DOCUMENTATION OF KNOWLEDGE, ATTITUDES, PRACTICES, AND CLIMATE INJUSTICES IN FOUR DISTRICTS (BALAKA, MACHINGA, CHIKWAWA AND ZOMBA)

STUDY REPORT

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CISONECC would also like to thank all the people at district and community level and all organizations that were consulted during this study for the support they rendered. They did not only give data and other related information to Climate Change, and the human rights in relation to Climate Change, but they also gave guidance where necessary on the issues that were essential. The exercise would not have been possible and meaningful had it not been for their tireless support and commitment to provide the needed information. In particular, special recognition should be given to colleagues from CADECOM Zomba, Mangochi, and Chikwawa, Eagles Relief, CARD, and CICOD for the fundamental support of front-line staff of these organizations, who were tireless in ensuring that all problems and potential issues were addressed and acted on. A lot of support came from the staff of Ministry of Natural Resources, Energy and Environmental Affairs, Ministry of Agriculture, Self Help Africa, Emmanuel International, ADRA Malawi and CRECCOM, we say thank you.

With reference to the main objective of this report, it is hoped that findings and recommendations presented in this report will provide CISONECC and CADECOM with the basis for further engagement with duty bearers and right holders in evidence based advocacy work to ensure institutionalization of effective and efficient climate change justice advocacy in Malawi.

Despite the fact that the study involved gathering data from a wide range of stakeholders and review of documents related to climate change justice, knowledge, attitudes and practices in many others places both at international and national level, the views and interpretation of information presented in this report are those of the author and not those of CISONECC secretariat.

To the many citizens and duty bearers in Balaka, Machinga, Zomba, and Chikwawa who took time from a long, busy day to participate in the documentation exercise, it is our sincere hope that the findings will contribute to programming that improves your well-being.

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ACRONYMS AND ABBREVIATIONS

ACPC	Area Civil Protection Committee
ADC	Area Development Committee
CADECOM	Catholic Development Commission
CARD	Church Action in Relief and Development
CBEWS	Community Based Early Warning Systems
CBDR	Common but differentiated responsibility
CBOs	Community-Based Organizations (CBOs)
CCPM	Climate Challenge Programme Malawi
CICOD	Circle for Integrated Community Development
CISONECC	Civil Society Network on Climate Change
CJAP	Climate Justice Advocacy Project
CRECCOM	Centre for Creative Community Mobilization
DCPC	District Civil Protection Committee
DoDMA	Department of Disaster Management Affairs
FGD	Focus Group Discussions
GHG	Greenhouse Emissions
GVH	Group Village Headman
KAP	Knowledge Attitude and Practices
NGOs	Non- Governmental Organizations
PSP	Participatory Scenario Planning
SCIAF	Scottish Catholic International Aid
T/A	traditional Authority
UNFCCC	United Nations Framework
VCPC	Village Civil Protection Committee

EXECUTIVE SUMMARY

Climate change result in widespread environmental, social and economic impacts worldwide, affecting sustainable human development and changing the way of life as we know it. This report presents the results of a Survey of Knowledge, Attitudes and Practices (KAP) towards climate injustices that was carried out from February to March 2019, in four participating districts. The districts were; Balaka, Machinga, Zomba, and Chikwawa. Two surveys were conducted concurrently in each of the participating district: Focus Group Discussions (FGDs) with communities and in-depth interview with targeted staff at institutions that work in climate-related sectors (i.e. duty bearers').

The data collected in the study focused on:

- Perceptions on climate change in relation to other problems;
- Perceptions on the seriousness of climate change;
- The extent to which duty bearers and communities feel informed about climate change – its causes, consequences and ways of fighting it;
- The extent to which duty bearers and communities feel informed about climate injustices – its causes, consequences and ways of fighting it;
- Attitudes towards climate change;
- Whether communities and duty bearers feel that climate change is stoppable or has been exaggerated, and what organizations in their country, including government agencies, are doing in relation to climate change;
- Whether residents have taken personal action to fight climate change; and
- What residents think should be done to deal with the consequences of climate change

Findings from the Study

Information gathered from informants across the various groups' shows that most of them were less knowledgeable about climate change. The more they have been involved in climate change-related projects and activities, the more they have learned about it. However, many of them had not yet grasped a broader understanding of the full climate change picture— cause (greenhouse gas emissions, global warming), consequences (flood, drought, disease), impacts on key sectors, adaptation mechanisms and practices. Most of the informants understood climate change from their personal observations and experiences of climate variability and disasