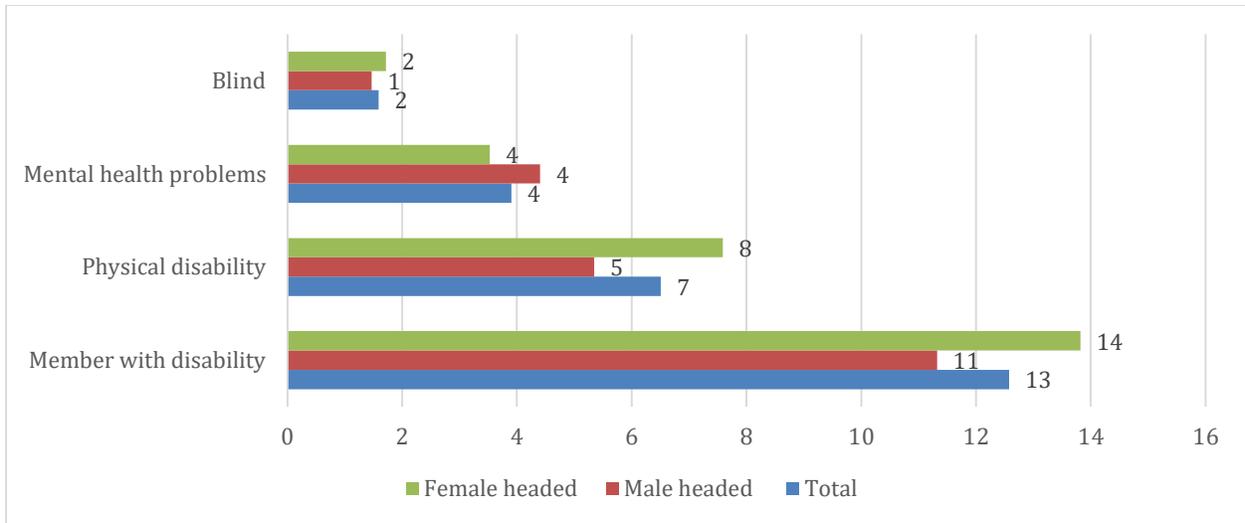
**Table 4: Mean age and sex of household head**

	Mean age of Household Head	Sex of household head (%)	
		Male	Female
Karonga	44	48	53
Mzuzu City	38	60	40
Nkhata Bay	43	46	54
Salima	46	44	56
Lilongwe City	43	53	47
Dedza	42	44	56
Ntcheu	43	41	59
Machinga	44	48	52
Balaka	43	39	61
Mangochi	41	33	67
Zomba Rural	40	43	57
Zomba City	38	48	52
Blantyre Rural	41	43	58
Blantyre City	41	48	53
Nsanje	47	62	38
Chikhwawa	46	56	44
Phalombe	42	49	51
<b>Total</b>	<b>43</b>	<b>46</b>	<b>54</b>

### **3.1.2 Disability**

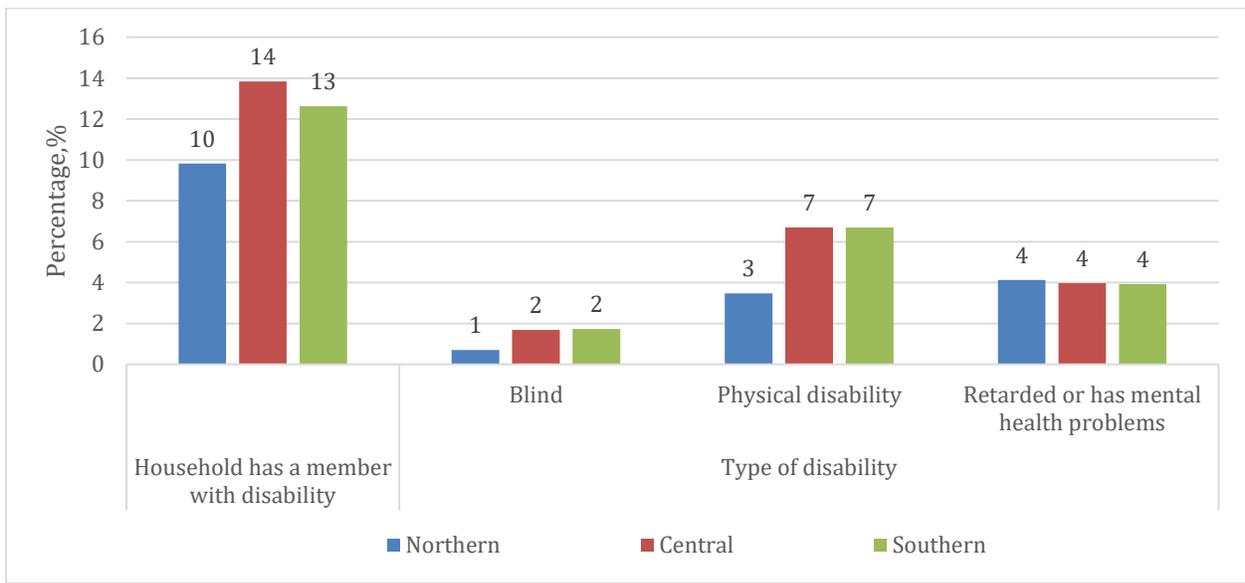
Disaster events threaten the health, life and well-being of all people however people with disabilities are disproportionately affected. The study sought to understand if the interviewed households had any member who had some level of disability, as the 2008 UN Convention on the Rights of Persons with Disabilities (UNCRPD, 2006: Article 11; Schulze, 2009) advocates that states should take ‘all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk’ including conflict, humanitarian emergencies and natural hazard events.

About 13 percent of households had a member who had a member with disability, 14 percent among the female headed households and 11 percent among male headed households. About 7 percent had physical disability (8% among female headed households, 5% male headed households), 4 percent had member with mental health problems and 2 percent had a member who was blind (Figure 1).



**Figure 1: Disability by sex of household head (%)**

At regional level, the central region (14 %) had slightly more people with disabilities than the southern (13 %) and northern regions (10 %). There were equal numbers in terms of those with mental health problems at 4 percent but in general more were in the physical disability category. District level disaggregation are depicted in the annex Figure 22.



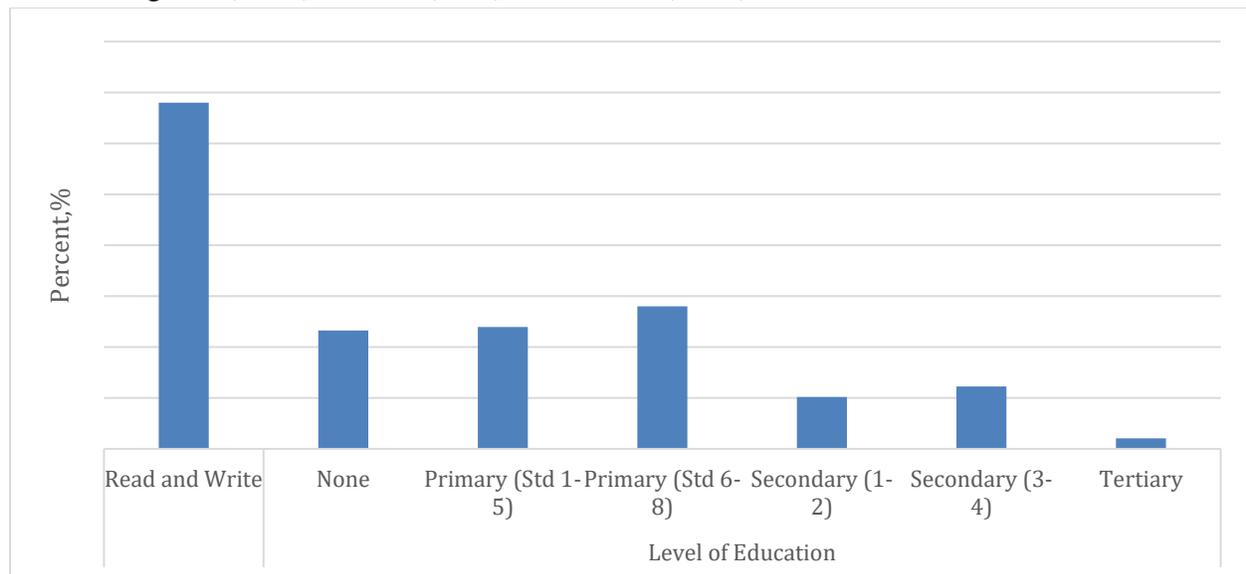
**Figure 2: Disability at regional level (%)**

### 3.1.3 Education level

The level of education remains crucial in increasing level of awareness of the effect, causes as well as management of risks that contribute to a culture of prevention to disasters. The level education

also shows some level of human capital of the population. More importantly, if the population is not made aware of disaster risks and do not acquire the knowledge necessary, and develop the appropriate behavior, attitudes and level of involvement then they will not be able to prevent the disasters. As such education remains key to facilitate and contribute to disaster preparedness and mitigation.

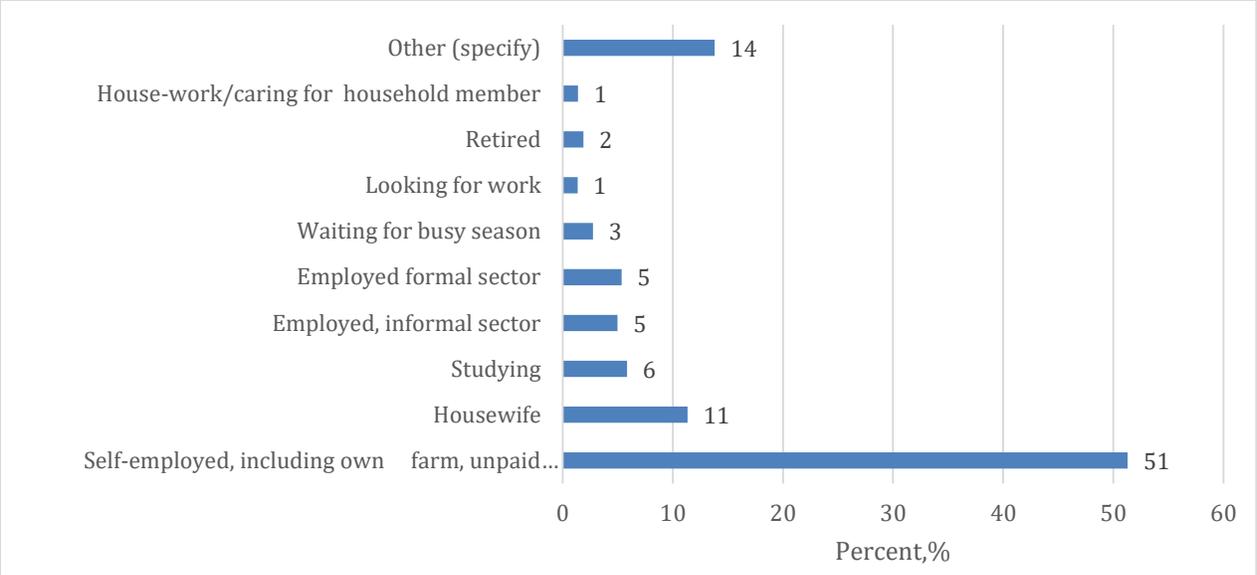
A total of 68 percent of the household heads were able to read and write, 28 percent reached senior primary school and only two percent attained some level of tertiary education (Figure 2). The disaggregated data at district level (Annex 1 Table 24) shows that Blantyre city (94 %), Karonga (85 %), and Mzuzu (82 %) had the highest numbers of household heads able to read and write while Mangochi (56 %), Balaka (54%) and Salima (54 %) had lowest numbers.



**Figure 3: Level of education of household head**

### 3.1.4 Occupation

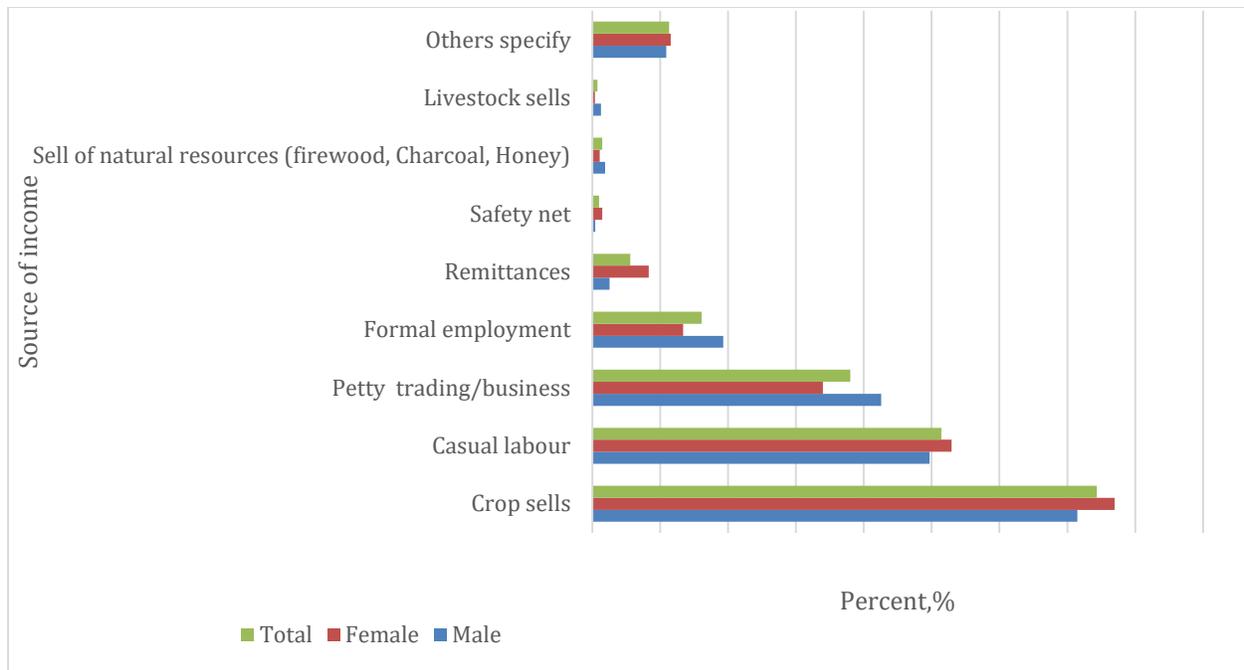
In terms of occupation of the households, almost half of the households (51 percent) reported to be self-employed as farmers at the time of study, 11 percent were house wives, 6 percent were studying, and 5 percent were either employed in the informal or formal sector. Since majority of the households are farmers, the level of vulnerability increases due to the recurrent episodes of disasters such of floods and droughts have negative outcomes on the agriculture sector. As noted in the PDNA (2015) report, the biggest economic loss experienced by a single sector was felt by the agricultural sector due to losses in crop production.



**Figure 4 Occupation of household head in the study districts(%)**

**3.1.5 Sources of Income**

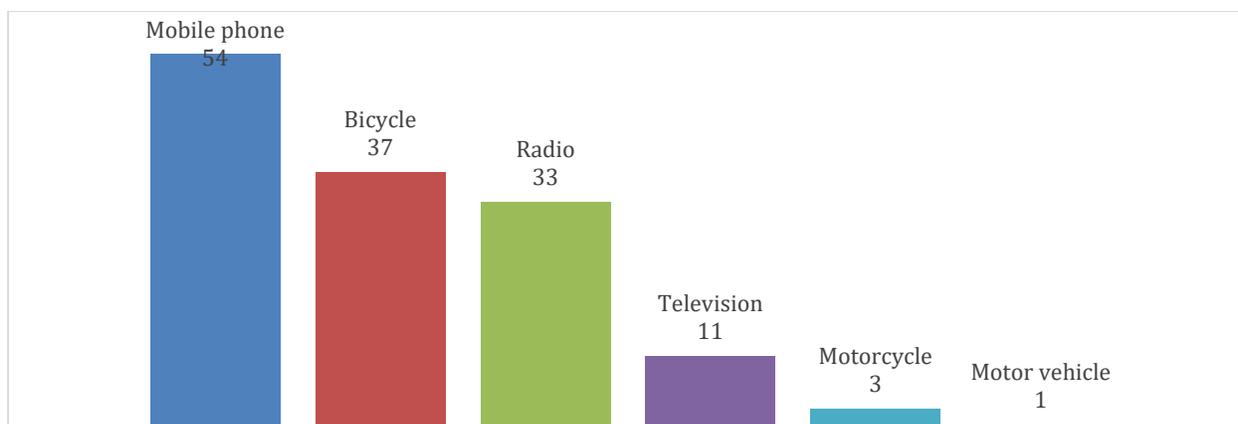
Like occupation, agriculture remains a key source of income for most of the households in the country. Crop sales account for 37 percent of income sources with no significant differences between male and female headed households. Casual labour and petty trade accounted for 26 and 19 percent, respectively. It would be noted that any major disaster on the agriculture sector would significantly erode income levels of the households (Figure 4).



**Figure 5: Sources of income (%)**

### 3.1.6 Communication Assets

Effective information exchange between information sources and those to be impacted by the disaster event is a key element in efficient disaster response, prevention and mitigation. The best information dissemination systems allow for easy communication with many recipients. In this study, households were asked to indicate the ownership of communication assets such as mobile phones, radios, bicycles and television. Information on ownership of communication assets is key in addressing information transmission before, during and after occurrence of disasters. The baseline study results show that 54 percent of the households owned a mobile phone, 37 percent owned a bicycle, 33 percent owned a radio, and 11 percent a television (Figure 5).



**Figure 6 Percentage of households possessing specific communication assets**

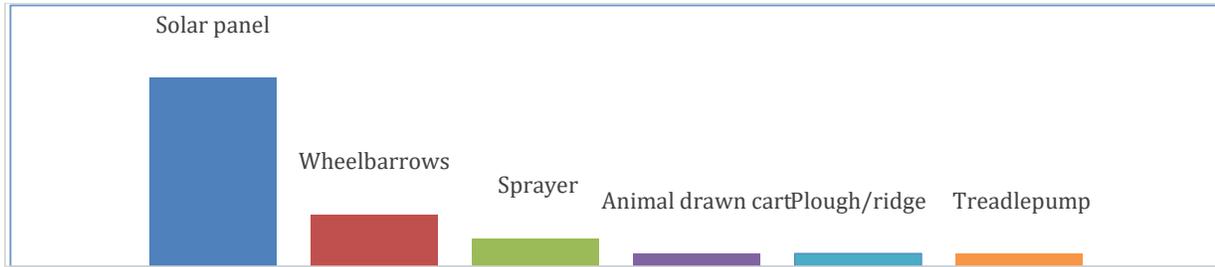
As expected, ownership of mobile phones, television and radios was highest in the urban areas of Blantyre city, Lilongwe city and Mzuzu city unlike bicycles that were more owned by the rural based households (Table 5). Almost all districts have 40 percent or more of the households owning a cell phone except, Balaka (37 %) and Zomba rural (36 %). Ownership of bicycles was highest in the districts of Phalombe (80%), Chikwawa (56 %) and Machinga (51%).

**Table 5: Percentage of households in possession of communication assets by districts**

	Motorcycle	Motor vehicle	Bicycle	Radio	Television	Mobile phone
Karonga	5	0	39	36	10	73
Mzuzu City	2	0	31	50	16	79
Nkhata Bay	6	0	43	52	16	77
Salima	2	0	41	25	6	43
Lilongwe City	1	6	29	49	25	80
Dedza	4	0	30	41	1	44
Ntcheu	2	0	21	22	7	46
Machinga	5	0	51	26	5	50
Balaka	1	0	35	18	4	37
Mangochi	4	0	33	19	5	42
Zomba Rural	5	1	41	37	5	36
Zomba City	4	1	18	52	27	73
Blantyre Rural	1	0	18	29	10	51
Blantyre City	0	7	14	51	51	89
Nsanje	3	0	30	27	2	50
Chikwawa	8	0	56	23	7	atdz46
Phalombe	2	1	80	45	2	42

### 3.1.7 Productive Assets

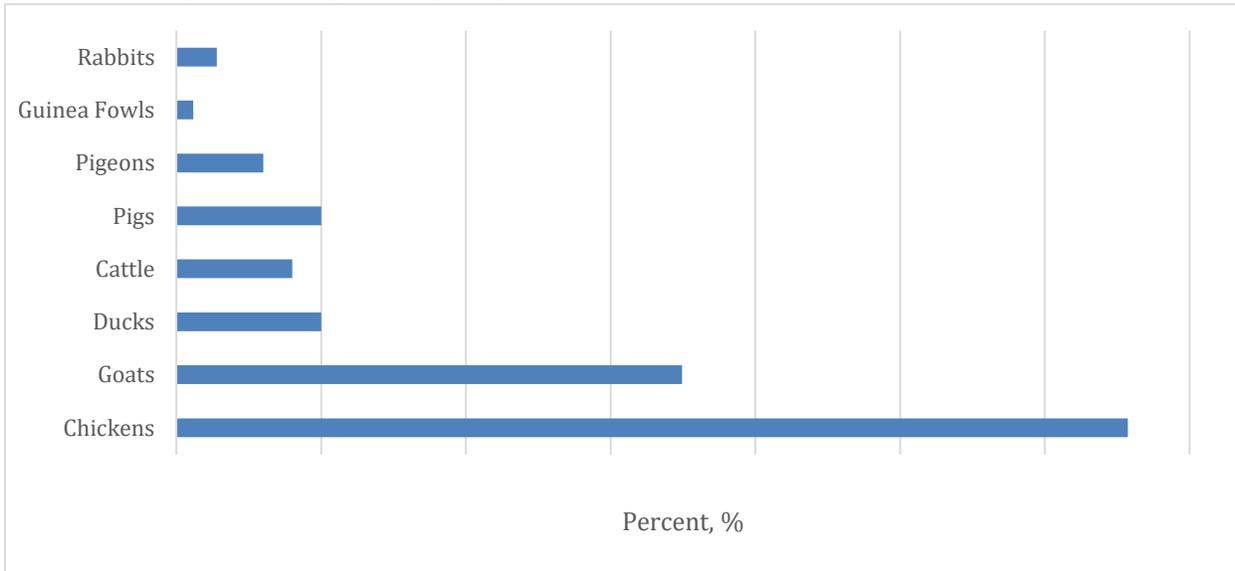
Apart from protecting persons, managing the risk of disasters is also aimed at strengthening the protection of productive assets such as livestock, tools and seeds. The study also looked at ownership of productive assets such as solar panels, wheelbarrows, sprayers and treadle pumps. Ownership of solar panels was reported by 14 percent of households, 4 percent owned wheelbarrows, 2 percent sprayer while one percent a treadle pump (Figure 6). The district level disaggregation is depicted in annex 1. Table 27.



**Figure 7 Percentage of households possessing specific productive assets**

### 3.1.8 Livestock ownership

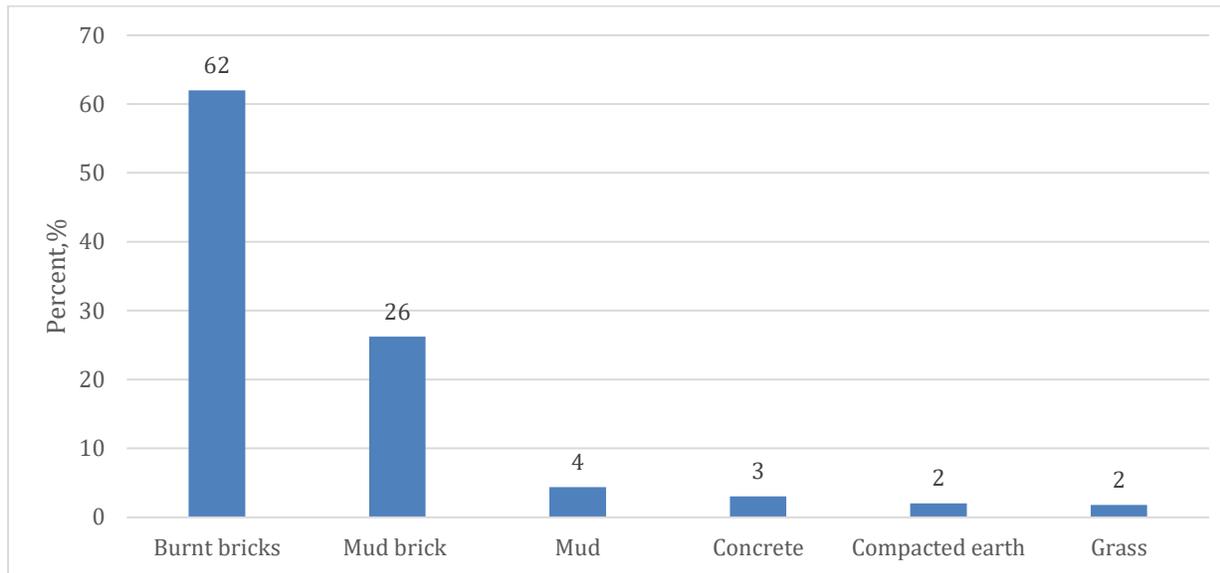
Livestock ownership is an important indicator of the status of wealth in the community. Households owning cattle, goats and pigs are considered to be better off, compared to those owning small stock livestock such as chickens. Chicken is the most common livestock reported at 33 percent, goat ownership is also significant at 17 percent while cattle and pig ownership were at 4 percent and 5 percent, respectively (Figure 7).



**Figure 8: Ownership of livestock amongst the households**

### 3.1.9 Materials for the wall

As noted in the PDNA (2015) report, the immediate consequence of the disaster was damage of houses which left many people without shelter. As such use of impermeable structures for the walls of the dwelling units is key to reduce damage to the houses. About 62 percent households had burnt bricks as materials for the wall, 26 percent had mud bricks while four percent used mud and two percent used compacted earth and grass (Figure 8).



**Figure 9: Materials for the wall used for the main dwelling house**

### 3.1.10 Roofing materials

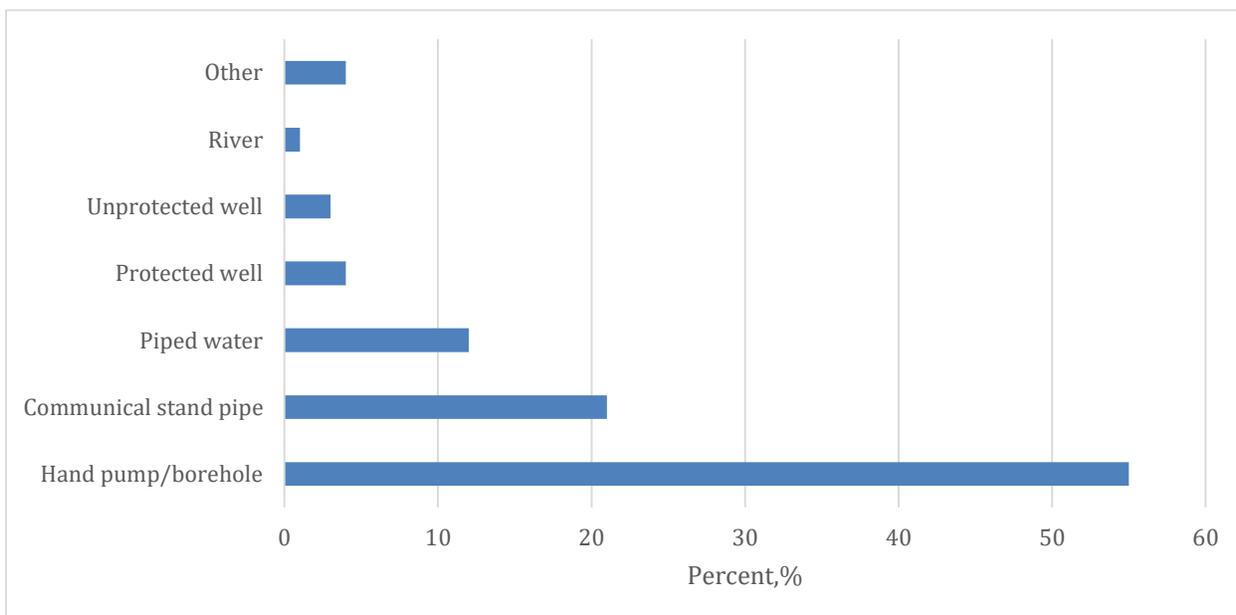
Similar to materials for the wall, roofing remains a key element in ensuring the level of strength of the dwelling units. As shown in Figure 9, 57 percent of the households had iron sheets as roofing materials for the main dwelling units while the remaining 43 percent had grass roofed materials. More male headed households (61 %) had iron sheets as roofing materials compared to female headed households (53 %).



**Figure 10: Roofing materials on the houses of the households**

### 3.1.11 Water sources

Apart from agriculture, disasters such as floods also cause substantial damage to water supply facilities. The risk of transmission of water and sanitation related diseases are very high in times of disasters mostly floods. As such understanding of drinking water sources remains fundamental in water, sanitation, and hygiene interventions. In the sampled areas, the main sources of drinking water included borehole/hand pump at 55 percent while 21 percent use communal stand pipe only 12 percent had piped water outside or inside the homes. The specific districts segregation is portrayed in annex 1, Table 30.

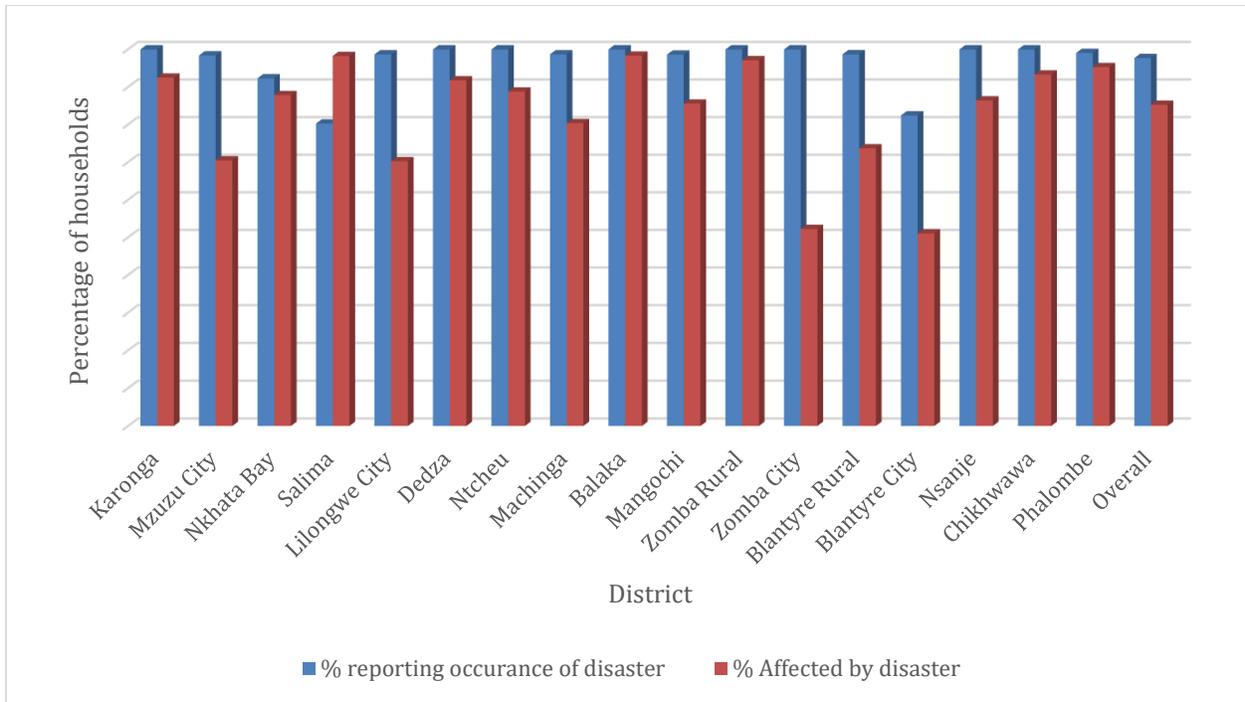


**Figure 11: Water Sources amongst the households**

### **3.2 Hazards and Disaster Occurrence**

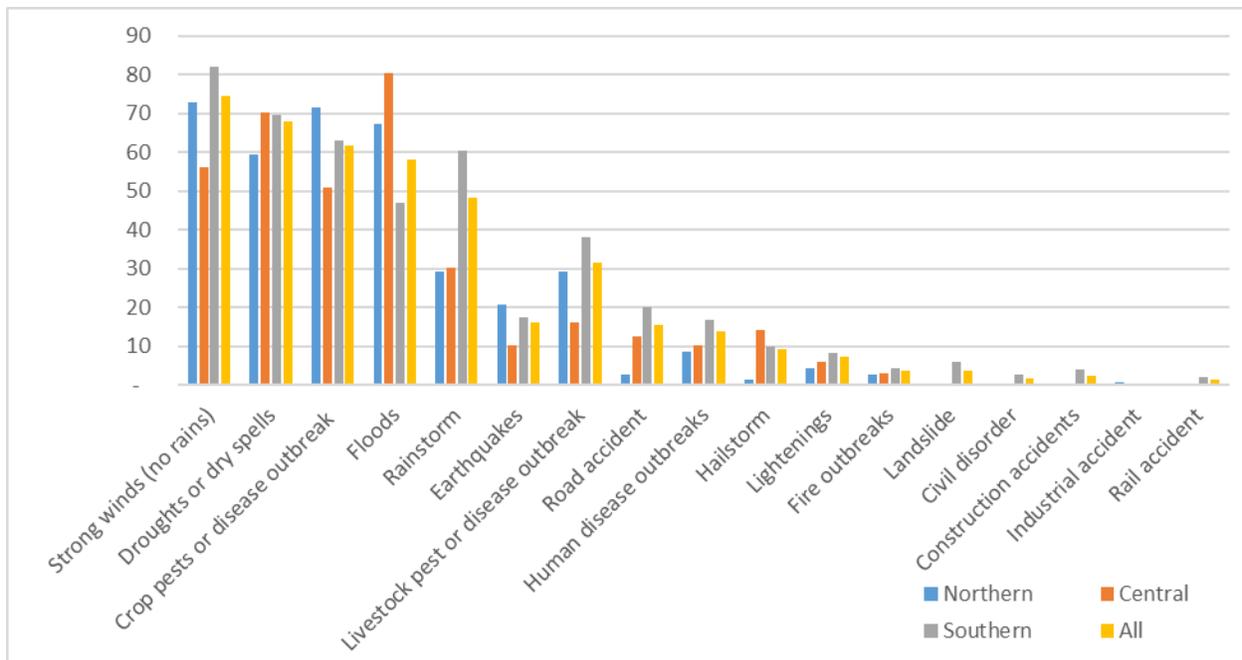
A **natural hazard**<sup>[1]</sup> is a natural phenomenon that might have a negative effect on humans or the environment. Natural hazard events can be classified into two broad categories: geophysical and biological. Geophysical hazards encompass geological and meteorological phenomena such as earthquakes, volcanic eruptions, wildfires, cyclonic storms, floods, droughts, avalanches and landslides. Biological hazards can refer to a diverse array of disease, infection, infestation and invasive species. A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins. The difference between a disaster and a hazard is that the latter is defined as being exposed to an occurrence that can lead to a disaster while the former is when an event that disrupts livelihood occurs. A practical example is that the annual floods in shire valley constitutes a disaster while establishing a settlement within the river valley is a hazard. The study sought to understand the occurrence of hazards and disasters in the last five years in order to understand the most frequent hazards in each of the districts. Occurrences, frequencies and effects of disasters and hazards from the sampled districts were analysed both qualitatively and quantitatively as reported by households and institutions.

The percentages of the households who reported that that disasters occurred for the previous five years ranged from 80 to 100%. The effects of the disasters varied across the districts, the least impact being amongst residents of the cities (Figure 11). This may suggest that household in the cities had readily available disaster mitigation strategies than those in the rural areas.



**Figure 12: Percentage of respondents reporting occurrence of disasters and those that were affected by any disaster in the past five years**

Strong winds (No Rains) was reported by 74 percent of all the sampled households. This however was more of a common disaster in the Northern and Southern Region than in the Central region. Drought and dry spells were the second common disaster that was reported by 68 percent of the sampled households. Higher proportions (70%) of households from Central and Southern Regions reported the drought and dry spells occurrences as affecting their livelihoods. The third disaster reported was outbreaks of crop pests and diseases by 62 percent of the sampled households. This disaster was more pronounced in the Northern Region (71%) than both the Central (51%) and Southern (63%). The major crop pests are fall army worm (FAW) and Red Locust which have been reported across the country and Shire Valley respectively. The fourth major disaster reported by 58 percent of the study population was floods. The Central Region (80%) registered the highest proportion followed by the Northern Region (67%) and Southern Region (47%). The other disasters that have been identified as having occurred in the last five years are shown in the figure below.



**Figure 13** Percentage Distribution of Households by Disaster Occurrence

Analyzing the occurrence of disasters further, it has been observed that Strong Winds with no rains was reported by over half of the study populations from all the districts except Lilongwe City, Salima and Blantyre city. It had the biggest effect on households in Nsanje (97%) and Chikwawa (98%). Drought and dry spells were most prevalent in Balaka and Chikwawa where 99% of the households reported their occurrence. On the other hand, drought/dry spells were reported by less than 30 percent of the sampled households from each of the cities of Blantyre (11%), Lilongwe (20% and Mzuzu (27%) unlike Zomba city which had 58%. The incidences of crop pests and diseases featured prominently in Karonga, Ntcheu, Balaka, Mangochi, Zomba rural, Nsanje, Chikwawa and Phalombe unlike in Blantyre and Lilongwe cities. The majority of these areas where pests and diseases have featured prominently are districts in the rift valley where it is hot and humid.

Floods have become a common disaster of late and now affecting new areas like urban set ups such as the Cities. All the responding households in Nsanje and Lilongwe City reported that floods occurred in the last 5 years in their locations. The occurrence of floods has been mainly being reported in low-lying districts such as Karonga, Nsanje, Chikwawa and Salima. Other districts that are prone to floods are those lying at the foot of major mountains such as Phalombe and Zomba.

Outbreaks of livestock pests and diseases were mainly reported in Balaka, Mangochi, Zomba Rural and Phalombe. The most common disease outbreaks include East Coast Fever for cattle, African Swine Fever for pigs and Newcastle for chickens.

Occurrence of Earthquakes which mostly were reported in Karonga (44%), Nsanje (55%) and then the rest of districts in the Rift Valley. However, most of the incidences are not earthquakes per say but earth tremors.

Road accidents were reported in Ntcheu (35%), Zomba City (28%) and Mangochi (20%). However other districts like Balaka and Machinga also reported occurrence of accidents. The distribution of the reported occurrence follows areas where there is heavy traffic such as M1 road, Cities and tourist attraction areas like Mangochi.

Outbreaks of human diseases were highly reported in Nsanje (26%) and Balaka (26%) followed by Karonga and Mangochi. These districts follow in the great lift vary and the areas are hot and humid. The districts are prone to flooding and this contributes to increased incidences of disease outbreaks such as cholera.

**Table 6 Percentage Distribution of Households that Reported Occurrence of Selected Disasters**

District	Strong winds (no rains)	Drought/ Dry spell	Crop pests or disease outbreak (locusts and army worms)	Floods	Rainstorm	Livestock pest or disease outbreak	Human disease outbreaks	Earth quakes	Road accident
Karonga	65	58	64	70	29	35	25	39	-
Mzuzu City	85	27	21	55	61	8	3	3	-
Nkhata Bay	65	46	41	62	38	12	3	-	1
Salima	41	63	28	75	25	-	1	17	1
Lilongwe City	11	20	13	93	8	16	4	-	3
Dedza	95	82	45	11	34	34	16	14	14
Ntcheu	86	88	71	32	43	38	11	8	35
Machinga	69	72	61	44	59	29	8	5	18
Balaka	91	99	88	48	43	55	26	6	17
Mangochi	84	83	78	52	61	62	22	17	20
Zomba Rural	94	91	80	40	86	58	17	13	9
Zomba City	94	58	51	40	63	28	6	10	28
Blantyre Rural	83	48	52	27	51	32	5	21	17
Blantyre City	42	11	-	25	60	2	5	2	9
Nsanje	97	88	80	80	17	36	26	31	2
Chikhwawa	98	99	88	74	27	25	17	8	1
Phalombe	94	86	82	82	78	56	6	21	9
<b>Overall</b>	<b>79</b>	<b>72</b>	<b>62</b>	<b>54</b>	<b>47</b>	<b>36</b>	<b>13</b>	<b>13</b>	<b>12</b>

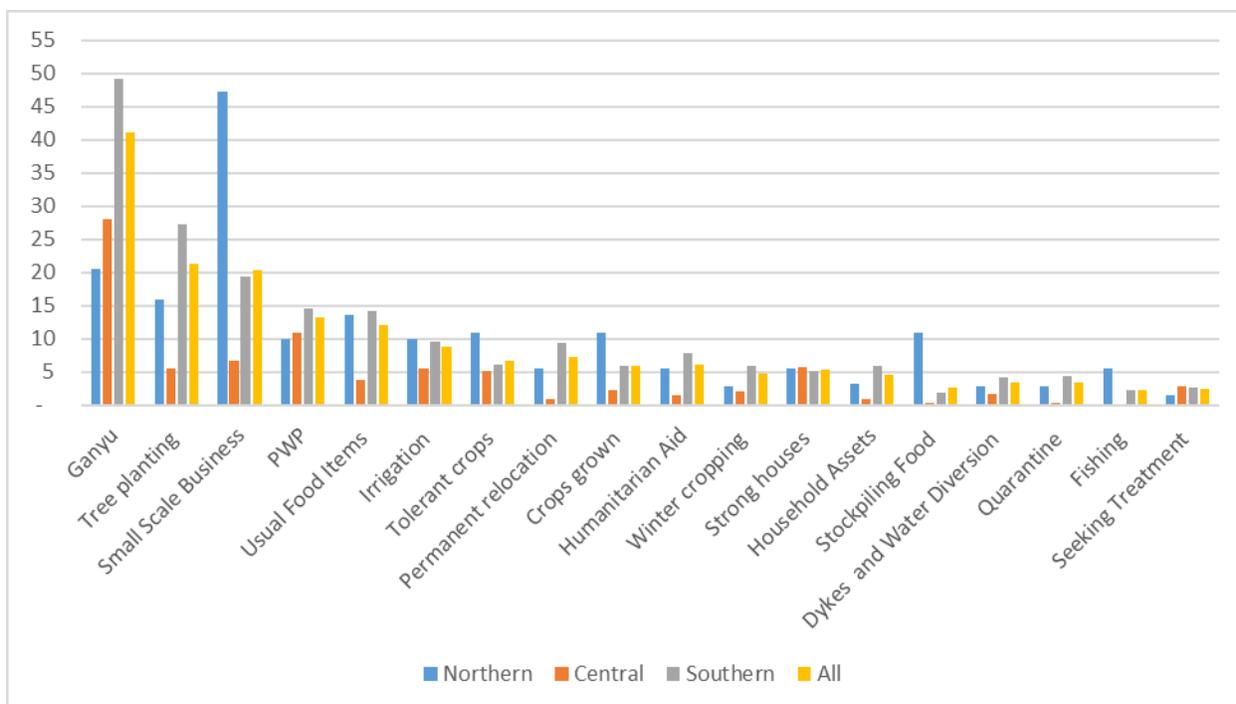
### 3.3 Household Resilience

This section discusses the findings on the household resilience from shocks and disturbances as a result of disasters. Resilience is defined differently by a number of institutions below;

- “The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner”  
United Nations International Strategy for Disaster Reduction
- “The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change” Intergovernmental Panel on Climate Change
- “The capacity of a system to absorb disturbance and reorganize while undergoing change”  
The Resilience Alliance
- “Disaster Resilience is the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses - such as earthquakes, drought or violent conflict - without compromising their long-term prospects.” DFID

In this report, the focus is on household resilience by discussing elements that enhances the capacity in the management of disasters. The ability of the system or process to deal with the shock or stress is based on the levels of exposure, the levels of sensitivity and adaptive capacities. The adaptive capacities of individuals, communities, regions, governments, organizations or institutions – are determined by their ability to adjust to a disturbance, moderate potential damage, take advantage of opportunities and cope with the consequences of a transformation. Adaptive capacities allow actors to anticipate, plan, react to, and learn from shocks or stresses. The report discusses the various factors that show how resilient households are in the disaster-prone areas.

The study findings revealed that Ganyu (casual labour) (41%), Tree Planting (21%) and Small-Scale Business (20%) were the three major measures that households take in order to be resilient to shocks and disturbances. Ganyu as an adaptive measure is highly reported by 50% of the households interviewed in the Southern Region followed by the Central Region (28%) and Northern Region (20%). The Public Works Programme (PWP) was the only safety net programme that contributes to the resilience of the households. In addition to these mechanisms, the other alternatives are shown in the figure 13 below.



**Figure 14** Major Existing Resilience Mechanisms Reported

Casual labour (Ganyu) was the main DRM mechanism reported by 41% of the sampled households. It was reported highly by over 50 percent of sampled households from Balaka, Nsanje, Ntcheu, and Zomba Rural districts. Tree planting was the highest in Zomba City and Chikhwawa (42% each). The small-scale business option has been reported by over half of the sampled households from Karonga and Mzuzu City. The Ganyu and Small-Scale Business comparison shows that where Small Scale Business is high the Ganyu has lower proportions. PWP as a safety net intervention was reported by 29 percent of households from Chikhwawa while Zomba City had 27%.

**Table 7** Percentage Distribution of Households by disaster risk management measures

Region	District	Ganyu	Tree planting	Small scale business	Public works
North	Karonga	15	31	58	14
	Mzuzu City	26	8	60	11
	Nkhata Bay	22	7	30	6
Centre	Salima	-	-	-	-
	Lilongwe City	1	3	8	4
	Dedza	30	12	11	16
	Ntcheu	56	10	11	15
South	Machinga	31	15	12	7
	Balaka	78	15	33	21
	Mangochi	51	19	23	11
	Zomba Rural	56	36	23	16

	Zomba City	46	42	28	27
	Blantyre Rural	41	26	24	2
	Blantyre City	-	-	-	-
	Nsanje	67	39	11	23
	Chikhwawa	48	42	10	29
	Phalombe	47	40	21	7
<b>Overall</b>		<b>41</b>	<b>21</b>	<b>20</b>	<b>13</b>

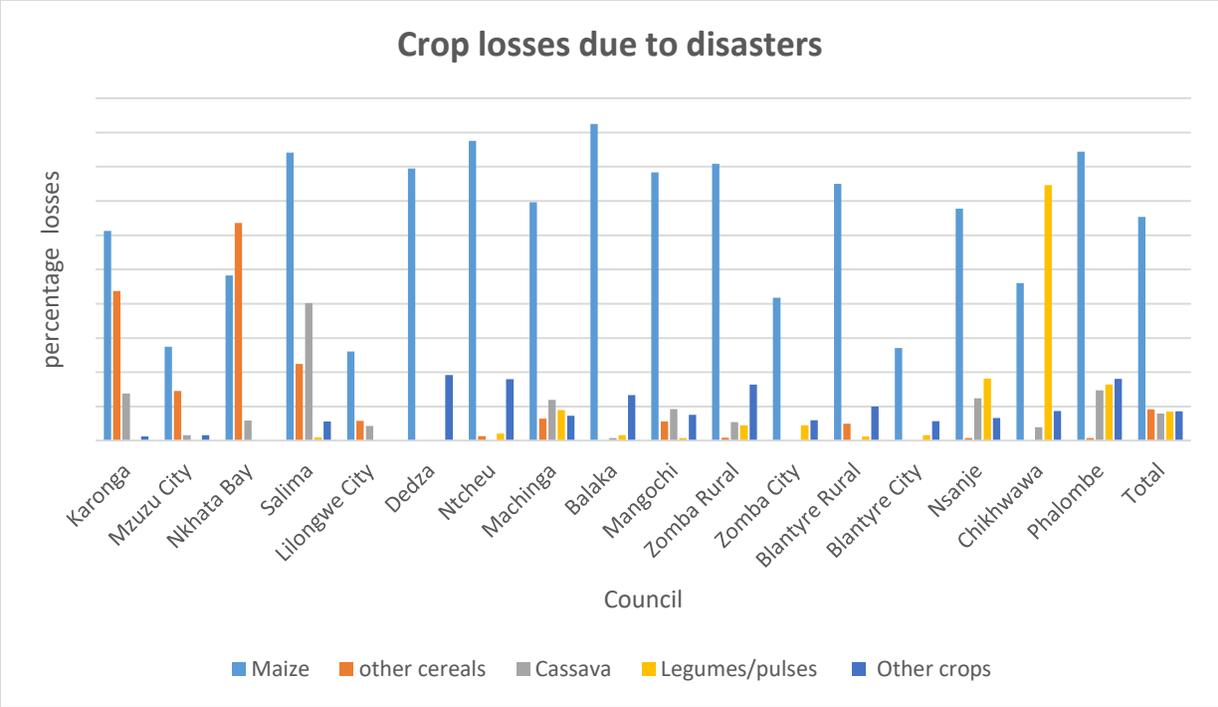
### **3.4 Livelihoods loss from agriculture.**

This section tries to understand if the households lost any of agricultural investment, productive assets and other livelihood as a result of the disasters in their respective areas. Losses in this context were viewed as crop, livestock, productive assets and any other sources of livelihood. The losses comprised the change of flow of goods and services and other economic flows such as increased expenses, curtailed production and diminished revenue, which arise from the damage to production capacity and social and economic infrastructure in the communities as well as the country as whole. Since Malawi, is Agro based economy the damage to the agriculture sector includes losses in production to crops planted; washed away animals; partially or fully destroyed irrigation infrastructure, livestock and fisheries, infrastructure and other assets.

#### ***3.4.1 Agricultural investment losses***

##### ***3.4.1.1 Crop losses***

Not all disaster can lead to crops losses but there are some factors like can post harvest handling pest and diseases and just mention a few. The baseline study analyzed crop losses which emanates from disasters from the sampled districts.

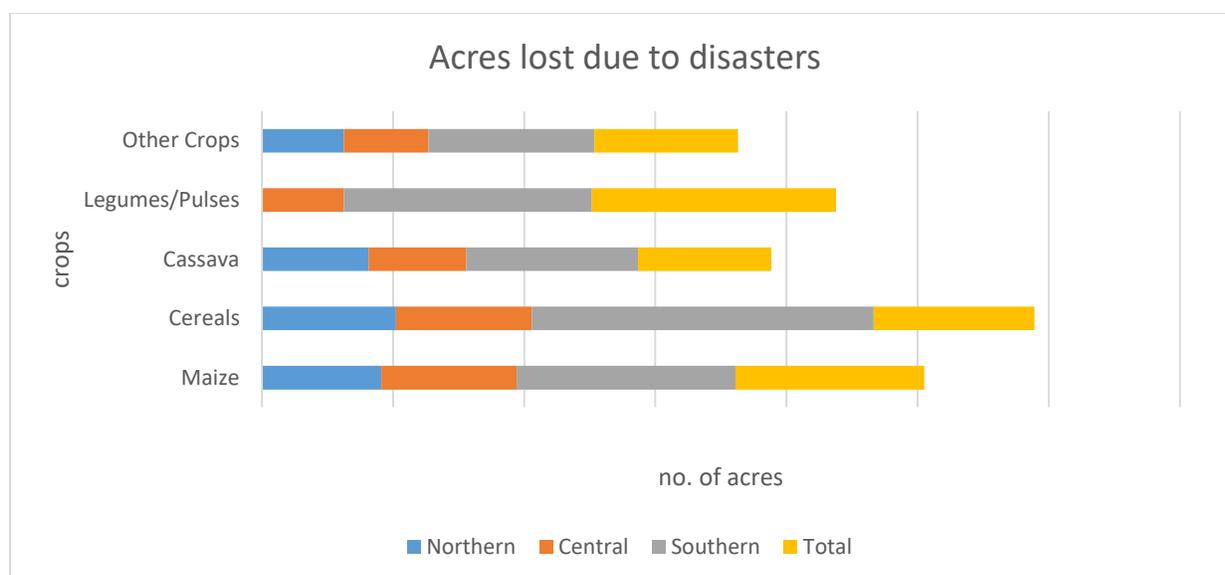


**Figure 15** Percentage of respondents reporting that they lost crops due to disasters

As presented by the figure 14 above, the majority of the sampled households (65%) where the baseline was conducted has revealed that maize was severe affected and followed by other crops and cereals (18%), legumes/ pulses ((8%) and cassava (8%) in the past five years. If disaggregated by gender, female headed household’s registered higher loss (67%) compared to male counterparts (64%). The study also revealed that Balaka was worst hit by disasters (93%) particularly maize losses and followed by Ntcheu (88%), Salima and Phalombe (84%) respectively, Zomba Rural (81%) and the least were recorded in Blantyre City (27%) and Lilongwe city (26%). For food security analysis in Malawi, it is essential to go beyond the aggregate loss figures and focus on the impact of those crops most important for household food security and for the case of Malawi its maize. This implies that those districts that were hit hard by the disasters they have been food insecure over the years.

**Disaggregating Crop losses by Region**

The respondents were as also asked to estimate the size of the acres lost due to disasters for the different crops as well as crop groups as presented in figure 15.



**Figure 16: Acres lost per crop due to disasters across the three regions**

As described in the figure 15, the respondents revealed that a total of 1.44 Acres of maize and 1.86 acres of legumes/ pulse were lost per household in the previous five years. The study revealed that southern region registered highest loss for maize (1.67 acres) and legumes/ pulses (1.89 acres) respectively and least being registered in the Northern region (maize, 0.9 acres), legumes/pulses 0.63 acres). From the study findings Ntcheu district recorded high loss in acres (2.9) and Karonga recorded the least (0.8). In terms of disaggregation by gender across all the sampled councils that were assessed, the study indicated that female households registered higher average loss of 2.2 acres of legumes/pulses and 1.7 acres of maize compare to male counterpart (legumes/pulses, 1.5 acres, maize, 1.2 acres).

### Crop losses assessment based on institution data

The study sought to understand the agricultural investment losses incurred at district level. Blantyre and Nsanje are the only districts that provided data. A total of 764,159 ha of planted land was reported to have been lost during the last five years.

**Table 8** Agricultural investment losses in monetary terms (Crops in hectares)

Type of Disaster	Maize	Legumes	Rice	Sorghum	Cassava	Pulses	Other tubers	Total
Drought or dry spells	148,482	25,423	6,234	21,59	6,417	13,074	9,622	230,842
Floods	60,566	13,803	58,379	27,02	24	19,255	1116	204,139
Rainstorm	15,01	10,5	0	1,215	800	2,56	0	30,085

Crop pests or diseases outbreak	20,4274	47,762	13928	418	15,331	1,88	15,5	299,093
<b>Total</b>	<b>428,332</b>	<b>97,488</b>	<b>78,541</b>	<b>50,243</b>	<b>46,548</b>	<b>36,769</b>	<b>26,238</b>	<b>764,159</b>

### 3.4.1.2 Livestock losses

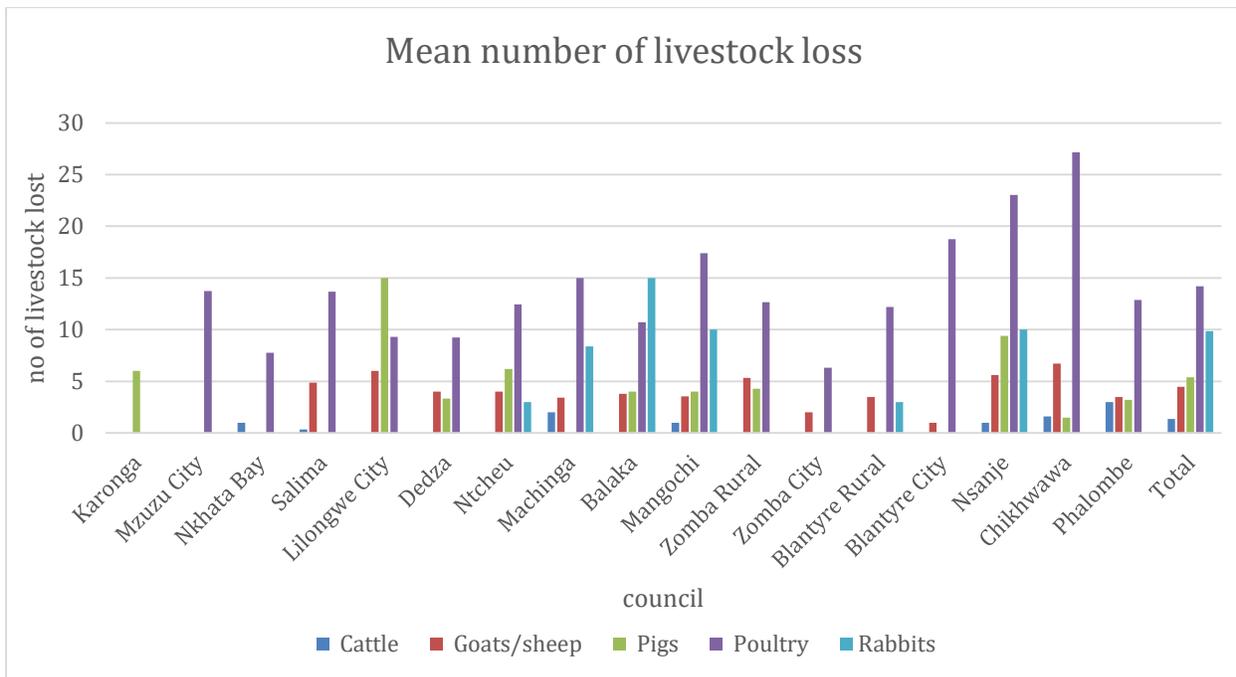
Livestock is considered critical for poor households. With very limited access to banks and other financial services, livestock are considered a ‘living bank’ by rural poor households. Sales from livestock can be used to meet costs for such needs as paying school fees, paying hospital bills including meeting funeral costs. The baseline sought to find out if the households lost any livestock as a result of the disasters in the last 5 years as indicated in the Table 8.

**Table 9: Percentage of households reporting loss of livestock due to disaster**

Disaggregation category		Cattle	Goats/sheep	Pigs	Poultry	Rabbits
Sex of head	Male	1	8	2	19	
	Female		5	2	19	1
Name of the council	Karonga	0	0	1	0	0
	Mzuzu City	0	0	0	6	0
	Nkhata Bay	1	0	0	8	0
	Salima	3	21	0	17	0
	Lilongwe City	0	1	1	12	0
	Dedza	0	8	4	18	0
	Ntcheu	0	8	3	19	1
	Machinga	1	6	0	15	3
	Balaka	0	4	1	43	1
	Mangochi		5		34	
	Zomba Rural	0	8	6	37	0
	Zomba City	0	1	0	13	0
	Blantyre Rural	0	5	0	14	1
	Blantyre City	0	1	0	7	0
	Nsanje	1	17	4	21	1
	Chikhwawa	4	6	2	6	0
Phalombe	1	7	7	32	0	
<b>Total</b>		<b>1</b>	<b>6</b>	<b>2</b>	<b>19</b>	<b>1</b>

In Table 8 above, the study revealed that majority of respondents in Balaka (43%), indicated that they lost their livestock herd particularly poultry, followed by Zomba Rural (37%) and Karonga recorded the least. The study also revealed that there was also higher loss of goats recorded in

Salima (21%), Nsanje (17%) and Ntcheu and Zomba rural (8%). The lowest loss was recorded in Karonga.

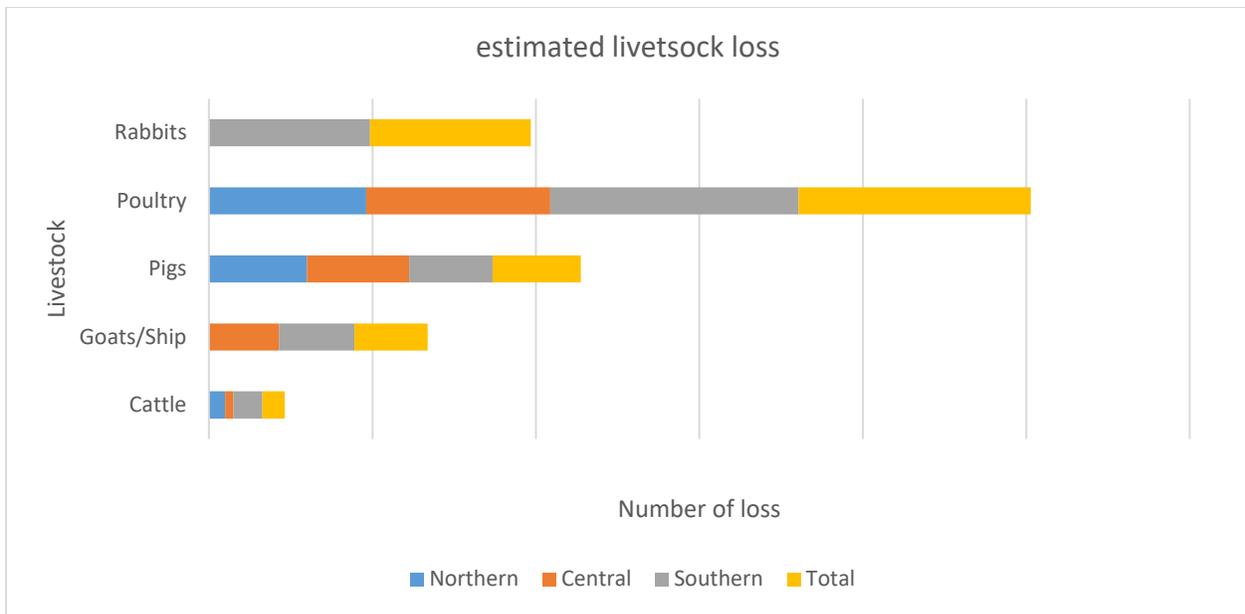


**Figure 17 Mean number of livestock loss**

As presented by the figure 16 above, the study has revealed that most respondents across all sampled councils assessed indicated that poultry registered higher average loss of 27 (Chikhwawa) and followed by Nsanje (23), Blantyre city (19) due to disasters which have been occurred in the past five years.

**Disaggregating Livestock losses by Region**

The baseline also inquired from respondents to estimate the livestock heads or livestock groups lost due to disasters over the past five years in the sampled local councils.



**Figure 18: Estimated number of livestock lost due to disaster**

As presented in the figure 17 above, respondents revealed that an estimated total average of 14 (Poultry) were lost followed by rabbits 10, pigs 5, goats 4 and cattle being the least. Southern region recorded the highest loss 15 and least recorded in the Northern region. In terms disaggregation by gender across all the councils which were assessed, the results also revealed that both male and female experienced the same an average loss of 19 poultry and followed by Goats (male, 8 and female, 5) and northern region recorded the lowest.

### Livestock Investment Loses based on Institutional assessment

In terms of livestock loses, 404,729 heads were reported to have been lost due to different disasters in Machinga, Nsanje and Mangochi in the last five years. The biggest losses were heads of chickens (57%) followed by goats and sheep (22%). Other livestock that lost were cattle (3%), and pigs (7%) and others (10%).

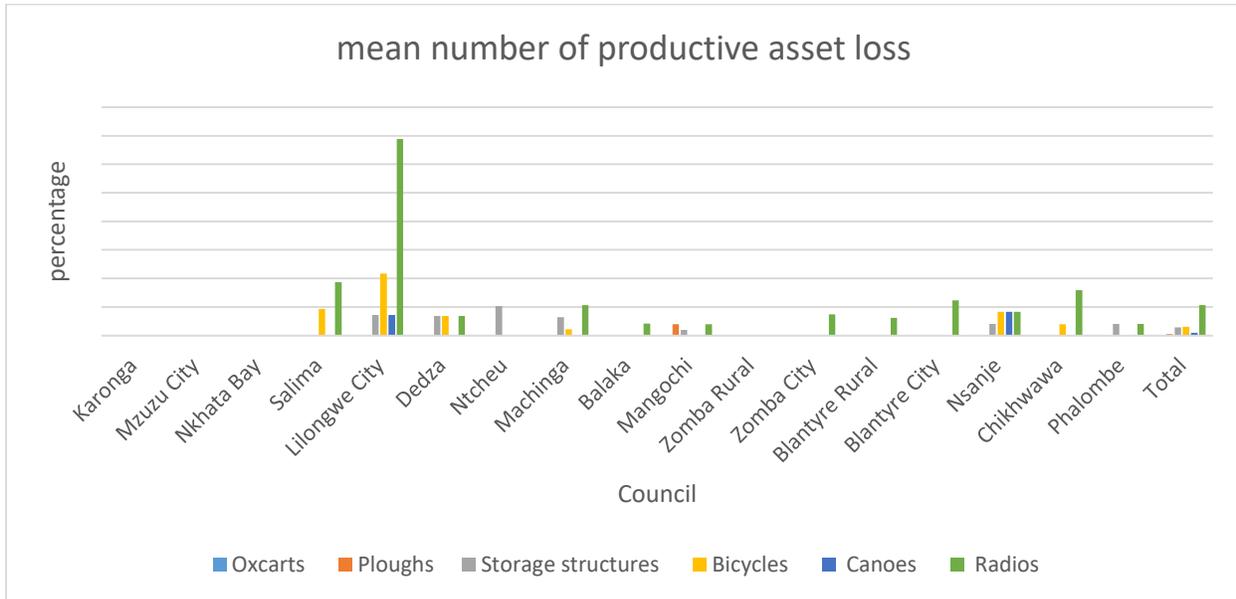
The disasters that claimed the most livestock were floods (70% of heads), livestock pest/ disease outbreak (19%), drought or dry spells (8%), and hailstorm (3%).

**Table 10: Agriculture investment losses (Livestock)**

Type of Disaster	Cattle	Goats/ Sheep	Pigs	Chicken	Others	Total
Drought or dry spells	6,791	19,565	7,282	0	0	33,638
Floods	5,699	43,715	18,247	183,200	33,051	283,912
Fire outbreaks	0	730	4	10,809	95	11,638
Hailstorm	72	84	36	132	51	375
Livestock pest/ disease outbreak	625	26,321	1,846	38,214	8,160	75,166
<b>Total</b>	<b>13,187</b>	<b>90,415</b>	<b>27,415</b>	<b>232,355</b>	<b>41,357</b>	<b>404,729</b>

### 3.4.2 Productive assets losses

Productive assets are an important proxy for measuring household resilience when disasters strike in Malawi. Households that own assets such as oxcart, bicycle, livestock, radio, television among others are more likely to be resilient to effects of disasters and climate change than those without. Assets can provide a fallback mechanism in case of loss of income, life cycle events such as funerals, during food insecurity and other related disasters. The baseline study sought to understand if the households had lost their productive assets as a result disaster in the last 5 years in the sampled councils as indicted in figure 18 below.



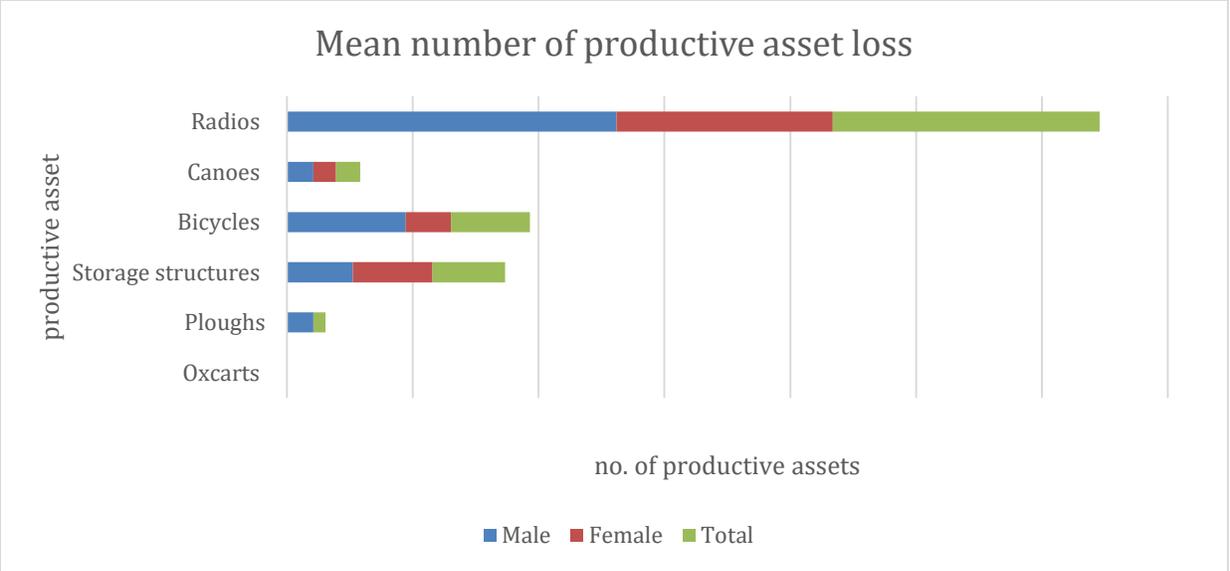
**Figure 19: Percentage of households who lost productive assets due to disasters**

As presented in analysis in the figure 18, the baseline study revealed that Lilongwe city<sup>1</sup> indicated high losses for productive assets which include radios (14%), bicycles (4%) and other losses of productive assets were also registered in Salima, Chikwawa, Blantyre and Nsanje. The study also revealed that storage structures and oxcarts/ploughs recorded the least in terms of losses in the sampled districts.

#### Disaggregating Productive Asset losses by Gender

The respondents were as also asked to estimate the productive assets lost due to disasters as indicated in figure 19 below.

<sup>1</sup> The areas which productive assets were highly affected include: Area 47, high density townships of Ntandire, Tsiliza, Mchesi and Biwi and this result agree with previous assessments of 2015 PDNA report.



**Figure 20: Average number of productive assets lost due to disasters by sex of head**

As depicted in the figure 19 above, respondents of sampled population revealed that an estimated average of two radios per district were lost due to damages by disasters and followed by the bicycles with an average of 1. If disaggregated by gender more productive assets loss were incurred by female headed households compared to male counterparts. This is so because males have more adaptive capacity compared to females headed households.

**3.4.3 Other livelihood losses**

Most of the vulnerable groups rely on piece work, small scale income generating activities and remittances. Nonetheless, women, youth and disadvantaged people who engage in small scale income generating activities have also been negatively affected in the past due to damages caused by disasters and such that the savings from previous loans and capital for their businesses have been used up for food and other basic needs. In addition, the Village Savings and Loans and other economic empowerment structures are no longer operating effectively because many of the members are not able to buy shares and repay their loans due to the previous related disaster shocks. The baseline study sought to find out if the households had lost other livelihood sources in the past 5 years as a result of the disasters as presented in Table 10.

**Table 11: Households who reported losing other livelihood assets due to disaster**

Name of the Council	Forest loss	Lost small businesses/trading opportunities	Fishing loss
Karonga	0	0	0
Mzuzu City	0	3	0
Nkhata Bay	0	0	0
Salima	1	2	4
Lilongwe City	0	3	4
Dedza	0	1	0
Ntcheu	1	1	0
Machinga	4	1	1
Balaka	2	1	1
Mangochi	0	2	0
Zomba Rural	0	3	0
Zomba City	0	3	0
Blantyre Rural	0	4	1
Blantyre City	0	7	0
Nsanje	0	2	2
Chikhwawa	0	0	0
Phalombe	0	5	0
Total	1	2	1

As presented in the table 10, the baseline study revealed Blantyre city recorded an average high loss in small business and trade opportunities of 7 , followed by Blantyre Rural (4), Zomba city and rural and , Lilongwe city (3) and among others. The study also revealed that there were losses in fishing activities in Lilongwe city (4), Salima (4) and forest activities losses were highly recorded in Machinga (4), Balaka (2) and Ntcheu

#### **3.4.4 Monetary Losses**

The respondents of the baseline study were also asked to estimate how much in monetary terms did they lose from fishing activities, small business/ trading opportunities and Forestry resource as presented in the figure 11.

**Table 12: Loss in monetary terms**

	Forestry (MK)	Small business/trading opportunities (MK)	Fishing (MK)
Male	38,334	90,296	114,683
Female	95,000	93,737	76,625
Karonga			
Mzuzu City		22,500	
Nkhata Bay			

Salima	15,000	20,000	5,300
Lilongwe City	5,001	250,000	100,000
Dedza		150,000	
Ntcheu	100,000	51,250	
Machinga	55,000	23,333	260,000
Balaka	225,000	35,000	5,000
Mangochi		21,333	
Zomba Rural		24,000	
Zomba City		12,500	
Blantyre Rural		240,000	5,000
Blantyre City		113,625	
Nsanje		233,500	25,750
Chikhwawa			
Phalombe		37,000	
<b>Total</b>	<b>66,667</b>	<b>91,717</b>	<b>77,503</b>

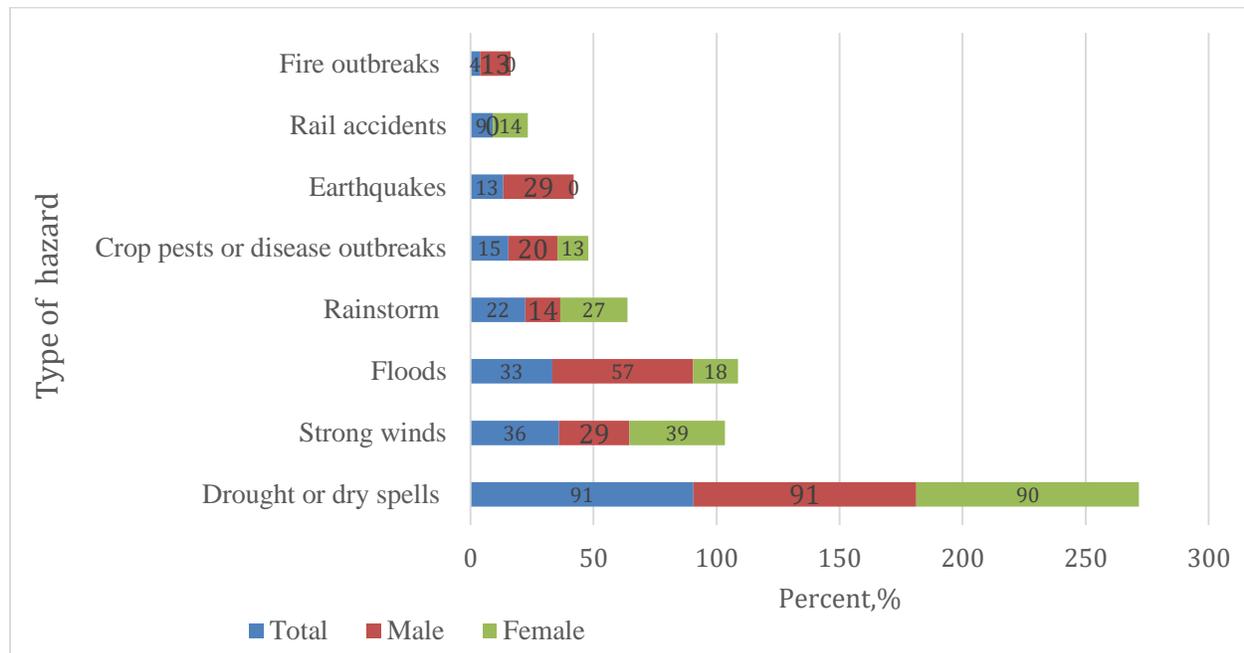
As depicted in the figure 11 above, the study results revealed that small business/trading opportunity incurred high losses with an estimated average per household of MK91, 1717, followed by fishing activities (MK77, 503) and forestry (MK 66,667). The high losses were much registered in the southern region and northern region being the least. If disaggregated by gender, male headed household registered higher losses compared to female headed households.

### 3.5 Vulnerability to disasters

The baseline study sought to understand if the households considered themselves to be vulnerable from an impact of a natural or man-made disaster. Vulnerability was looked at as lack of capacity of the household to cope with or resist the impact of a hazard. An understanding of the vulnerability levels is key in the development of contingency planning so as to ensure adequate arrangements are made in anticipation of a crisis. The list of hazards included drought, floods, rainstorms, pests, diseases, earthquakes and fire outbreaks.

Figure 20 below shows that households are most vulnerable to drought or dry spells (91 %) seconded by strong winds (36 %) then floods (33 %). Both male and female headed households considered the vulnerability to droughts or dry spells in equal measure. The findings on droughts

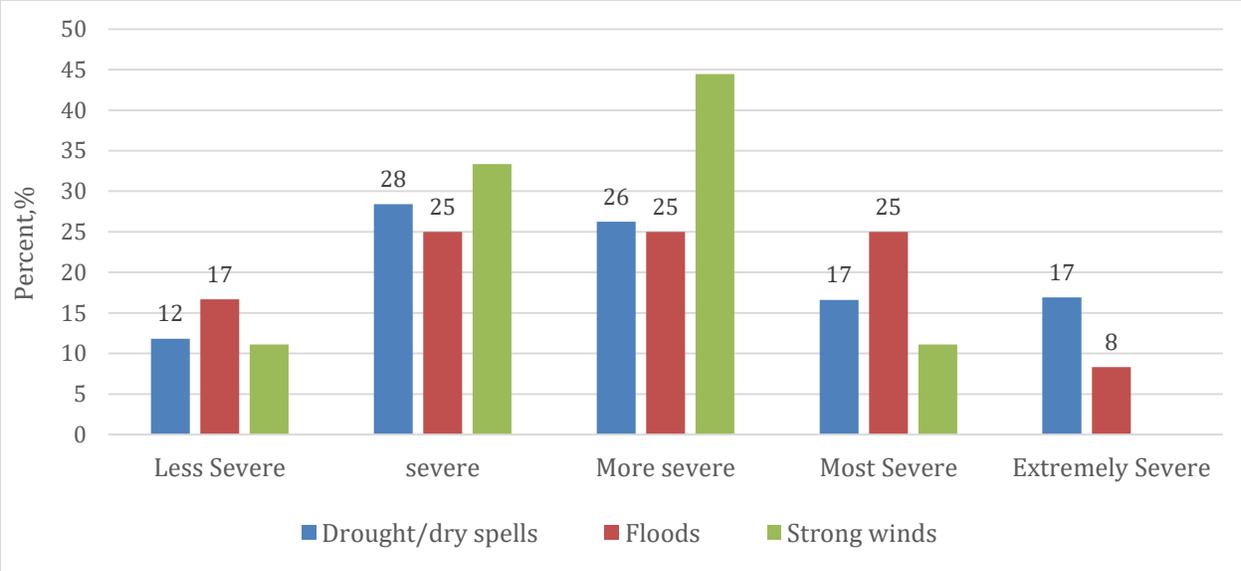
and floods are consistent with the World Bank<sup>2</sup> report that notes that the country experienced six major droughts and twenty floods events over the past 15 years, with their frequency and intensity increasing over time. The details at the district level are depicted in Annex 1, Table 31.



**Figure 21: Whether households consider to be vulnerable to the different types of hazards.**

The baseline study sought to understand the level of vulnerability severity to different hazards. The study found that 17 percent of the households reported to be extremely vulnerable to droughts/dry spells while 8 percent were extremely vulnerable to floods.

<sup>2</sup> Hard hit by El Niño: Experiences, Responses, and Options for Malawi, World Bank Group



**Figure 22: Level of vulnerability severity**

Physical, economic, social and political factors determine people’s level of vulnerability and the extent of their capacity to resist, cope with and recover from hazards.

**3.5.1 Factors that make households vulnerable to shocks**

Household exposure to hazards depends on physical, economic, social and political factors. As such any mitigation measures need to take into consideration the different forms of vulnerability. The study asked households the key factors that make them particularly vulnerable to the different hazards they are exposed. Almost 70 percent mentioned poverty, more among the female headed households and those from Salima (93%), Ntcheu (90%), Balaka (88%), Mangochi (87%) and Dedza (86%) districts (Table 12). Poverty remains a key factor to vulnerability as poor people are likely to live in areas exposed to potential hazards and have less resources to cope when a disaster strikes.

Location in high risk areas was reported by 54 percent as a key factor that make households to be vulnerable to different hazards, with high proportions in the districts of Nsanje (87 %), Chikwawa (78 %) and Mzuzu city (77 %). Lastly, 33 percent mention lack of knowledge, 9 percent mentioned age while three percent mention chronic illness or disability as factors that make them vulnerability to hazards.

**Table 13 Factors that make households vulnerable to hazards (%)**

Category		Poverty	Location in high risk areas	Lack of knowledge	Age	Chronic illness	Disability
Sex of Head	Male	63	57	31	9	2	3
	Female	73	51	35	16	4	3
District	Karonga	60	70	24	16	3	4
	Mzuzu City	31	77	10	10	2	0
	Nkhata Bay	58	55	20	11	0	5
	Salima	93	67	43	16	6	8
	Lilongwe City	44	52	21	2	2	0
	Dedza	86	31	58	25	8	0
	Ntcheu	90	37	58	23	4	0
	Machinga	72	44	44	9	3	0
	Balaka	88	38	57	21	3	0
	Mangochi	87	40	35	9	3	0
	Zomba Rural	76	53	27	15	5	0
	Zomba City	33	28	8	11	2	0
	Blantyre Rural	66	54	30	16	1	0
	Blantyre City	50	52	15	5	0	0
	Nsanje	60	87	36	16	3	0
	Chikhwawa	51	78	33	13	3	0
Phalombe	81	68	30	14	3	0	
<b>Total</b>		<b>68</b>	<b>54</b>	<b>33</b>	<b>13</b>	<b>3</b>	<b>3</b>

### 3.5.2 Deaths due to disaster

Data for deaths due to disaster was collected through an Institutional questionnaire. The data reported only by 35 percent of the districts (Karonga, Blantyre City, Lilongwe, Machinga, Mangochi and Dedza).

The six districts in total reported 858 deaths due to disasters in the last five years. As Table 13 shows, out of these deaths, there were 832 deaths due to floods, one death due to strong winds, 10 deaths due to human disease outbreaks, and five deaths due road accidents. The data has been further disaggregated further into gender, and vulnerability due to age and disability. There were 135 reported deaths for people that were aged 65 and above. All these deaths were for flood victims. In addition, four people aged 65 and above are reported to have died during rainstorm disasters. There were also 68 disabled persons (21 males and 47 females) that died due to flood disasters. Other deaths were recorded in strong winds (1), and human disease outbreaks (10). There were also five deaths (2 males and 3 females) that were reported to have died in road accidents.

However, it is noted that this data is underreported. This is especially the case as only Karonga, Blantyre, Lilongwe, Machinga, Mangochi and Dedza were able to report some data. Even in the districts that reported, it was noted that the data is incomplete. Other deaths (16) were reported in livestock after pest/ disease outbreaks.

**Table 14** Number of deaths due to disaster

Type of Disaster	Gender			Age Group			Disability		Total
	M	F	Total	<17	18-65	65>	M	F	
Floods	599	233	832	156	541	135	21	47	68
Strong winds (no rains)	0	1	1	1	0	0	0	0	0
Rainstorm	2	2	0	0	0	4	0	0	0
Human disease outbreak	10	0	10	0	10	0	0	0	0
Road accident	2	3	5	0	5	0	0	0	0

### 3.5.3 Missing due to disasters (expand)

In the aftermath of disasters, the people that are not evacuated or those that do not move out of the disaster zone in time will either die, get injured or go missing. In this study, the district institutions reported that two people were missing after floods in Mangochi. They were both male and were aged between 18 and 65 years. The other 16 districts did not provide data on missing people.

### 3.5.4 Injuries due to disasters

Only Mangochi, Dedza and Machinga reported data on injuries due to disasters. As Table 14 shows in total there were 1,044 reported injured persons due to disasters in the last five years. Out of these 602 persons were male and 256 were females that were injured due to floods, and 45 males and 65 females that were injured due to strong winds. There were 133 persons aged 65 and above that reported injured due to floods. In addition, there were two disabled males and four disabled females that got injured when floods struck. Further, 110 persons got injured when strong winds struck, of which 65 were women and 20 were disabled (6 males and 14 females). Injured persons due to hailstorm disaster were 35 and there no disabled persons.

**Table 15** Injuries due to disasters

Type of Disaster	Gender		Age Group			Total	Disability		
	M	F	0-17	18-65	65>		M	F	Total
<b>Floods</b>	602	256	168	577	133	<b>878</b>	2	4	<b>6</b>
<b>Strong winds</b>	45	65	4	106	0	<b>110</b>	6	14	<b>20</b>
<b>Hailstorm</b>	0	0	0	35	0	<b>35</b>	0	0	<b>0</b>

### 3.5.5 Damaged Houses due to Disasters

The study sought to understand the extent of damage caused by different disasters. As indicated in Table 15 most of the houses were damaged by strong winds (62%) followed by floods (28%).

Other disasters that destroyed houses are hailstorms (5%), rainstorm (4%) and fire outbreaks (2%). Most of the houses that were completely destroyed were due to floods (66%) and strong winds (29%).

**Table 16** Damaged houses due to disasters

Type of Disaster	Number of Houses	%	Magnitude of Damage		
			Developed Cracks	Partly Damaged	Completely Damaged
Floods	7,122	28	310 (76%)	235 (3%)	5,434 (66%)
Fire outbreaks	400	2	0	0	400 (5%)
Strong winds (no rains)	15,851	62	100 (24%)	8,150 (97%)	2,400 (29%)
Rainstorm	944	4	0	0	0
Hailstorm	1,341	5	0	0	0

### 3.5.6 Disaster Evacuation

The study sought to understand the pattern of evacuation at disaggregated by district. Data was collected from both households and the institutional data was collected from the DC's office. The household survey data shows that an overall of 13 percent of the households reporting having been evacuated in the past 5 years, due to disasters. This was observed in households of all the districts in this study except for Nkhata Bay and Dedza which reported no evacuation. The survey also revealed that schools were the most popular place of evacuation at 67 percent followed by tents or camps at 17 percent and churches at 4 percent (Table 16).

**Table 17** Whether the household was evacuated in the last five years and place of evacuation

Category		Evacuated	Place of evacuation			
			School	Church	Tents/Camp	Others
Sex of household	Male	12	63	4	23	9
	Female	14	68	3	17	12
District	Karonga	18	64	0	36	0
	Mzuzu City	3	0	0	0	100
	Nkhata Bay	0	0	0	0	0
	Salima	60	88	0	11	2
	Lilongwe City	20	57	14	21	7
	Dedza	0	0	0	0	0
	Ntcheu	2	0	0	0	100
	Machinga	9	85	10	0	5
	Balaka	8	44	0	11	44
	Mangochi	18	89	0	2	9
	Zomba Rural	17	63	11	11	16
	Zomba City	1	100	0	0	0
	Blantyre Rural	5	25	0	0	75
Blantyre City	3	0	0	0	100	

	Nsanje	21	24	0	76	0
	Chikhwawa	9	9	9	82	0
	Phalombe	22	78	4	11	7
<b>Overall</b>		<b>13</b>	<b>67</b>	<b>4</b>	<b>19</b>	<b>11</b>

The institutional data from the DC's office revealed that flood disasters were the only reported disaster that warranted evacuation. The reporting districts were Karonga, Lilongwe, Mangochi and Machinga. According to institutional data reported at national level, a total of 82, 575 persons were evacuated in the last five years. The most common evacuation points were schools, followed by tents/ camps. The most common challenges that were experienced during evacuation were lack of transport and lack of capacity (in Karonga, Lilongwe, Mangochi and Mangochi). Another reported challenge is lack of evacuation centers (in Lilongwe and Machinga).

### 3.5.7 Displaced Victims

Data for displaced victims were reported only by Nsanje and Dedza. It was reported that 80,000 persons and 150 families were displaced in Nsanje and Dedza, respectively.

### 3.5.8 Infrastructure Damages

The study also sought to understand damages caused by disasters on Public Infrastructure. This was done through the KII with institutions based at the district level. Public infrastructure damages as a result of disasters in the last five years were recorded from Karonga and Blantyre only. The two districts reported number of times infrastructure was damaged. Blantyre has only reported damage of education facilities through civil disorder. In Karonga, education facilities are reported to have been damaged once. Road network infrastructure got damaged six times by floods, once each by rainstorms and civil disorder. Power supply infrastructure were damaged by floods five times. Strong winds damaged education facilities once. Health facilities, water supply infrastructure and sewage infrastructure were not reported to have been damaged in the last five years. In addition, no construction accident disasters were reported.

**Table 18** Number of times public infrastructure got damaged

Type of Disaster	Health facilities	Education facilities	Road networks	Power supply	Sewage	Water Supply
Floods			6	5		
Strong Winds		1				
Rainstorm			1			
Civil disorder		1	1			

## 3.6 DRM Institutions, Strategies and Knowledge

The analysis of disaster risk management (DRM) institutions, strategies and knowledge was based on the qualitative data collected from the study districts. This analysis included mainstreaming of

DRM, decentralization through information centre, early warning systems (EWS), Preparedness and Response, DRM Programs implemented at district level and funding of DRM programs.

### ***3.6.1 Mainstreaming of DRM***

Blantyre City, Lilongwe City, Mzuzu City, Karonga, Dedza, Mangochi and Machinga provided data that has been reported in this section. All respondents except the DRM officer for Mangochi indicated that the districts had guiding frameworks for mainstreaming DRM strategies. These frameworks had been designed in multiple ways. For instance, in Dedza the framework “*incorporated mitigation measures from the DRM policy into their [district] strategy*”. The local strategies complemented the National DRM Policy in different ways ranging from a local log frame in Mzuzu to capacity building in Nsanje and building resilience and implementing mitigation with other partners. Although Mangochi District Council did not have one, they incorporated the DRM issues in the Annual Work Plan. Dedza District Council reported to have recently drafted framework.

### ***3.6.2 Decentralization through Information Centers***

In terms of DRM Information Centers, Karonga, Nsanje, Machinga and Mangochi were reported to have operational centers. In Karonga these were in TAs Kyungu, Wansambo, and Mwilang’ombe while in Nsanje these are in TA Malemia only. In Machinga, these information centers were found in TAs Kawinga, Ngokwe, Chikweu, Kapoloma, Nkoola, and Nyambi.

The implementation of the centers was hampered by material, financial and human resources in Nsanje, inadequate response of the community “because CPC kept information for a long time” in Karonga and structures that were “not up to standard” in Machinga. However, the DRM officers in the districts reported to have provided support to information centers at Kyungu, Wansambo and Mwilan’gombe TAs in Karonga and Malemia in Nsanje. The support was previously in form of literature in Nsanje and volunteer personnel in Karonga. The respondent in Dedza indicated that the district did not have “the capacity to implement the information centers. This was probably line with the strategy that was under development at the time of the assessment.

### ***3.6.3 Emergency Operation Centres***

The study found that only Karonga reported to have an Emergency Operation Centre. Their main challenges are lack of coordination in operating it.

### ***3.6.4 Hazard Contingency Plans***

All the districts providing data reported to have hazard contingency plans. All the local Councils have made provisions to test and review the plans annually. The oldest known plan was first developed in Mangochi in 2007, followed by Nsanje in 2010 and then Chikwawa in 2012. Only Karonga reported that they did not use hazard contingency plans when disasters strike due to inability to test and review the plans annually. Dedza District Council was unable to provide the data and reasons why the plans were not used.

### 3.6.5 Presence and Functionality of Civil Protection Committees (CPCs)

Blantyre District, Nsanje, Dedza, Mangochi, Machinga, Lilongwe City, Karonga and Mzuzu City reported that they had functional CPCs. The other remaining districts, did not provide any information related to the presence and functionality of the CPCs and constituted one of the major limitations of the baseline study. The CPCs were based at district, area and Group village headmen levels in accordance with the decentralization policy. In line with the DRM Policy, the committees were trained in mitigation/ prevention, preparedness, response and recovery. All the CPCs had been trained in at least one preparedness strategy. Karonga, Nsanje, Blantyre, Mangochi, and Machinga had been trained in all the four aspects. Furthermore, Dedza committees had been trained in prevention and preparedness while Lilongwe and Mzuzu committees had been trained in preparedness only.

The trainings were conducted by the Government through the district councils and in collaboration with partners. The earliest training reported was done in Dedza in 2011 and Machinga, Mangochi and Mzuzu local councils have reported conducting trainings in 2018. The partners included Self Help Africa (SHA), FOCUS, CARE Malawi, COOPI, Red Cross, SOIDEV, Evangelical Lutheran, SOS, Salvation Army, Emmanuel International, DfID, UNICEF, GOAL Malawi, United Purpose, Action Against Hunger, CADECOM, and Climate Proofing. Table below details the distribution of the trainings done for the committees.

**Table 19** Functionality Capacity of Civil Protection Committees at District, Area and Group Village Headmen Levels

<b>Council</b>	<b>CPC Levels</b>	<b>Functional CPCs</b>	<b>Trained CPCs members</b>	<b>Training Done</b>	<b>Provider</b>	<b>Year</b>	<b>Key CPC Partners</b>
<b>Mzuzu</b>	District and Area	6 Area	36	Preparedness	SOS	2018	Government, SOS
<b>Karonga</b>	District, Area and GVH	48 Area	11	Prevention, Preparedness, Response, Recovery,	DODMA, SHA, FOCUS, Salvation Army	2014	Salvation Army, SHA, FOCUS, Government, Evangelical Lutheran, Self Help Africa, SOIDEV

<b>Nsanje</b>	Area	9 ACPC, 98 VCPCs	9 ACPC, 98 VCPCs	Prevention, Preparednes s, Response, Recovery,	Red Cross, CARE Malawi,	2014	Red cross, CARE Malawi, COOPI, Goal Malawi
<b>Blantyre</b>	Area	8, 72 GVH	8, 72 GVH	Prevention, Preparednes s, Response, Recovery,	Save the Children	2015	Action Against Hunger, Save the Children
<b>Lilongwe</b>	Area	0	0	Preparednes s	DFID, UNICEF , DC's Office	2014	DFID, UNICEF, Government
<b>Mangoch i</b>	District , Area and GVH	District=1, Area=18, GVH= 85	District=1 , Area=18, GVH= 85	Prevention, Preparednes s, Response, Recovery	DCPC	2018	COOPI, United Purpose, Emmanuel Internationa l, Cadecom
<b>Dedza</b>	District	8 Area	8	Prevention, Preparednes s	United Purpose	2011	United Purpose
<b>Maching a</b>	District , Area and GVH	District=1, Area=15, GVH=120	District=1 , Area=15, GVH=12 0	Prevention, Preparednes s, Response, Recovery	DoDMA, NGOs	2018	DoDMA, Emmanuel Internationa l, CADECOM , Red Cross, Goal Malawi, Climate Proofing

### ***3.6.6 DRM Programs implemented at district level***

There were a number of DRM programs and projects that were being implemented in the districts. The Organizations implementing these programs were SOS, FOCUS, Salvation Army, DODMA, the local councils, DCCM, CADECOM, Gift of the Givers, Emmanuel International, Care Malawi, Red Cross, Save the Children, JTI Foundation, and Habitat for Humanity. Habitat for Humanity, for instance was supporting communities to build strong houses in Chikwawa. In all the districts the projects concentrated on a minimum of two focus areas and addressing various specific hazards. **Table 19** details the DRM programs and the challenges each program or project attempts to address. These challenges are aligned with the specific hazards particular to the area of concern. The beneficiaries of the programs countrywide totaled 63,139 people.

**Table 20** Distribution of DRM Programs and details of beneficiaries

Council	DRM Programs	Location	Focal Area	Sector	Specific Hazard	GENDER		Age			Disabled		Total
						M	F	0-17	18-65	65>	M	F	
Mzuzu	Housing	Masasa Ward	Preparedness	Health	Landslide	495	631	614	422	90	5	7	1,126
Karonga	Building Community Resilience	Kyungu, Wansambo, Kilipula	Mitigation/Prevention, Preparedness, Response, Recovery	Agriculture, Energy, Health	Droughts or dry spells and floods	-	-	-	-	-	-	-	-
Nsanje	Ubale Project, DRR Project, Enhancing resilience project in Malawi	All T/A's except Nyachikadza	Mitigation/Prevention, Preparedness, Response, Recovery	Agriculture, Health	Droughts or dry spells, floods, Strong winds, Human disease outbreaks, Crop pests or disease outbreak, livestock pests or disease outbreak	17,763	11,200	-	-	-	-	-	28,963
Chikwawa	Disaster risk reduction and response project	Lundu	Preparedness, Response,	Housing	Floods, Strong winds	-	-	-	-	-	-	-	-
Blantyre	Ubale Project	All TA's in Blantyre	Mitigation/Prevention, Preparedness, Response, Recovery	Agriculture	Droughts or dry spells, floods, Strong winds, Rainstorm	-	-	-	-	-	-	-	-

<b>Lilongwe</b>	Urban Resilience	Njewa	Mitigation/Prevention, Preparedness, Response,	Agriculture, Education	Floods, Strong winds, Rainstorm	-	-	-	-	-	-	-	33,000
<b>Mangochi</b>	Climate Proofing , MFERP , MDRRP , ECO	Nankumba , Mponda, Chimwala	Mitigation/Prevention, Recovery	Agriculture, Energy	Droughts or dry spells and floods,	-	-	-	-	-	-	-	-
<b>Dedza</b>	Catch them Young	Kaphuka	Preparedness, Response,	Agriculture, Health	Floods, Fire outbreaks, Strong winds	20	30	50	-	-	-	-	50
<b>Machinga</b>	Njira, Climate Proofing , Climate Challenge, MFERP	Kawinga, Ngokwe, Chikweu, Kapoloma, Nkoola, Nyambi	Mitigation/Prevention, Preparedness, Response	Agriculture, Education, Energy, Health	Droughts or dry spells, floods, Strong winds, Earthquakes, Human disease outbreaks, Crop pests or disease outbreak, livestock pests or disease outbreak	0	0	0	0	0	0	0	0
<b>Total</b>													<b>63,139</b>

### ***3.6.7 Funding of DRM Programs***

The study also sought to understand the amount of resources made available for DRM programs at district level. Data on programs, focus areas of intervention and funding available at area level were collected using the Institutional Questionnaire.

Funding for the DRM Programs in the districts totaled MK5,242,696.00. However, just like most of the information available at district level, this amount is suspiciously underreported. The funding was done direct into each district in line with the Decentralization Policy. The development partners included NORAD, UNDP, the Royal Dutch Government, International Federation of Red Cross (IFRC), JTI Foundation, Habitat for Humanity, European Union, the World Bank, TROCAIRE, United Purpose and USAID. All these donors are foreign.

**Table 21** Funding of DRM Programs

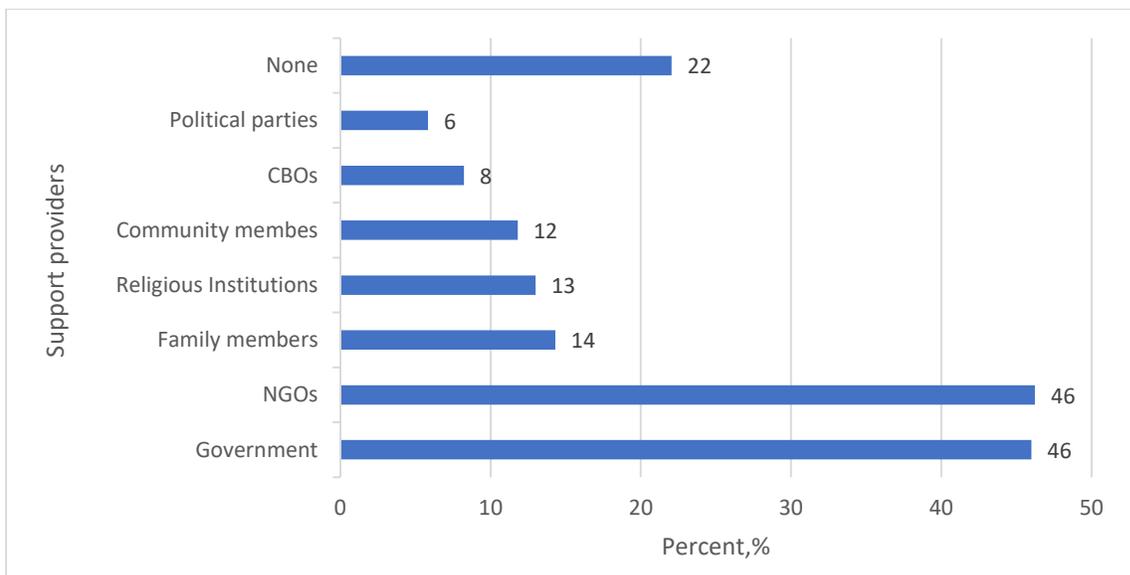
<b>Council</b>	<b>DRM Programs</b>	<b>Location</b>	<b>Donor</b>	<b>Type</b>	<b>From</b>	<b>TO</b>	<b>Amount</b>
<b>Mzuzu</b>	NORAD/ SOS	Masasa, Chiputula, Zolozolo	NORAD	Foreign	June 17/17	July 17/19	460,000
<b>Karonga</b>	BCRD, WASH	Kyungu, Wansambo, Kilipula	UNDP, Netherlands	Foreign	2017	2021	4,000,000
<b>Nsanje</b>	Ubale, Enhancing Resilience Project in Malawi	STA's, except T/A Nyachikadza, T/A Ndamera	ECHO-ERIM, European Commission through Belgium, Netherlands, Danish Red cross societies	Foreign	2014	2019	41000
<b>Chikwawa</b>	Disaster RR&R Project	Lundu, Ngabu	Habitat for Humanity, JTI Foundation	Foreign	2017	2020	623696.2
<b>Blantyre</b>	Ubale	Blantyre district	CRS	Foreign	2014	2018	0
<b>Lilongwe</b>	Global Framework for Climate Service (GFCS)	Lilongwe	International Federation of Red Cross (IFRC)	Foreign	2013	2019	112000
<b>Mangochi</b>	Climate Proofing, MFERP, MDRRP, ECO	3 T/A's, 6 T/A's	UNDP, World Bank, EU	Foreign	2015	2020	0
<b>Dedza</b>	Catch them Young, Behavior Change	Kaphuka, All T/A's	United Purpose	Foreign	2016	2021	6,000.00
<b>Machinga</b>	Njira, Climate Proofing, Climate Challenge, MFERP	Mulomba, Chikweo, Nyambi, Liwonde, Nsanama	USAID, UNDP, Trocaire, World Bank	Foreign	2015	2019	0

### 3.7 Disaster Relief Support

This section analyzes the disaster relief provided and managed by different institutions, organizations and even family members. In this context disaster relief was looked at as responding to a catastrophic situation by providing humanitarian aid to persons and communities who suffered from some form of disaster. It also involved dealing with and avoiding risks and preparing, supporting, and rebuilding society when natural or human-made disasters occur.

#### 3.7.1 Response support type and relevance

The baseline study sought to understand when a disaster occurred and who usually provided support to those affected households or communities. Several responses were coming out from the interviews. Furthermore, the respondents were asked to determine the most three service providers which mostly did respond to affected households or communities when disaster occurred as depicted in figure 22 below.

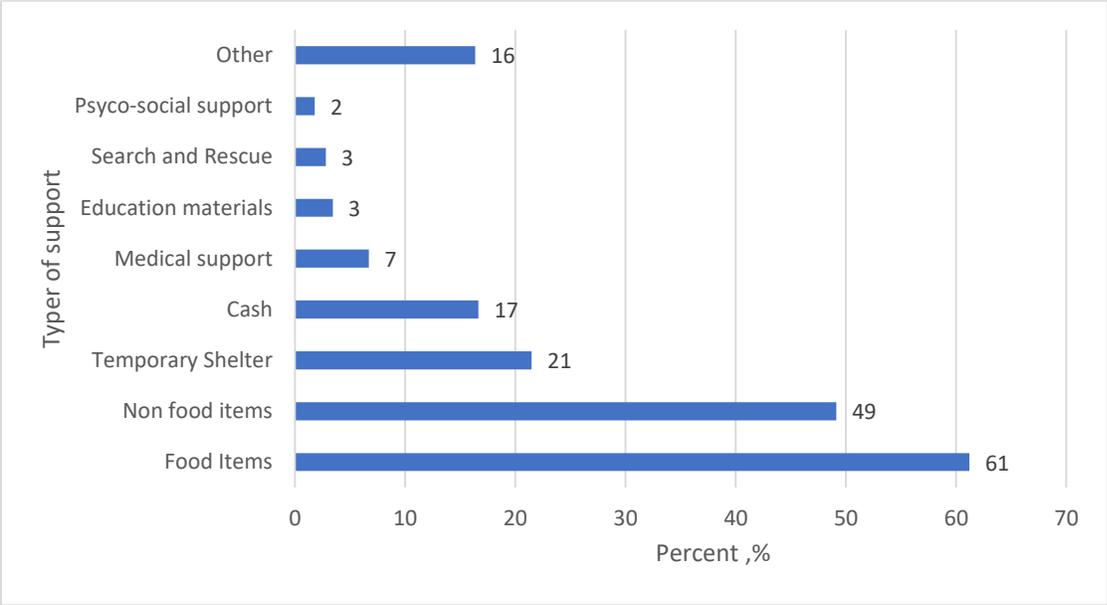


**Figure 23: Service providers for DRM Relief Support**

As presented in figure 22, the baseline study revealed that 46% of the respondents across the sampled population mentioned that Government of Malawi and NGOs were on top list when the disasters occurred in terms of supporting the affected households or communities. Family members (14%) and Religious Institutions (13%) were also cited that they provided support when disasters occurred. Details of service providers at district level are shown in annex 1, table 33.

#### **Kind of support provided by Service Providers**

The baseline study also asked the respondents what kind of support usually the households or communities received when the disasters occurred as presented in figure 23 below.



**Figure 24: Type of support by service providers**

As depicted in the figure 23 above, the study findings revealed that the most common support received by the households include food items (61%), non-food items (49%), and temporary shelter (21%). Nonetheless, psych-social support (2%) and education materials (3%) were mentioned the least in terms of the type of support provided. Annex 1, table 34 depict the type of support provided at district level.

**Relevance, Timely and Adequacy of Disaster Support**

The baseline study also sought to understand if the households received any support as a result of disasters in the last 2 years and further if the support was timely, relevant, and adequate as described in table 21.

**Table 22: Relevance, timeliness and adequacy of the support received in the past two years (from 2016 to 2017)**

<b>Name of the council</b>	<b>Various support received</b>	<b>Timely support</b>	<b>Adequate support</b>	<b>Relevant support</b>
Karonga	13	90	40	90
Mzuzu City	13	63	38	63
Nkhata Bay	3	25	0	50
Salima	54	62	52	84
Lilongwe City	50	62	36	68
Dedza	7	60	20	40
Ntcheu	26	81	68	95
Machinga	34	85	65	88
Balaka	27	84	72	91
Mangochi	32	79	73	83
Zomba Rural	29	91	34	88
Zomba City	9	67	67	100
Blantyre Rural	8	83	83	100
Blantyre City	3	100	50	100
Nsanje	28	79	47	85
Chikhwawa	35	77	32	84
Phalombe	35	95	49	86
<b>Total</b>	<b>27</b>	<b>78</b>	<b>53</b>	<b>84</b>

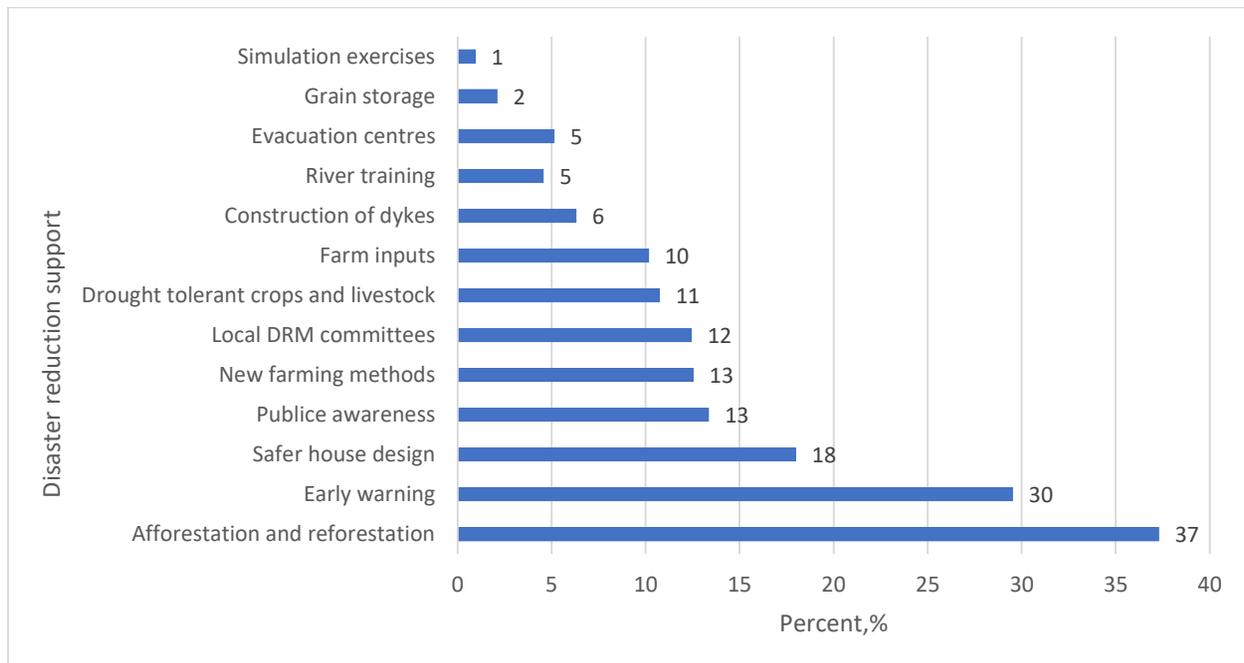
As presented in the table 21 above, 27% of the respondents interviewed across all the sampled population indicated that they received the support which were from government, NGOs, family members, Faith Based Organizations, Community Based Organizations, political parties and community members in the past two years. The results findings also revealed that the support were most relevant in Zomba city (100%), Blantyre city and district (100%), Balaka (91%), Karonga (90%) and just mention a few.

The study also inquired the timeliness of the support received. The results revealed that an overall of 78% of the respondents across the sampled populations received timely support. Blantyre city had the highest percentage of households indicating that they received timely support (100%), followed by Phalombe (95%), Zomba Rural (91%) and Karonga (90%). The least percentage of respondents receiving timely support was in Salima and Lilongwe City (62% each).

The study further revealed that in the past two years, the overall support received from different organizations was generally inadequate with only 53% suggesting it was adequate. Nevertheless, Blantyre rural recorded the highest (83%) adequate support received while Nkhata bay was recorded the least (0%). Despite the support being inadequate, the majority of the beneficiaries (84%) were satisfied with the relevance of the support. One hundred percent of the respondents in Zomba City, Blantyre City and Blantyre rural indicated that the support was relevant.

### 3.7.2 Risk Reduction and recovery support types before and after disaster

The baseline study also tried to find out the most common type of risk reduction support that outsiders provide before disaster occurred. In this study context, the respondents were asked to determine the most five recovery support as presented in figure 24.

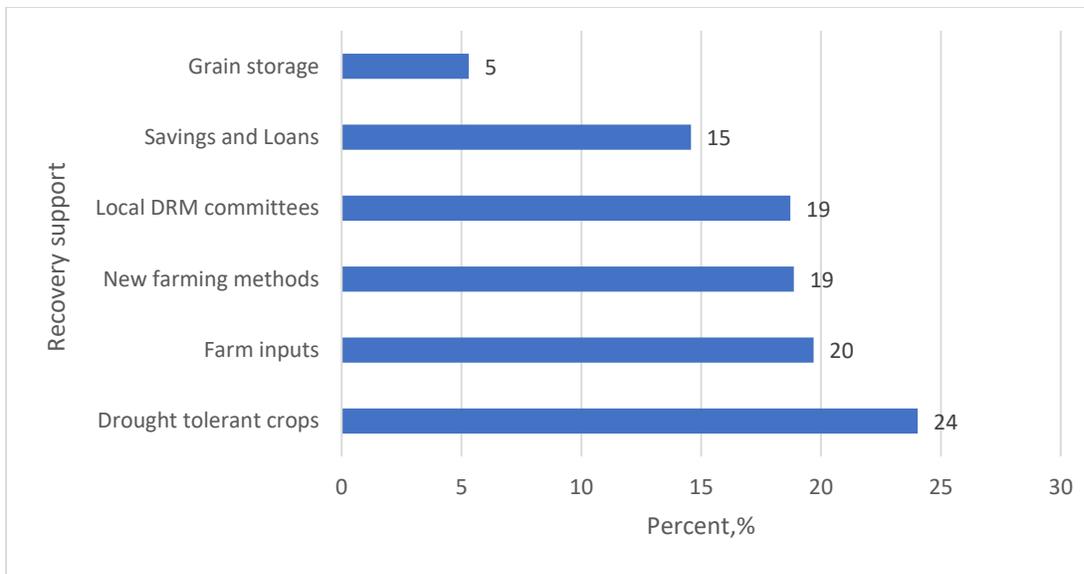


**Figure 25: Risk reduction initiatives before disasters occurs**

As presented in the figure 27 above, the responses from survey results indicated that afforestation and reforestation (37%) were regarded as the most risk reduction and recovery support, followed by early warning (30%), safer house design (18%), public awareness and new technology farming methods (13%), establishment of local disaster committees (12%) and finally simulation exercise (1%) was mentioned the least by the sampled population. The detailed results at district level are depicted in annex 1, Table 35.

#### **Risk Reduction and Recovery Support type after Disasters occurred**

The baseline study further sought to understand the most common type of risk reduction support that outsiders provide after disaster occurred. In this study context, the respondents were asked to determine the most five recovery support as presented in figure 25.



**Figure 26: Risk reduction and recovery support after disasters occurs**

In figure 25 above, the study findings revealed that the most risk reduction and recovery support after disasters occurred were; drought tolerant crops (24%), Farm inputs (20%), New technology farming technique and establishment of local disaster committees (19%) and savings and loans (15%). Nonetheless, grain storage was mentioned the least. In terms of gender, male respondents (26%) received more risk reduction and recovery support after disasters occurred compared to female respondents. Details at district level are showed in annex 1, Table 36.

## 4 CONCLUSION AND RECOMMENDATION

### 4.1 CONCLUSIONS

The Comprehensive Baseline Assessment of Disaster Risk Management in Malawi Study came about as a result of Malawi witnessing an increase in the frequency and magnitude of hazards and disasters in the recent decades. The Government and its development partners recognized that disasters have led to loss of lives, livelihoods, and contributed to slow socio-economic development of the country, among other effects. Hazards, biological, natural or otherwise, have a negative effect on humans or the environment. Disaster events threaten the health, life and well-being of all people however people with disabilities are disproportionately affected. The Government also noted that a comprehensive picture needed to be made in order to effectively respond to the hazards and disasters in line with the international trends.

The study was commissioned by the Government of Malawi to provide data and information on categories and indicators related to disaster risk management and in line with the Sendai Framework. Specifically, the intended use of the results were to: (a) act as a benchmark to measure progress in the implementation of the DRM Policy; (b) analyse the costs and benefits of disaster risk management alternatives; (c) monitor and report on progress in the implementation of the SFDRR; (d) guide the design and implementation of disaster risk management programmes; (e) facilitate the coordination of stakeholders involved in disaster risk management in the country; and (f) provide baseline information for the design of a successor Disaster Risk Management Programme Support that DoDMA implements with support from UNDP.

The study used qualitative and quantitative methods in responding to the specific research questions and data needs for establishment of baseline values. Data collection tools included (a) Household questionnaire; (b) Institutional questionnaire which was administered to the district DRM offices and partners (c) Focus Group Discussion guiding questions; and (d) physical observation checklist in the sampled communities and a checklist for the targeted institutions. The study targeted 2,075 households in the 17 districts. It also targeted DRM district offices and their partners.

The majority of households reported to be most vulnerable to drought or dry spells (91%) followed by strong winds (36 %) then floods (33 %). The reasons that make them particularly vulnerable to the different hazards they are exposed include poverty (70%). The study also sought to understand the factors that made people more vulnerable. The factors included location in high risk areas was reported by (54%) lack of knowledge (33 %), age (9%) and chronic illness or disability (3%).

The study also found that 13 percent of households had a member with disability as such any disaster risk management programmes need to also look at the vulnerable population such as those with different levels of disability. More importantly there in need to use effective information

dissemination systems that reach many recipients, including the vulnerable population, mostly those to be impacted by the disaster event.

In terms of disaster impact, as noted in the PDNA (2015) report, the immediate consequence of the disaster was damage of houses which left many people without shelter. The study found that a total of 62 percent of households had burnt bricks as materials for the wall of the dwelling units while the remaining 38 percent used permeable structures for the wall, and these were prone to disasters. In addition, six districts reported 858 deaths due to disasters in the last five years as reported by six districts that provided institutional data. The deaths were due to factors such as floods, strong winds and human disease outbreaks.

The institutional data also reported that at national level, a total of 82, 575 persons were evacuated in the last five years. The most common evacuation points were schools, followed by tents/ camps. The most common challenges that were experienced during evacuation were lack of transport and lack of capacity. Another reported challenge is lack of evacuation centres.

Disaster also impacted negatively on livelihood and agricultural losses making the households more vulnerable. On agricultural losses across 17 districts, 65 percent of households reported incurring losses in maize followed by other crops and cereals (18%), legumes/ pulses (8%) and cassava (8%) over the past five years. Female headed households registered higher loss (67%) compared to male counterparts (64%). Balaka was worst hit by disasters (93%) particularly maize losses and followed by Ntcheu (88%), Salima and Phalombe (84%), Zomba Rural (81%) and the least were recorded in Blantyre City (27%) and Lilongwe city (26%).

In productive assets an estimated average of two radios per district were lost due to damages by disasters and followed by the bicycles and storage structures and oxcarts/ploughs.

The study has found that in the aftermath of disasters, relief support has come from Government of Malawi and NGOs. Other support has previously come from by family members and religious institutions. The support after disasters include drought tolerant crops (24%), farm inputs (20%), New technology farming technique and establishment of local disaster committees (19%) and savings and loans (15%).

The households develop different mechanisms for resilience. These include casual labour (Ganyu) (41% of the sampled households). Tree planting is another resilience strategy to address climate change. It was reported in Zomba City and Chikhwawa (42% each). The small scale business option has also been reported by over half of the sampled households from Karonga and Mzuzu City. The Ganyu and Small Scale Business comparison showed that where Small Scale Business was high the Ganyu has lower proportions. PWP as a safety net intervention was reported by 29 percent of households from Chikhwawa while Zomba City had 27%.

DRM is being mainstreamed in District Annual Plans and Development Plans. The mainstreaming includes issues such as capacity building in Nsanje, building resilience and implementing mitigation with other partners. DRM has been decentralized to district councils. The districts have DRM offices in addition to emergency operation centres, hazard contingency plans and civil protection committees at district, area and village levels based on need in specific sectors. The funding is done direct into each district in line with the Decentralisation Policy. The development partners include NORAD, UNDP, the Royal Dutch Government, International Federation of Red Cross (IFRC), JTI Foundation, Habitat for Humanity, European Union, the World Bank, TROCAIRE, United Purpose and USAID.

## 4.2 RECOMMENDATIONS

Although most studies do not provide recommendations on the baseline study, except for improving the results framework, the finding of the current study compelled the consultants to provide recommendations in order to guide programming of DRM activities amongst stakeholders. The recommendations were based on the baseline differences across districts, gender groups and vulnerability factors amongst the target households as follows:

- **Reallocation of households from high risk areas:** The government and its stakeholders should devise lasting strategies aimed at permanently relocation households from disaster prone areas. The solutions should include provision of sustainable livelihood strategies in the new areas and enforcement strategies to ensure that relocated households do not go back to the high risk areas.
- **Knowledge management:** There is a need to use effective information dissemination systems that reach many recipients, including the vulnerable population, mostly those impacted by the disaster event. This will ensure timely management of the disaster both for prevention and for rescue.
- **Enforcement of standards on structures:** The government, through relevant ministries should enforce quality standards in building structures particular in risky areas to minimize to impact of disaster. Impermeable structures for the walls of the dwelling units reduce damage to the houses and projects that support construction of decent houses need to be part of disaster risk management programmes.
- **Establishment of evacuation points:** The Government need to establish evacuation point in each of districts, close to high risk areas for easy and timely access.
- **Mapping of high risk areas:** It is recommended that high risk areas be mapped and information shared to public.
- **Modelling of livelihood strategies in relation to districts potentials:** The Government need to model livelihood and disaster management strategies based on unique agro-climatic conditions of each district. Different disasters affect households in different districts differently leading to varying impact and response strategies. Based on imperial data, scenario can be modelled to guide the type of response to embark when the calamity occurs or the type of mitigation strategies when signs of calamity are observed. In this baseline

study, it was noted that most households resort to ganyu as a survival mechanism, the process ignoring their fields hence perpetuating hunger. However, where households are engaged in small scale businesses, it was noted that the percentage that resorted to ganyu reduced.

- **Decentralization of DRM activities:** The Department should take advantage of the decentralization derive by the government to devolve DRM activities to the districts. This will ensure efficiency and timely response to the disaster.

## **5 REFERENCE**

Government of Malawi, 2005. “Malawi 2015 Floods Post Disaster Need Assessment Report”. The World Bank Global Facility for Disaster Reduction and Recovery, United Nations and The European Union, Lilongwe.

World Bank, Hard hit by El Niño: Experiences, Responses, and Options for Malawi

## 6 APPENDIX 1 Tables

**Table 23: Percentage of households by whether the household has a member with disability and type of disability**

		Household has a member with disability	Type of disability		
			Blind	Physical Disability	Retarded or has mental health problems
Sex of head	Male	11	1	5	4
	Female	14	2	8	4
Education level of head	None	17	3	9	5
	Primary (St .1-5)	16	1	10	3
	Primary (St.. 6-8)	10	1	4	4
	Secondary (1-2)	11	3	4	5
	Secondary (3-4)	6	1	3	1
	Tertiary	16	2	5	16
District	Karonga	9	1	6	0
	Mzuzu City	10	0	2	6
	Nkhata Bay	11	1	3	6
	Salima	15	5	9	5
	Lilongwe City	10	0	5	4
	Dedza	18	1	7	4
	Ntcheu	12	1	6	3
	Machinga	17	2	10	4
	Balaka	7	0	5	2
	Mangochi	10	2	6	2
	Zomba Rural	12	1	7	3
	Zomba City	7	0	4	3
	Blantyre Rural	15	3	5	3
	Blantyre City	16	5	7	7
	Nsanje	10	0	7	2
	Chikhwawa	16	3	6	8
Phalombe	16	2	8	6	
<b>Total</b>		<b>13</b>	<b>2</b>	<b>7</b>	<b>4</b>

**Table 24: Education level of household heads at district level (%)**

	Read and write	Level of education of household head					
	Yes	None	Primary (St .1-5)	Primary (St.. 6-8)	Secondary (1-2)	Secondary (3-4)	Tertiary
Karonga	85	4	4	39	28	25	1
Mzuzu City	82	8	8	32	24	27	0
Nkhata Bay	80	9	21	32	16	22	0
Salima	54	40	28	26	2	4	0
Lilongwe City	76	21	14	18	12	26	8
Dedza	70	16	45	27	3	8	0
Ntcheu	78	16	32	31	7	13	1
Machinga	58	34	26	28	5	5	2
Balaka	54	34	32	23	3	7	1
Mangochi	56	34	27	27	6	6	1
Zomba Rural	66	23	29	38	6	5	0
Zomba City	74	17	18	14	15	24	12
Blantyre Rural	66	24	16	31	14	13	3
Blantyre City	94	7	7	24	23	30	9
Nsanje	61	27	21	30	13	8	1
Chikhwawa	60	28	22	30	10	9	2
Phalombe	70	17	36	31	10	5	0

**Table 25: Percentage of distribution of households by main source of income (%)**

		Main Sources of Income for Household								
		Crop sells	Livestock sells	Formal employment	Casual labour	Remittances	Safety net	Sell of natural resources (firewood, Charcoal, Honey)	Petty trading/business	Others specify
<b>Sex of head</b>	Male	36	1	10	25	1		1	21	5
	Female	38		7	26	4	1	1	17	6
<b>District</b>	Karonga	64	0	9	11	4	0	1	9	3
	Mzuzu City	18	0	19	23	5	2	0	31	3
	Nkhata Bay	68	0	3	15	3	0	1	8	2
	Salima	90	0	0	5	0	0	2	1	3
	Lilongwe City	14	0	20	10	1	3	0	24	28
	Dedza	18	0	4	36	12	0	0	16	14
	Ntcheu	22	0	4	43	7	0	0	15	9
	Machinga	46	0	6	30	2	0		13	2
	Balaka	4	0	2	43	7	2	0	39	3
	Mangochi	40	0	4	32	2	0		20	2
	Zomba Rural	44	2	4	27	4	0	0	14	6
	Zomba City	3	1	28	24	1	0	0	36	6
	Blantyre Rural	16	0	8	39	1	0	0	29	8
	Blantyre City	0	2	32	8	0	2	3	44	9
	Nsanje	45	1	6	32	2	0	1	13	1
	Chikhwawa	53	2	3	26	2	1	3	10	1
Phalombe	60	0	3	19	1	0	0	16	2	
<b>Total</b>		<b>37</b>		<b>8</b>	<b>26</b>	<b>3</b>		<b>1</b>	<b>19</b>	<b>6</b>

**Table 26: Percentage of household owing specific communication assets**

		Motorcycl e	Motor vehicle	Bicycle	Radio	Television	Mobile phone	Other communication assets
Sex of head	Male	4	1	46	40	12	62	
	Female	3	1	30	27	10	48	
District	Karonga	5	0	39	36	10	73	0
	Mzuzu City	2	0	31	50	16	79	0
	Nkhata Bay	6	0	43	52	16	77	2
	Salima	2	0	41	25	6	43	2
	Lilongwe City	1	6	29	49	25	80	1
	Dedza	4	0	30	41	1	44	0
	Ntcheu	2	0	21	22	7	46	0
	Machinga	5		51	26	5	50	
	Balaka	1	0	35	18	4	37	0
	Mangochi	4		33	19	5	42	0
	Zomba Rural	5	1	41	37	5	36	0
	Zomba City	4	1	18	52	27	73	0
	Blantyre Rural	1	0	18	29	10	51	0
	Blantyre City	0	7	14	51	51	89	0
	Nsanje	3	0	30	27	2	50	0
	Chikhwawa	8	0	56	23	7	46	0
	Phalombe	2	1	80	45	2	42	0
<b>Total</b>		<b>3</b>	<b>1</b>	<b>37</b>	<b>33</b>	<b>11</b>	<b>54</b>	

**Table 27: Percentage of households possessing specific productive assets**

		Solar panel	Animal drawn cart	Plough or ridger	Treadle pump	Sprayer	Wheelbarrows
Sex of head	Male	17	1	1	1	3	5
	Female	13		1	1	2	3
District	Karonga	16	5	1	0	4	0
	Mzuzu City	2	0	0	0	0	2
	Nkhata Bay	28	2	0	0	3	4
	Salima	9	1	0	3	3	2
	Lilongwe City	9	0	0	1	1	15
	Dedza	18	1	0	1	3	3
	Ntcheu	19	0	2	2	2	3
	Machinga	11	1	2	0	0	2
	Balaka	16	0	0	1	3	0
	Mangochi	13	0	2		1	2
	Zomba Rural	16	0	0	0	2	2
	Zomba City	10	0	0	0	0	10
	Blantyre Rural	13	0	5	1	0	3
	Blantyre City	3	0	7	0	0	19
	Nsanje	17	1	0	3	4	3
	Chikhwawa	19	1	0	2	11	0
Phalombe	24	1	2	0	2	1	
<b>Total</b>		<b>14</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>4</b>

**Table 28: Percentage distribution of households by materials used for the floor of the main dwelling unit.**

		What is the main material of the floor of the main house ?					
		SAND	SMOOTHENED MUD	SMOOTH CEMENT	WOOD	TILE	OTHER
Sex of head	Male	1	66	32	0		0
	Female	2	70	28			
District	Karonga	0	51	49	0	0	0
	Mzuzu City	2	35	63	0	0	0
	Nkhata Bay	0	51	49	0	0	0
	Salima	0	89	9	2	0	0
	Lilongwe City	0	23	74	0	3	0
	Dedza	0	86	14	0	0	0
	Ntcheu	3	75	21	0	0	0
	Machinga	2	75	24	0	0	0
	Balaka	0	91	9	0	0	0
	Mangochi	1	81	18	0	0	
	Zomba Rural	2	88	10	0	0	0
	Zomba City	3	40	55	0	1	0
	Blantyre Rural	4	63	34	0	0	0
	Blantyre City	0	19	81	0	0	0
	Nsanje	6	79	15	0	0	0
	Chikhwawa	1	83	17	0	0	0
Phalombe	0	93	7	0	0	0	

**Table 29: Percentage of households by main materials used for the main dwelling unit.**

		What are the main materials of the walls of the main house ?								
		GRASS	Mud	COMPACTED EARTH (YAMDINDO)	MUD BRICK (UNFIRED )	BURNT BRICKS	CONCRETE	WOOD	IRON SHEETS	OTHER
Sex of head	Male	2	5	2	22	65	3	0	0	1
	Female	1	4	2	30	59	3		0	
District	Karonga	1	0	0	8	86	5	0	0	0
	Mzuzu City	0	0	0	29	71	0	0	0	0
	Nkhata Bay	0	0	0	5	93	2	0	0	0
	Salima	5	7	2	36	50	1	0	0	0
	Lilongwe City	1	4	0	43	51	0	1	0	0
	Dedza	0	12	5	41	41	0	0	0	0
	Ntcheu	0	2	1	21	74	1	0	0	0
	Machinga		6	1	15	73	5	0	0	0
	Balaka	0	1	2	35	62	1	0	0	0
	Mangochi		5	5	33	49	8		0	0
	Zomba Rural	0	4	5	41	50	0	0	0	0
	Zomba City	0	0	1	19	72	7	0	0	0
	Blantyre Rural	0	11	3	20	61	5	0	0	0
	Blantyre City	0	10	3	20	61	5	0	0	0
	Nsanje	22	2	0	17	47	2	0	0	8
	Chikhwawa	0	6	0	29	63	3	0	0	0
Phalombe	1	4	3	33	58	1	0	0	0	
<b>Total</b>		<b>2</b>	<b>4</b>	<b>2</b>	<b>26</b>	<b>62</b>	<b>3</b>		<b>0</b>	

**Table 30: Percentage of households by main water sources at household level**

		What is the main source of water for drinking ?										
		PIPED INTO DWELLING	PIPED OUTSIDE PERSONAL DWELLING	COMMUNAL STAND PIPE	PERSONAL HAND PUMP	COMMUNAL HAND PUMP	PROTECTED SPRING	UNPROTECTED SPRING	PROTECTED WELL	UNPROTECTED WELL	RIVER	OTHER (SPECIFY)
Sex of head	Male	2	12	21	2	47		1	4	4	1	5
	Female	2	7	21	4	56			4	2	1	3
District	Karonga	0	29	23	3	41	0	0	0	0	5	0
	Mzuzu City	5	34	42	0	11	0	0	5	2	2	0
	Nkhata Bay	0	1	18	0	70	0	0	5	4	0	2
	Salima	0	0	11	2	59	0	2	15	11	0	0
	Lilongwe City	4	16	64	1	13	0	0	1	0	0	0
	Dedza	0	0	22	1	75	0	0	0	1	0	0
	Ntcheu	0	2	17	4	68	1	1	3	1	0	3
	Machinga		7	8	2	75	0	0	3	5	0	0
	Balaka	0	0	20	1	77	0	0	0	0	3	0
	Mangochi		2	16	3	68		0	5	2		3
	Zomba Rural	0	2	18	2	54	3	0	5	0	0	16
	Zomba City	10	25	18	4	34	0	0	1	1	0	4
	Blantyre Rural	0	8	18	15	39	0	0	1	0	0	20
	Blantyre City	20	44	23	4	4	0	0	5	0	0	0
	Nsanje	0	7	4	2	43	0	3	12	21	2	6
	Chikhwawa	0	4	22	4	52	0	0	4	1	4	9
Phalombe	0	12	25	6	32	0	0	2	0	6	18	
<b>Total</b>		<b>2</b>	<b>10</b>	<b>21</b>	<b>3</b>	<b>52</b>			<b>4</b>	<b>3</b>	<b>1</b>	<b>4</b>

**Table 31: Percentage of households who consider to be vulnerable to the different types of hazards**

		Drought or dry spells	Floods	Fire outbreaks	Strong winds	Rainstorm	Earthquakes	Crop pests or disease outbreaks (locists and army worms)	Rail accidents
Sex of head	Male	91	57	13	29	14	29	20	0
	Female	90	18	0	39	27	0	13	14
District	Karonga	94	78	0	0	0	0	0	0
	Mzuzu City	95	50	0	0	0	0	0	0
	Nkhata Bay	93	45	0	0	0	0	0	0
	Salima	95	40	0	0	0	0	0	0
	Lilongwe City	79	43	25	67	100	0	0	0
	Dedza	99	32	0	0	0	0	0	0
	Ntcheu	95	10	0	100	50	50	100	0
	Machinga	85	31	0	22	0	0	14	0
	Balaka	96	57	0	0	0	0	0	0
	Mangochi	90	43	0	0	0	0	0	0
	Zomba Rural	96	13	0	0	0	0	0	0
	Zomba City	61	9	0	0	0	0	0	0
	Blantyre Rural	89	25	0	100	50	50	100	0
	Blantyre City	81	9	0	27	25	17	0	20
	Nsanje	96	55	0	0	0	0	0	0
Chikwawa	96	40	0	0	0	0	0	0	
Phalombe	98	30	0	0	0	0	0	0	
Total		91	33	4	36	22	13	15	9

**Table 32: Percentage of households by factors that make one to be vulnerable to disasters**

		Poverty	Lack of Knowledge	Chronic illness	Location in high risk area	Age	Disability
Sex of head	Male	63	31	2	57	9	3
	Female	73	35	4	51	16	3
District	Karonga	60	24	3	70	16	4
	Mzuzu City	37	18	2	71	13	7
	Nkhata Bay	57	17	0	56	9	0
	Salima	90	34	6	65	14	4
	Lilongwe City	50	25	2	55	6	0
	Dedza	86	58	8	30	25	0
	Ntcheu	79	48	3	46	22	0
	Machinga	68	40	3	40	9	0
	Balaka	88	57	3	38	21	0
	Mangochi	84	38	4	46	12	18
	Zomba Rural	76	27	5	53	15	0
	Zomba City	37	7	3	37	15	0
	Blantyre Rural	61	41	1	55	18	0
	Blantyre City	51	14	0	52	4	0
	Nsanje	62	32	2	83	13	0
	Chikhwawa	53	31	3	75	13	0
Phalombe	81	30	3	68	14	0	
Total		68	33	3	54	13	3

**Table 33: Percentage distribution of households by support providers for disaster relief**

		Government	NGO	Religious Organisations	CBO	Family members	Community members	Private sector	Political parties	None
Sex of head	Male	44	44	13	9	13	11	2	5	23
	Female	47	48	13	8	16	12		6	21
District	Karonga	55	59	13	10	13	15	0	3	15
	Mzuzu City	17	14	3	3	28	7	0	10	38
	Nkhata Bay	23	19	3	10	35	23	0	13	13
	Salima	72	85	15	8	7	23	0	3	3
	Lilongwe City	98	64	55	0	11	13	4	21	0
	Dedza	0	0	0	0	0	0	0	0	0
	Ntcheu	45	38	2	4	16	7	0	9	24
	Machinga	34	44	16	5	22	17	3	5	21
	Balaka	46	42	8	0	10	4	0	4	42
	Mangochi	48	57	9	8	9	4	1	2	17
	Zomba Rural	67	47	10	30	33	30	0	10	10
	Zomba City	22	22	11	14	10	16	0	8	43
	Blantyre Rural	46	35	4	0	4	0	4	0	42
	Blantyre City	11	14	14	4	25	13	0	4	41
	Nsanje	55	66	21	0	0	3	0	7	28
	Chikhwawa	0	0	0	0	0	0	0	0	0
Phalombe	47	0	0	73	0	0	0	0	13	
<b>Total</b>		<b>46</b>	<b>46</b>	<b>13</b>	<b>8</b>	<b>14</b>	<b>12</b>	<b>1</b>	<b>6</b>	<b>22</b>

**Table 34: Percentage of households by type of support received due to disasters**

		Food items	Nonfood items	Temporary shelter	Psychosocial support	Cash	Education materials	Medical support	Search and rescue	Other
Sex of head	Male	58	50	20	2	17	3	7	3	14
	Female	64	49	22	2	17	4	7	3	19
District	Karonga	68	59	3	0	24	4	5	0	16
	Mzuzu City	29	39	6	0	24	3	8	3	31
	Nkhata Bay	48	31	2	0	19	1	0	7	11
	Salima	88	91	42	1	17	15	20	4	0
	Lilongwe City	91	91	32	1	18	14	14	17	4
	Dedza	18	29	8	0	10	1	0	0	60
	Ntcheu	50	43	13	3	8	0	8	0	32
	Machinga	74	37	21	3	16	1	7	0	9
	Balaka	47	38	6	1	8	0	0	1	48
	Mangochi	64	49	34	2	19	4	4	0	14
	Zomba Rural	70	67	38	3	3	2	4	1	8
	Zomba City	37	49	22	1	9	3	1	0	33
	Blantyre Rural	54	50	28	5	18	1	8	3	15
	Blantyre City	34	7	14	2	19	4	2	5	1
	Nsanje	74	55	28	1	21	1	12	3	11
	Chikhwawa	58	34	11	0	40	2	13	0	19
	Phalombe	78	70	32	2	10	2	6	5	2
<b>Total</b>		<b>61</b>	<b>49</b>	<b>21</b>	<b>2</b>	<b>17</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>16</b>

**Table 35: Percentage of households by risk reduction activities before disaster**

		Early warning	Safer house design	Afforestation and reforestation	Public awareness	Simulation exercises	Construction of dykes	River training	Drought tolerant crops and livestock	Farm inputs	New farming methods	Evacuation centres	Local DRM committees	Grain storage	
Sex of head	Male	30	19	39	14	1	7	4	10	11	10	6	12	2	
	Female	29	18	36	13	1	6	5	11	10	15	5	13	2	
District	Karonga	21	23	46	21	3	24	4	11	13	9	4	11	0	
	Mzuzu City	10	29	11	42	0	0	0	2	11	6	0	2	0	
	Nkhata Bay	12	6	10	24	1	0	0	17	16	10	0	5	3	
	Salima	31	29	27	30	2	8	4	31	18	26	21	31	4	
	Lilongwe City	43	17	17	5	0	1	1	2	4	3	3	7	0	
	Dedza	26	11	14	5	0	0	3	1	0	0	0	0	3	
	Ntcheu	30	13	19	6	0	2	1	2	10	10	2	10	1	
	Machinga	32	20	42	12	1	4	2	12	6	15	3	10	3	
	Balaka	38	19	24	6	0	0	1	8	13	13	0	8	0	
	Mangochi	33	12	33	15		4	5	7	5	10	10	7	1	
	Zomba Rural	24	28	67	12	3	11	8	21	13	25	14	20	8	
	Zomba City	28	52	60	9	9	15	15	10	6	12	3	9	9	
	Blantyre Rural	35	10	49	8	0	6	4	11	14	18	4	9	0	
	Blantyre City	26	5	34	11	0	10	10	1	0	2	2	5	1	
	Nsanje	24	9	57	11	1	9	2	20	21	14	3	29	1	
	Chikhwawa	24	13	57	8	0	4	8	8	17	13	1	21	0	
	Phalombe	46	34	67	17	2	20	15	20	16	23	13	27	6	
	Total		29	18	37	13	1	6	5	11	10	13	5	12	2

**Table 36: Percentage of households by risk reduction activities after disaster occurred**

		Drought tolerant crops	Farm Inputs	New farming methods	Savings and Loans	Local DRM committees	Grain storage
Sex of head	Male	26	19	18	17	19	6
	Female	22	20	20	13	19	5
District	Karonga	31	24	29	21	41	3
	Mzuzu City	27	26	11	19	11	0
	Nkhata Bay	37	35	12	2	5	2
	Salima	38	31	20	3	47	9
	Lilongwe City	4	9	6	19	21	1
	Dedza	5	4	7	15	5	1
	Ntcheu	10	17	10	7	12	5
	Machinga	32	20	23	24	15	6
	Balaka	13	20	19	13	7	0
	Mangochi	24	17	23	24	15	3
	Zomba Rural	31	13	27	17	25	18
	Zomba City	12	13	21	24	16	22
	Blantyre Rural	26	19	26	15	11	10
	Blantyre City	6	10	7	14	12	6
	Nsanje	29	25	24	0	27	0
	Chikhwawa	36	33	18	2	17	2
Phalombe	39	22	32	17	37	11	
<b>Total</b>		<b>24</b>	<b>20</b>	<b>19</b>	<b>15</b>	<b>19</b>	<b>5</b>

## 7 APPENDIX 2: Household Questionnaire

### COMPREHENSIVE BASELINE ASSESSMENT OF DISASTER RISK MANAGEMENT IN MALAWI

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#### SECTION A. GUIDELINES NOTES FOR ENUMERATORS

- A1. Introduce yourself to the respondent, explain the purpose of the interview and ask if they are willing to participate in the interview. If they are not willing to participate thank them and leave them*
- A2. Make sure to interview the head of the household or the next adult person with decision making authority in the household (e.g. his or her spouse).*
- A3. Please record all the responses within the interview session. Reserve some few minutes at the end of the interview to cross check the responses you have not clearly understood/recorded.*
- A4. In this questionnaire, all questions that require multiple answers have been labeled MRQ, which means a multiple response question. All other questions that do not require multiple answers should have one response.*
- A5. Ensure you fill out the questionnaire as completely as possible, so that the gaps left do not affect the quality of the data*
- A6. Request the respondent that you write what they say and assure them that whatever they say is **CONFIDENTIAL***
- A7. At the end of the interview thank the respondent for sparing their valuable time in providing the information*

#### SECTION B: QUESTIONNAIRE IDENTIFICATION

Survey staff details		Household Identification	
<b>B1.</b> Name of interviewer		<b>B5.</b> Name of respondent.....	
<b>B2.</b> Date of the Interview /____/ 08/2018/		<b>B6.</b> Group Village Headman (GVH)	
<b>B3.</b> Name of supervisor		<b>B7.</b> Traditional Authority	
<b>B4.</b> Date of checking questionnaire /____/ 08/2018/		<b>B8.</b> District Name of household head	
		<b>B9.</b> Age of Household head	
		<b>B10.</b> Relationship between Respondent and household head	1 = Same Person
			2 = Spouse
			3 = Father
			4 = Mother
			5 = Brother
			6 = Sister

			7 = Other Please state
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**SECTION C: HOUSEHOLD DEMOGRAPHIC INFORMATION**

	C1	C2	C3	C4	C5	C6	C7	C8	C9
ROASTER NO	Q: What are the names of all persons who are members of this household	Q: is [NAME IN C1] male or female?  <b>CODE S</b> Male=1 Female=2	Q: What is the relationship of [NAME IN C1] to the head of the household?  <b>CODES</b> Head.....1 Spouse/partner...2 Child.....3 Grandchild.....4 Parent.....5 Sibling.....6 Brother/sister-in-law 7 Niece/nephew...8 Other relative.....9 Domestic help.....10 Other (specify).....11	Q: How old was [NAME IN C1] at his/her last birthday?  <b>YEAR S</b>	Does the household member have any disability?  <b>CODES</b> 1 for YES 2 for NO  If yes what kind of disability does the member have?  <b>CODES:</b> Deaf.....1 Blind.....2 Physical...3 Retarded/mental health.....4	Q: What is person's marital status?  Married monogamous.1 Married polygamous.....2 Informal union.....3 Divorced.....4 Separate.....5 Widowed.....6 Never married.....7	Q: Can NAME IN A1] read and write in English, Chiche wa or Tumbuka?  <b>CODE S</b> Yes....1 No.....2	Q: What is the highest level of schooling that [NAME IN C1] has completed?  <b>CODES</b> Some or no primary.....1 Primary (St.1-5).....2 Primary (St.6-8).....3 Secondary (1-2).....4 Secondary (3-4).....5 Tertiary (college or university).....6 Other (specify).....7	Q:How would you describe [NAME IN C01] main status in the last six months?  <b>CODES</b> Employed, formal sector.....1 Employed, informal sector.....2 Self-employed, including own farm, unpaid family worker..3 Looking for work.....4 Waiting for busy season...5 Studying.....6 Retired.....7 Housewife/housework/caring for household member.....9 Other.....10
	NAME								
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

**SECTION D: HOUSEHOLD INCOME, ASSEST AND ACCESS TO SERVICES**

**D1. HOUSEHOLD INCOME SOURCES AND EXPENDITURE DATA FOR ESTIMATING HOUSEHOLD INCOME**

D1.1	D1.2		D1.3	D1.4	
<p>What are the main source of income for the household? (MRQ)</p> <p>CODES:</p> <p>Crop sells .....1</p> <p>Livestock sells .....2</p> <p>Formal employment .....3</p> <p>Casual labour.....4</p> <p>Remittances.....5</p> <p>Safety net.....6</p> <p>Sell of natural resources (firewood, Charcoal, Honey).....7</p> <p>Petty trading/business...8</p> <p>Others specify.....9</p>	<p>How much did you spend on each of the listed food items the <u>last 7 days</u> for domestic consumption? (include both cash and credit)</p>		<p>During the last <u>7 days</u> did your household consume the following food items without purchasing them? If no, enter '0' and proceed to next food-item. If yes, ask: What was the main source of the item? CODES 1=own production 2=gathering/hunting 3=donation/food aid/gift 4=received in exchange for labour/items</p>	<p>Estimated value of the non-purchased food items consumed during the last 30 days prior to the survey day. (<i>this question refers to the consumption reported in D1.2</i>) <i>Establish quantity of food item secured in order to estimate its value, based on prevailing market price</i></p>	
		<b>Commodity</b>	<b>MK</b>	<b>MK</b>	<b>MK</b>
	<b>1</b>	Cereals (maize, rice, sorghum, wheat,)	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>2</b>	Roots & Tubers (sweet potatoes, cassava)	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>3</b>	Bread	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>4</b>	Pulses (beans, peas, groundnuts)	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>5</b>	Fruits & vegetables	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>6</b>	Fish/Meat/Eggs/poultry	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<b>7</b>	Oil, fat, butter	<input type="text"/>	<input type="text"/>	<input type="text"/>

	<b>8</b>	Milk, cheese, yogurt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>9</b>	Sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>10</b>	Salt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>11</b>	Tea/Coffee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>12</b>	Insect	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>13</b>	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## D2. HOUSEHOLD ASSETS

<b>D2.1</b>	<b>D2.2</b>	<b>D2.3</b>	<b>D2.4</b>	<b>D2.5</b>	<b>D2.6</b>
Do you own any of the following <b>communication</b> assets? (MRQ)	If Yes, how many? (Indicate Quantity)	Do you own any of the following <b>productive</b> assets? (MRQ)	If Yes, how many? (Indicate Quantity )	Do you own any of the following <b>livestock</b> assets? (MRQ)	If Yes, how many? (Indicate Quantity)
A. Motorcycle		A. Solar panel		A. Cattle	
B. Motor vehicle		B. Animal drawn cart		B. Donkeys	
C. Bicycle		C. Plough / ridge		C. Goats	
D. Radio		D. Treadle pump		D. Sheep	
E. Television		E. Sprayer		E. Chickens	
F. Mobile phone		F. Wheelbarrows		F. Pigs	
G. Other, specify .....		G. Other, specify....		G. Ducks	
				H. Guinea Fowls	
				I. Turkeys	
				J. Pigeons	
				K. Rabbits	

## SECTION D3: HOUSING, ENERGY, WATER AND WASTE DISPOSAL

<b>D3.1</b>	<b>D3.2</b>	<b>D3.3</b>	<b>D3.4</b>	<b>D3.5</b>	<b>D3.6</b>	<b>D3.7</b>	<b>D3.8</b>
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What are the main materials of the walls of the main house?	What is the main material of the roof of the main house?	What are the main materials of the floor of the main house?	What is the main source of energy for lighting?	What is the main source of energy for cooking?	What is the main source of water for drinking?	How do you dispose your waste matter?	What kind of toilet facility does your household use?
<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>	<b>CODES:</b>
GRASS.....1 MUD (YOMATA).....2 COMPACTED EARTH (YAMDINDO).....3 MUD BRICK (UNFIRED).....4 BURNT BRICKS.....5 CONCRETE.....6 WOOD.....7 IRON SHEETS.....8 OTHER (SP).....9	GRASS.....1 IRON SHEETS.....2 CLAY TILES.....3 CONCRETE.....4 PLASTIC SHEET.....5 OTHER (SP).....6	SAND.....1 SMOOTHED MUD.....2 SMOOTH CEMENT.....3 WOOD.....4 TILE.....5 OTHER (SP).....6	ELECTRICITY.....1 PARAFFIN.....2 FIREWOOD.....4 GRASS.....5 CANDLES.....6 TORCH.....7 OTHER (SP).....8	ELECTRICITY.....1 PARAFFIN.....2 CHARCOAL.....3 FIREWOOD.....4 GRASS.....6 GAS.....7 OTHER (SP).....8	PIPED INTO DWELLING.....1 PIPED OUTSIDE PERSONAL DWELLING.....2 COMMUNAL STAND PIPE.....3 PERSONAL HAND PUMP.....4 COMMUNAL HAND PUMP.....5 PROTECTED SPRING.....6 UNPROTECTED SPRING.....7 PROTECTED WELL.....8 UNPROTECTED WELL.....9 RIVER.....10 OTHER (SP).....11	BURNING.....1 HEAPING.....2 THROW ANYWHERE.....3 RUBBISH PIT.....4 OTHER (SP).....5	FLUSH TOILET.....1 VIP LATRINE.....2 ROOFED TRADITIONAL LATRINE.....3 NOT ROOFED TRADITIONAL LATRINE.....4 NONE.....5

#### SECTION D4: HOUSEHOLD ACCESS TO NEAREST SERVICES

<b>D4.1</b>		<b>D4.2</b>	
What is the distance to the following nearest services? (Kms)		What is the distance to the next nearer facility? (Kms)	
Input market		Input market	
Output markets		Output markets	
Health facility		Health facility	
School		School	
Financial services		Financial services	

#### SECTION E: LIVELIHOODS- AGRICULTURE

E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
----	----	----	----	----	----	----	----	----	-----

<p>Q: Did plant any crop in the last (2017/2018) season?</p> <p><b>CODES</b> YES...1 NO....2 &gt;&gt; Next section</p> <p><b>ENUMERATOR:</b> DO NOT LIST TEA, COFFEE OR ANY FRUITS.</p> <p>FIRST ASK THE HOUSEHOLD TO LIST ALL TYPES OF CROPS PLANTED DURING THE 2017/2018 RAINY SEASON.</p> <p>ONCE LISTING IS COMPLETE D, GO THROUGH THE ENTIRE SECTION FOR EACH CROP, ONE CROP AT A TIME.</p>	<p>Yes = 1 No = 2</p>	<p>Q: Was [CROP NAME] grown on the same plot with other crops?</p> <p><b>CODES</b> YES...1 NO.....2</p>	<p>Q: What was the area planted during the 2017/2018 rainy season? CODES FOR</p> <p><b>ENUMERATOR:</b> Before entering data into tablet convert area to hectare</p>	<p>Q: Was the area harvested less than area planted?</p> <p>CODES YES...1 NO.....2 &gt;&gt; B7</p>	<p>Q: Why was the area harvested less than area planted? READ ANSWERS</p> <p><b>LIST UP TO 3 REASONS</b></p> <p><b>CODES:</b> Drought...1 .....1 Dry spell.....2 Floods.....3 .....3 Strong winds....4 Locust.....5 .....5 Animals...6 .....6 Crop theft.....7 Diseases...8 .....8 Lack of hired labor.....9 .....9 Other (Specify)...10 ...10</p>	<p>Q: How much [CROP] you harvest during the 2017/2018 season?</p> <p>FOR ALL APPLICABLE CROPS, MAKE SURE TO ASK WHETHER THE REPORTED VALUE IS SHELLED OR UNSHELLED.</p> <p><b>ENUMERATOR :</b> Before entering data into tablet convert yield to Kgs</p>	<p>Q:How much [CROP] would you harvest in a normal rainy season?</p> <p>FOR ALL APPLICABLE CROPS, MAKE SURE TO ASK WHETHER THE REPORTED VALUE IS SHELLED OR UNSHELLED</p> <p><b>ENUMERATOR:</b> Before entering data into tablet convert yield to Kgs</p>	<p>Q: Did you sell any of the harvested [CROP] during the 2017/2018 rainy season?</p> <p><b>CODES</b> YES...1 NO.....2</p> <p>If yes &gt;&gt; B10</p> <p><b>ENUMERATOR:</b> Before entering data into tablet convert yield to Kgs</p>	<p>How much did you realize?</p>
Maize									
Other cereals									
Tobacco									
Cassava									
Other tubers									
Legumes/Pulses									
Other crops (SP)									

**SECTION F: HAZARDS AND DISASTER OCCURANCE**

**SECTION F1: HAZARDS OCCURRENCE**

	<b>F1.1</b>	<b>F1.2</b>	<b>F1.3</b>	<b>F1.4</b>		
ID	Type	Over the last five years, which of the following hazards have occurred in your area? <b>CODES:</b> 1. Yes 2. No	Identify the most 5 frequent hazards from the list presented in <b>F1.2.</b> <b>(Tick five)</b>	What are the main causes of each of the five key hazards mentioned in question <b>F1.3</b> ?  <b>Note:</b> Enter maximum of three main causes for each hazards in <b>F1.3.</b>  <b>CODES (Causes of hazards: Enter code number)</b> 1. Acts of God/ nature 2. Human activity 3. Climate change 4. Absence of, or inadequate appropriate by laws 5. Failure to enforce regulations ( Construction, traffic) 6. Settlement in unsafe places 7. Unsafe/unsustainable agricultural practices 8. Other (specify		
1	Droughts or dry spells					
2	Floods					
3	Fire outbreaks					
4	Strong winds (no rains)					
5	Rainstorm					
6	Hailstorm					
7	Landslide					
8	Earthquakes					
9	Human disease outbreaks					
10	Crop pests or disease outbreak (locusts and army worms)					
11	Livestock pest or disease outbreak					
12	Industrial accident					
13	Road accident					
14	Rail accident					
15	Lightening					
16	Civil disorder					
17	Construction accidents					
18	Others					

**SECTION F2: DISASTER OCCURRENCE**

	<b>F2.1</b>	<b>F2.2</b>	<b>F2.3</b>	<b>F2.4</b>	<b>F2.5</b>	<b>F2.6</b>	<b>F2.7</b>
ID	Type	Over the last five years, which of the following disasters have occurred	On average how many times did the disaster occur in a year?	Were you affected?  <b>CODES:</b> 1. Yes; 2 No	Which disasters affected you most? (Select maximum of 5 of disaster type in <b>F2.2)</b>	Are there any disasters that occurred in your area but did not affect your household?	Q6. Are there any disasters that are being more frequent over the past 10 years than previously?

		in your area? <b>CODES</b> 1. Yes; 2. No	Put number			If yes, list them from <b>F2.2</b>	If yes, select maximum of 5 disasters from G2.1  Rank most frequent. 1 being the most frequent and 5 least frequent
1	Droughts or dry spells						
2	Floods						
3	Fire outbreaks						
4	Strong winds (no rains)						
5	Rainstorm						
6	Hailstorm						
7	Landslide						
8	Earthquakes						
9	Human disease outbreaks						
10	Crop pests or disease outbreak (locusts and army worms)						
11	Livestock pest or disease outbreak						
12	Industrial accident						
13	Road accident						
14	Rail accident						
15	Lightening						
16	Civil disorder						
17	Construction accidents						
18	Others (SP)						

### SECTION G: HOUSEHOLD RESILIENCE

G1	G2
From disasters which affected you most see <b>SECTION F2.5</b> on previous page. Select maximum of 5 ways on how you mitigated or responded the disaster impacts.	<ol style="list-style-type: none"> <li>1. Engage in casual labour (ganyu)</li> <li>2. Participate in (cash for work or input for asset) public works programme</li> <li>3. Changing eating habits (reduce number of meals taken, eating less common/usual food items)</li> <li>4. Selling household assets</li> <li>5. Small scale business</li> <li>6. Stockpiling food items to be used during lean periods</li> <li>7. Fishing</li> <li>8. Relying on humanitarian aid (food, cash and other non-food items)</li> <li>9. Selling charcoal</li> <li>10. Sending children or other family members to live with friends or relatives away</li> <li>11. Sending children or other family members to work away</li> <li>12. Seeking treatment</li> </ol>

		<ul style="list-style-type: none"> <li>13. Construction of dykes and water diversion</li> <li>14. Fire breaks</li> <li>15. Winter cropping</li> <li>16. Irrigation</li> <li>17. Plant drought tolerant crops</li> <li>18. Diversifying crops grown</li> <li>19. Tree planting</li> <li>20. Construction houses with raised foundation</li> <li>21. Constructing strong houses that cannot be damaged by disasters (such as wind, fire and earthquake)</li> <li>22. Buying insurance for crops</li> <li>23. Buying insurance for house and/or household items</li> <li>24. Temporary relocation</li> <li>25. Permanent relocation</li> <li>26. Quarantine</li> <li>27. Vaccination</li> </ul>				
	<b>Disaster type</b>	<b>Mitigation option 1</b>	<b>Mitigation option 2</b>	<b>Mitigation option 3</b>	<b>Mitigation option 4</b>	<b>Mitigation option 5</b>
<b>1</b>						
<b>2</b>						
<b>3</b>						
<b>4</b>						
<b>5</b>						

**SECTION H: VULNERABILITY ANALYSIS**

	<b>H1</b>	<b>H2</b>	<b>H3</b>	<b>H4</b>			<b>H5</b>		
ID	Type	Do you consider yourself vulnerable to the following hazards? 1. Yes 2. No	What is the vulnerability severity?  <b>CODES:</b> Rank severity by (1,2,3,4,5) 1 less severe 5 extremely severe	If vulnerable what factors make you particularly vulnerable  <b>CODES:</b> Select maximum of 3 factors from of vulnerability below <b>(Enter codes from H6)</b>			If not vulnerable, what factors make you not vulnerable?  <b>CODES:</b> Select maximum of 3 factors of non vulnerability below <b>(Enter codes from H7)</b>		
1	Droughts or dry spells								
2	Floods								
3	Fire outbreaks								
4	Strong winds (no rains)								
5	Rainstorm								
6	Hailstorm								
7	Landslide								
8	Earthquakes								
9	Human disease outbreaks								
10	Crop pests or disease outbreak (locusts and army worms)								
11	Livestock pest or disease outbreak								
12	Industrial accident								
13	Road accident								
14	Rail accident								
15	Lightening								
16	Civil disorder								
17	Construction accidents								
18	Others state								
<b>H6: Codes for vulnerability:</b>		1. Poverty (or lack of access to resources); 2. Lack of knowledge; 3. Chronic illness; 4. Location in high risk area; 5. Age; 6. Disability; 7 Other (specify)							
<b>H7: Codes no vulnerability:</b>		1. Have capacity to protect myself when a disaster strike 2. Located in safer place 3. I have already taken precautionary measures 4. Other (specify)							

**SECTION I: DISASTER IMPACT**

**SECTION II: DEATH DUE TO DISASTERS**

NOTE: Not all disasters can lead to death

	<b>II.1</b>	<b>II.2</b>	<b>II.3</b>	<b>II.4</b>
I D	Type	In your household, did you lose people, as a result of the following disasters in the last 5 years?  1 for yes, 2 for no  If Yes	Did the deceased people had any disability before?  1 for yes, 2 for no	If Yes from II.3. How many of the deceased had disability before the disaster?

		Enter figure as segregated below Enter number as segregated below						Enter figure below
		Gender		Age				
		M	F	0-17	18-65	65>		
1	Floods							
2	Fire							
3	Strong winds (no rains)							
4	Rainstorm							
5	Hailstorm							
6	Landslide							
7	Earthquakes							
8	Human disease outbreaks							
9	Industrial accident							
10	Road accident							
11	Rail accident							
12	Lightening accident							
13	Civil disorder							
14	Construction accidents							
15	Food insecurity related casues							

## SECTION I2: MISSING DUE TO DISASTERS

NOTE: Not all disasters can lead someone to missing

	<b>I2.1</b>	<b>I2.2</b>	<b>I2.3</b>	<b>I2.4</b>
ID	Type	In your household, did people go missing, as a result of the following disasters in the last 5 years?  1 for yes, 2 for no	Did the missing people had any disability before?	If Yes from I2.3. How many of the missing had disability before the disaster?

		If Yes					1 for yes, 2 for no	Enter figure below
		Enter figure as segregated below						
		Gender		Age				
M	F	0-17	18-65	65>				
1.	Floods							
2.	Fire							
3.	Strong winds (no rains)							
4.	Rainstorm							
5.	Hailstorm							
6.	Landslide							
7.	Earthquakes							
8.	Industrial accident							
9.	Road accident							
10.	Rail accident							
11.	Civil disorder							
12.	Construction accidents							

**SECTION I3: INJURED DUE TO DISASTERS**

NOTE: Not all disasters can lead to injuries (other disasters removed)

ID		<b>I3.1</b>	<b>I3.2</b>	<b>I3.3</b>	<b>I3.4</b>
		Type	In your household, did some people to injured, as a result of the following disasters in the last 5 years?  1 for yes, 2 for no  If Yes  Enter figure as segregated below Gender                      Age	Did the injured people had any disability prior to disaster?  1 for yes, 2 for no	If Yes from <b>I3.3</b> . How many of the missing had disability before the disaster?  Enter figure below

			M	F	0-17	18-65	65>		
2		Floods							
3		Fire							
4		Strong winds (no rains)							
6		Hailstorm							
7		Landslide							
8		Earthquakes							
9		Human disease outbreaks							
12		Industrial accident							
13		Road accident							
14		Rail accident							
15		Lightning accident							
16		Civil disorder							
17		Construction accidents							

**SECTION I4: DAMAGED HOUSES**

NOTE: Not all disasters can damaged houses (other disasters removed)

	<b>I4.1</b>	<b>I4.2</b>	<b>I4.3</b>
ID	Type	<p>Has your house been destroyed in the last 5 years due to disasters?</p> <p><b>CODES</b> 1 for yes, 2 for no</p>	<p>If yes to what extent was your house damaged due to the following disaster in the last 5 years?</p> <p><b>CODES</b> Developed cracks.....1 Partly damaged.....2 Completely damaged.....3</p>

1.	Floods		
2.	Fire		
3.	Strong winds (no rains)		
4.	Rainstorm		
5.	Hailstorm		
6.	Landslide		
7.	Earthquakes		
8.	Industrial accident		
9.	Road accident		
10.	Rail accident		
11.	Lightening accident		
12.	Civil disorder		
13.	Construction accidents		

### SECTION I5: EVACUATION AND DISPLACEMENT

I5.1	I5.2	I5.3	I5.4
Has your family been evacuated due to the following disaster in the last 5 years?  <b>CODES:</b> 1 for YES 2 for NO	If yes in I5.2: Where were you evacuated to?  <b>CODES:</b> School 1 Church 2 Tents /camp 3 Others 4	Has your family been displaced due to disaster in the last 5 years? Or have you migrated from your village to due droughts?  <b>CODES:</b> 1. Yes 2. No	If yes in I5.3  What happened after you were displaced?  <b>CODES:</b> Sought shelter in same village...1 Relocated permanently in same village...2 Left village completely...3

### SECTION J: LIVELIHOOD LOSES

#### SECTION J1: AGRICULTURAL INVESTMENT LOSES

##### SECTION J1.1: CROP LOSES

NOTE: Not all disasters can lead to crop loses

J1.1.1	J1.1.2				
Have you lost any crops in the field as a result of the following disasters in the last 5 years?  <b>CODES:</b> 1 for yes; 2 for no	If yes, Indicate the hactarage lost for the following crops or crop groups below				
	Number of hectares				
	Maize	Other cereals	Cassava	Legumes/pulses	Other crops

##### SECTION J1.2: LIVESTOCK LOSES

NOTE: Not all disasters can lead to livestock loses

<b>J1.2.1</b>	<b>J1.2.2</b>				
Have you lost any livestock as a result of the following disasters in the last 5 years?  1 for yes; 2 for no	If yes, Indicate number of heads of livestock or livestock groups below				
	Cattle	Goats/sheep	Pigs	Poultry	Rabbits

## SECTION J2: PRODUCTIVE ASSETS LOSSES

NOTE: Not all disasters can lead to loss of productive assets

<b>J2.1</b>	<b>J2.2</b>						
Have you lost productive assets as a result of the following disasters in the last 5 years? 1 for Yes 2 for NO	If yes, Indicate the number of productive assets as below						
	Oxcart	Plough	Storage structure	Bicycles	Canoe	Radio	Mobile phones

## SECTION J3: OTHER LIVELIHOOD LOSSES

NOTE: Not all disasters can lead to loss of productive assets

<b>J2.1</b>	<b>J2.2</b>		
Have you lost other livelihoods sources in the past 5 years as a result of the following disasters? 1 for YES 2 for NO	If yes, How much in monetary terms did you lose from the following?		
	Forest	Small business/trading opportunities	Fishing

## SECTION K: DRM INSTITUTIONS, STRATEGIES AND KNOWLEDGE

### SECTION K1: EXISTENCE OF INSTITUTIONS

<b>K1.1</b>	<b>K1.2</b>	<b>K1.2</b>
Do you have (or are you aware of) any disaster risk management institutions in your area?  <b>CODES</b> 1 yes; 2 no	If yes, what DRM institutions are available in this area? MRQ  <b>CODES:</b> 1.DRM information centres 2.Hazards operation centres 3.Civil Protection Committees	If available in L1.2 Do you participate in the activities of such institutions?  <b>CODES</b> 1 yes, 2 no

	4.Village Natural Resources Management Committee 7. Others specify...	
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## SECTION K2: EXISTENCE OF INSTITUTIONS

<b>K2.1</b>	<b>K2.2</b>
Do you have (or are you aware of) any disaster risk management strategies in your area?  <b>CODES</b> <b>1 yes; 2 no</b>	If yes, what DRM strategies are available in this area? MRQ  <b>CODES:</b> 1. Hazards Monitoring and Forecasting Systems 2..Hazards maps and evacuation plans 3.Preparedness plans (contingency plan) 4 Others specify.....

## SECTION K3: DRM KNOWLEDGE PLATFORMS

<b>K3.1</b>	<b>K3.2</b>	<b>K3.3</b>	<b>K4.4</b>	<b>K4.5</b>
Do you receive any information on any aspects of disaster risk management? 1 yes, 2 no	If yes in L3.1. What are the five most common way through which you receive information about how to protect your family and prepare for disasters? (MRQ)  <b>CODES</b> 1. Television 2. Radio 3. Internet 4. Mail (postal) 5. Email 6. Public Meetings/Workshops 7. School Meetings 8. Traditional leaders 9. Local DRM committees 10. Other specify-.....	From L3.2. What do you consider to be the most effective information source on how to protect your family and prepare your home from disaster events?  <b>ENUMERATOR:</b> Select one of those selected in L3.2	Does your community have any indigenous way of disseminating DRM information?  1 yes; 2 no  If yes  What are the most common indigenous/traditional methods of disseminating information on disaster (MRQ)  <b>CODES:</b> 1. Beating drums 2. Whilstle blowing 3. Community gathering 4. Horn blowing	On a scale of 1 to 5, what is your level of awareness on the following aspects of disaster risk management?  <b>CODES</b> Not aware .....1 Somehow aware.....2 Aware.....3 Very aware..... 4 Extremely aware ....5

## SECTION L: DISASTER RELIEF SUPPORT

### SECTION L1: RESPONSE SUPPORT TYPE AND RELEVANCE

<b>L1.1</b>	<b>L1.2</b>	<b>L1.3</b>	<b>L1.4</b>	<b>L1.5</b>	<b>L1.6</b>
<p>When a disaster occurs, who usually provides support to those affected? Please choose the most common three.</p> <p><b>CODES:</b></p> <ol style="list-style-type: none"> <li>1. Government</li> <li>2. Non-governmental organisations</li> <li>3. Religious organisations</li> <li>4. Community-based organisations</li> <li>5. Family members</li> <li>6. Community members</li> <li>7. Private sector (business community)</li> <li>8. Political parties</li> <li>9. No-one</li> <li>10. Other (specify)</li> </ol>	<p>What kind of support is usually provided?</p> <p><b>CODES:</b></p> <ol style="list-style-type: none"> <li>1. Food items</li> <li>2. Non-food items for whole household use (clothes, plates, blankets)</li> <li>3. Temporary shelter</li> <li>4. Psycho-social support</li> <li>5. Cash</li> <li>6. Education materials</li> <li>7. Medical support</li> <li>8. Search and rescue</li> <li>9. Other (specify)</li> </ol>	<p>Did you receive any support as a result of disasters in the last 2 years?</p> <p><b>CODES</b> 1 yes, 2 no</p>	<p>If yes in L1.3 Was the support timely?</p> <p><b>CODES</b> 1 yes, 2 no</p>	<p>If yes in L1.3 Was the support adequate?</p> <p><b>CODES</b> 1 yes, 2 no</p>	<p>If yes in L1.3 Was the support relevant?</p> <p><b>CODES</b> 1 yes, 2 no</p>

### SECTION L2: RISK REDUCTION AND RECOVERY SUPPORT TYPE

<b>L2.1</b>	<b>L2.2</b>
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<p><b>H3. What are the most common type of risk reduction support that outsiders provide before disaster occurred? Choose up to five</b></p> <p><b>CODES:</b></p> <ol style="list-style-type: none"> <li>1. Early warning</li> <li>2. Safer house design and/or construction</li> <li>3. Afforestation and reforestation</li> <li>4. Public awareness campaigns</li> <li>5. Simulation exercises and drills</li> <li>6. Construction of dykes</li> <li>7. River training and/or dredging</li> <li>8. Provision of drought tolerant crops and livestock</li> <li>9. Provision of farm inputs</li> <li>10. Training and/or demonstrations on new farming methods</li> <li>11. Construction of evacuation centres</li> <li>12. Training to communities or local DRM committees</li> <li>13. Promotion and/or support for grain storage</li> <li>14. Other (specify).....</li> </ol>	<p><b>What are the most common type of recovery support that outsiders provide after disaster occurred? Choose up to five.</b></p> <p><b>CODES:</b></p> <ol style="list-style-type: none"> <li>1. Provision of drought tolerant crops and livestock</li> <li>2. Provision of farm inputs</li> <li>3. Training and/or demonstrations on new farming methods</li> <li>4. Promotion of village savings and loans (strictly geared towards DRR as opposed to towards general livelihood support)</li> <li>5. Training to communities or local DRM committees</li> <li>6. Promotion and/or support for grain storage</li> <li>7. Other (specify).....</li> </ol>
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**THANK YOU VERY MUCH**  
**End of Interview**  
**NOW CAPTURE GPS CORDINATES!!!!**

<b>GPS CORDINATES</b>	<b>LATITUDE:</b>
	<b>LONGTUDE:</b>

**8 APPENDIX 3: Institutional Questionnaire**

**SECTION A. GUIDELINES NOTES FOR SUPERVISOR/ENUMERATOR**

1. *Arrange and confirm appointment in advance with an appropriate official at the selected institution*
2. *On the day of interview, introduce yourself to the respondent, explain the purpose of the interview and ask if they are willing to participate the interview. If they are not willing to participate thank them and leave them*
3. *Please record all the responses within the interview session. Reserve some few minutes at the end of the interview to cross check the responses you have not clearly understood/recorded.*
4. *In this questionnaire, all questions that require multiple answers have been labeled MRQ, which means a multiple response question. All other questions that do not require multiple answers should have one response.*
5. *Ensure you fill out the questionnaire as completely as possible, so that gaps left do not affect the quality of the data*
6. *At the end of the interview thank the respondent for sparing their valuable time in providing the information*

SECTION B: CONTROL PANEL IDENTIFICATION

B.1	Name of the Interviewee	
B.2	Date of the Interview	
B.3	Name of Institution	
B.4	Email address	
B.5	Postal address	
B.6	Phone number	
B.7	Start Time:	End Time:
B.8	Name of interviewer	
B.9	Name of the supervisor checking questionnaire	
B.10	Date checked	

SECTION C. INSTITUTIONAL DRM STRATEGIES

SECTION C1: MAINSTREAMING DRM IN STRATEGIES

C1.1	C1.2	C1.3	C1.4	C1.5	C1.6
Do you have a DRM guiding framework at your institution? (strategy or guidelines) 1 YES, 2 NO If YES >> C1.2 If NO >>C1.3	How does your strategy in C1.1 complement the National DRM Policy?	Why not?	Do you have DRM mainstreamed in your strategic plans? 1 YES, 2 NO If NO >> C1.5	Why not	Is your education curriculum mainstreamed with DRM? [Applicable to the Ministry of education or education institutions] 1 YES, 2 NO

SECTION C2: DRM INFORMATION CENTRES

C2.1	C2.2	C2.3	C2.4	C2.5	C2.6
Does your organization or district have DRM information centres? [Applicable to DODMA; Environmental Affairs & DCCMS, District Council and DRM NGOs] 1YES, 2 NO, If YES >> C2.2 and C2.3	In which TA are the DRM information centres located?	What challenges do you face in running such DRM information centres?	Has your institution supported DRM information centres? 1 YES, 2 NO If YES >> C2.5 and C2.6	In which TA are the DRM information that you have supported located?	What kind of support did you give to DRM information centres?

SECTION C3:

DRM EARLY WARNING, PREPAREDNESS AND RESPONSE

C3.1	C3.2	C3.3	C3.4	C3.5	C3.6	C3.7	C3.8
Does your institution have Hazards Early Systems (EWS)? [Applicable to DODMA & Environmental Affairs & DCCMS & Districts, other DRM institutions]  1 YES, 2 NO, If YES >C3.2 to C3.4	In which TA are these EWS allocated?	What is the coverage of the Early Warning Systems in the TA that they are allocated?	What is the proportion of people that accessed EWS information last year in the covered area?	Do you have Hazards Maps in your districts? [Applicable Districts]  1YES, 2 No If YES >>C3.6,	Which TAs do the hazards maps cover?	What proportion of people have access to these Hazards Maps in the covered area?	Do you have Plans in your d [Applicable to  1YES, 2 No If YES >>C3.
C3.9	C3.10	C3.11	C3.12	C3.13	C3.14	C3.15	C3.16
Does your institution or district have Emergency Operation Centres [Applicable to DODMA, district]  1 YES, 2 NO If YES >>C3.10 and C.11	In which TAs are these Emergency Operation Centres located?	What challenges do you face in running these Emergency Operation Centres?	Has your institution ever supported Emergency Operation Centres?	In which TAs are these Emergency Operation Centres that you supported located?	What kind of support did you offer to these Emergency Operation Centres?	Does your institution or district have Hazard Contingency Plans?  1 YES, 2 No If YES >>C3.16	How frequent these hazard plans?

SECTION D: DRM PROGRAMS AND EXPENDITURE

D1. What DRM programs do you have and how would you describe their focus area?

D1.1	D1.2	D1.3				D1.4						
Project name	Location of project	Focus area				Beneficiary targets (gender, age and disability)						
		Mitigation/Prevention	Preparedness	Response	Recovery	M	F	0-17	18-65	>65	Yes	No

D2. What is the source of funding, period and amount for the DRM programs that (you have) are indicated in D1.1?

D2.1	D2.2	D2.3	D2.4	D2.5		
Project name	Location of project	Name of donor	Type of donor	Financing period and amount in US\$		
				Period (years)		Amount
				From	To	
			Foreign			
			Public			
			private			

SECTION E: HAZARDS AND DISASTER OCCURANCE  
 (APPLICABLE TO DISTRICT AND CITY COUNCILS. THIS INFORMATION  
 SUPPLEMENTS HOUSEHOLD DATA)

SECTION E1: HAZARDS OCCURRENCE

	<b>E1.1</b>	<b>E1.2</b>	<b>E1.3</b>
ID	Type	Over the last five years, have the following hazards have ever occurred your district? <b>CODES:</b> 1. Yes 2. No	If yes, identify the most 5 frequent hazards from the list presented in? E1.1
1	Droughts or dry spells		
2	Floods		
3	Fire outbreaks		
4	Strong winds (no rains)		
5	Rainstorm		
6	Hailstorm		
7	Landslide		
8	Earthquakes		
9	Human disease outbreaks		
10	Crop pests or disease outbreak (locusts and army worms)		
11	Livestock pest or disease outbreak		
12	Industrial accident		
13	Road accident		
14	Rail accident		
15	Lightening		
16	Civil disorder		
17	Construction accidents		
18	Others		

SECTION E2: DISASTER OCCURRENCE (APPLICABLE TO DISTRICT AND CITY COUNCILS)

	<b>E2.1</b>	<b>E2.2</b>	<b>E2.3</b>	<b>E2.5</b>	<b>E2.7</b>
ID	Type	Over the last five years, which of the following disasters have occurred in your district? <b>CODES</b> 1. Yes; 2. No	On average how many times did the disaster occur in a year?  Put number	Which disasters affected most people in the district? (Select maximum of 5 of disaster type in E2.1)	Are there any disasters that are being more frequent over the past 10 years than previously in your district?  If yes, select maximum of 5 disasters from G2.1  Rank most frequent. 1 being the most frequent and 5 least frequent
1	Droughts or dry spells				
2	Floods				
3	Fire outbreaks				
4	Strong winds (no rains)				
5	Rainstorm				
6	Hailstorm				
7	Landslide				
8	Earthquakes				
9	Human disease outbreaks				
10	Crop pests or disease outbreak (locusts and army worms)				
11	Livestock pest or disease outbreak				
12	Industrial accident				
13	Road accident				
14	Rail accident				
15	Lightening				
16	Civil disorder				
17	Construction accidents				
18	Others , specify				

**SECTION F: DISASTER IMPACT (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

**SECTION F1: DEATH DUE TO DISASTERS**

NOTE: Not all disasters can lead someone to death (others removed like drought and crop diseases)

ID	F1.1 Type	F1.2					F1.3 Did the deceased people had any disability before the disaster occurred?  1 for yes, 2 for no  If Yes  Enter figure below		
		In your district, how many people died, as a result of the following disasters in the last 5 years?  Enter figure as segregated below Enter number as segregated below							
		Gender		Age					
		M	F	0-17	18-65	65>			
1.	Floods								
2.	Fire								
3.	Strong winds (no rains)								
4.	Rainstorm								
5.	Hailstorm								
6.	Landslide								
7.	Earthquakes								
8.	Human disease outbreaks								
9.	Industrial accident								
10.	Road accident								
11.	Rail accident								
12.	Lightening accident								
13.	Civil disorder								
14.	Construction accidents								
15.	Food insecurity related casues								

**SECTION F2: MISSING DUE TO DISASTERS (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

NOTE: Not all disasters can lead someone to missing (other disasters removed)

ID	F2.1 Type	F2.2			F2.3 Did the missing people had any disability before the disaster occurred?
		In district, how many people went missing, as a result of the following disasters in the last 5 years?  Enter figure as segregated below			

		Gender		Age			1 for yes, 2 for no If Yes Enter figure below
		M	F	0-17	18-65	65>	
13.	Floods						
14.	Fire						
15.	Strong winds (no rains)						
16.	Rainstorm						
17.	Hailstorm						
18.	Landslide						
19.	Earthquakes						
20.	Industrial accident						
21.	Road accident						
22.	Rail accident						
23.	Civil disorder						
24.	Construction accidents						

**SECTION F3: INJURED DUE TO DISASTERS (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

NOTE: Not all disasters can lead to injuries (other disasters removed)

ID	F3.1 Type	F3.2					F3.3 Did the injured people had any disability prior to disaster?  1 for yes, 2 for no If Yes  Enter figure
		In your district, how many people got injured, as a result of the following disasters in the last 5 years?  Enter figure as segregated below					
		Gender		Age			
		M	F	0-17	18-65	65>	
2	Floods						
3	Fire						
4	Strong winds (no rains)						
6	Hailstorm						
7	Landslide						
8	Earthquakes						
9	Human disease outbreaks						
12	Industrial accident						
13	Road accident						
14	Rail accident						
15	Lightening accident						
16	Civil disorder						
17	Construction accidents						

**SECTION F4: DAMAGED HOUSES (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

NOTE: Not all disasters can damaged houses (other disasters removed)

ID	F4.1 Type	F4.2 In your district how many house were destroyed in the last 5 years due to disasters?	F4.3
			To what extent was your house damaged due to the following disaster in the last 5 years?  <b>CODES</b>  Developed cracks.....1 Partly damaged.....2 Completely damaged.....3
14.	Floods		
15.	Fire		

16.	Strong winds (no rains)		
17.	Rainstorm		
18.	Hailstorm		
19.	Landslide		
20.	Earthquakes		
21.	Industrial accident		
22.	Road accident		
23.	Rail accident		
24.	Lightening accident		
25.	Civil disorder		
26.	Construction accidents		
27.			
28.			

**SECTION F5: EVACUATION (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

NOTE: Not all disasters can to evacuation (other disasters removed)

	<b>F5.1</b>	<b>F5.2</b>	<b>F5.3</b>	<b>F5.4</b>
<b>ID</b>	<b>Disaster type</b>	<b>How many people were evacuated due to the following disaster in the last 5 years in your district?</b>	<b>Where were you evacuated to?</b>  <b>CODES:</b> School 1 Church 2 Tents /camp 3 Others 4	<b>What challenges do you face in evacuating people?</b>  <b>CODES:</b> No transport 1 No capacity 2 No evacuation centres 3 Late information 4
1.	Floods			
2.	Fire			
3.	Strong winds (no rains)			
4.	Rainstorm			
5.	Hailstorm			
6.	Landslide			
7.	Earthquakes			
8.	Industrial accident			
9.	Road accident			
10.	Rail accident			
11.	Lightening accident			
12.	Civil disorder			
13.	Construction accidents			

**SECTION F6: DISPLACED (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

NOTE: Not all disasters can lead to displacement (other disasters removed)

NOTE: Question for droughts is to do with migration from one location to another

	<b>F6.1</b>	<b>F6.2</b>
ID	Type	In your district how many people were reported to be displaced due to disasters in the last 5 years? Or migrated due to droughts?
1.	Floods	
2.	Drought	
3.	Fire	
4.	Strong winds (no rains)	
5.	Rainstorm	
6.	Hailstorm	
7.	Landslide	
8.	Earthquakes	
9.	Industrial accident	
10.	Road accident	
11.	Rail accident	
12.	Civil disorder	
13.	Construction accidents	

## SECTION G: LIVELIHOOD LOSES

### SECTION G1: AGRICULTURAL INVESTMENT LOSES (APPLICABLE TO DISTRICT AGRICULTURE OFFICIALS)

#### SECTION G1.1: CROP LOSES

NOTE: Not all disasters can lead to crop losses (other disasters removed)

	<b>G1.1.1</b>	<b>G1.1.2</b>						
ID	Type	Have many crop hactarage were reported lost as a result of the following disasters in the last 5 years?						
		Indicate the hactarage lost for the following crops or crop groups below						
		Number of hectares						
		Maize	Cassava	Rice	Sorghum	Legumes	Pulses	Other tubers
1.	Droughts or dry spells							
2.	Floods							
3.	Fire							
4.	Strong winds (no rains)							
5.	Rainstorm							
6.	Hailstorm							
7.	Landslide							
8.	Earthquakes							
9.	Crop pests or disease outbreak i.e. locusts and army worms							
10.	Industrial accident							
11.	Civil disorder							
12.	Construction accidents							



**SECTION G1.2: LIVESTOCK LOSSES (APPLICABLE TO DISTRICT AGRICULTURE OFFICIALS)**

**NOTE:** Not all disasters can lead to livestock losses (other disasters removed)

<b>G1.2.1</b>		<b>G1.2.2</b>				
ID	Type	How many livestock heads were reported lost as a result of the following disasters in the last 5 years in your district?				
		Enter heads of livestock or livestock groups below				
		Cattle	Goats/sheep	Pigs	Chicken	Others
	Droughts or dry spells					
	Floods					
	Fire					
	Rainstorm					
	Hailstorm					
	Landslide					
	Earthquakes					
	Livestock pest or disease outbreak					
	Industrial accident					
	Civil disorder					
	Construction accidents					

**SECTION H: IMPACT TO PUBLIC INFRASTRUCTURE AND SERVICES (APPLICABLE TO DISTRICT AND CITY COUNCILS)**

**SECTION H1: NUMBER OF TIMES PUBLIC INFRASTRUCTURE DAMAGED**

(SHOULD ALSO BE INCLUDED UNDER GROUP FOCUS DISCUSSION IN SELECTED VILLAGES – COMMUNITY VULNERABILITY)

<b>H1.1</b>		<b>H1.2</b>						
ID	Type	In your district, how many times were the following infrastructure damaged as a result of disasters last year? Enter number						
		Location	Health facilities	Education facilities	Road networks including bridges	Power supply infrastructure	Sewage infrastructure	Water Supply System Infrastructure
1	Floods							
2	Fire							
3	Strong winds (no rains)							
4	Rainstorm							
5	Hailstorm							
6	Landslide							
7	Earthquakes							
8	Industrial accident							
9	Road accident							

10	Rail accident								
11	Lightening accident								
12	Civil disorder								
13	Construction accidents								

SECTION H2: PERIOD IN WEEKS PUBLIC SERVICES WERE INTERRUPTED  
 (APPLICABLE TO DISTRICT AND CITY COUNCILS)  
 (SHOULD ALSO BE INCLUDED UNDER GROUP FOCUS DISCUSSION IN SELECTED VILLAGES – COMMUNITY VULNERABILITY)

H2.1		H.2.2									
ID	Type	For how long (in weeks) were the following services interrupted, as a result of disasters last year?									
		Location	Health care	Education	Transport	ICT Services	Water Supply	Sewage system	Solid Waste Management	Power/Energy	Emergency Response
ID	Type										
1	Droughts or dry spells										
2	Floods										
3	Fire										
4	Strong winds (no rains)										
5	Rainstorm										
6	Hailstorm										
7	Landslide										
8	Earthquakes										
12	Industrial accident										
13	Road accident										
14	Rail accident										

15	Lightening accident										
16	Civil disorder										
17	Construction accidents										

**9 APPENDIX 4: Focus Group Discussions Checklist**

COMPREHENSIVE BASELINE ASSESSMENT OF DISASTER RISK MANAGEMENT IN MALAWI

*My name is [.....] and I am part of a team engaged by IMDSA that been contracted by DODMA to conduct this study. All answers you provide will be confidential and will not be shared with anyone for any other use except for the purposes of this study.*

SECTION A. GUIDELINES NOTES FOR INTERVIEWER

1. *Introduce yourself to the respondents, explain the purpose of the interview and ask if they are willing to take the interview-see text above. If they are not willing to participate thank them and leave them*
2. *Make sure the interview should comprise of both men and female between 8-10*
3. *Let the respondents know that they are free to answer or not to answer any question during the course of the interview.*
4. *Ensure you ask all the questions completely. Leaving question an attended will affect the quality of the data.*
5. *Ask for the respondent’s consent to participate in the interview before proceeding with the interview*

SECTION B: LIVELIHOODS- AGRICULTURE

1. What are the main agricultural activities in this area/district? *(further probe on types of crops/animals as well as those for subsistence and commercial production*
2. Which food and crops do you normally grow in this area? Explain
3. How did your households meet their food shortfall when their own produced food from the 2016/2017 harvest season nearly ran out?

SECTION D: HAZARDS AND DISASTER OCCURANCE

4. Over the last five years, which hazards has mostly frequent occurred in this area?
5. What are the main causes of each of the most frequent occurred hazards mentioned above?  
(probe more)

6. Were this community affected and who were most affected and vulnerable to these disasters? (explain)
7. What losses were incurred as a result of the disasters? (probe focusing on livelihoods, assets, lives and social services)
8. How did the disasters affect the disabled?

**SECTION E: HOUSEHOLD RESILIENCE AND VULNERABILITY ANALYSIS**

9. From disasters which affected this area most and how you mitigated or responded the disaster impacts? (explain)
10. Do you consider yourself here vulnerable to hazards? If yes, what factors make you particularly vulnerable (explain)

**SECTION F: DRM INSTITUTIONS, STRATEGIES AND KNOWLEDGE**

11. Do you have (or are you aware of) any disaster risk management institutions in this area? If yes (please list them and their roles)
12. Do you participate in the activities of such institutions? If yes, what kind of activities
13. Do you have (or are you aware of) any disaster risk management strategies in your area? If yes, what DRM strategies are available in this area?
14. Do you receive any information on any aspects of disaster risk management in this area? If yes, what are the most common way through which you receive information about how to protect your family and prepare for disasters? (list)
15. What do you consider to be the most effective information source (from the list above) on how to protect community members and prepare your homes from disaster events?
16. Does this community have any indigenous way of disseminating DRM information? If yes, what are the most common indigenous/traditional methods of disseminating information on disaster in this area?

**SECTION J: DISASTER RELIEF SUPPORT**

17. When a disaster occurs, who usually provides support to those affected household in this area? (List them)
18. What kind of support is usually provided?(list)

**THANK YOU VERY MUCH**

End of Interview

**INTERVIEWER'S OBSERVATIONS**

Any comments about respondent

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Any comments about specific questions

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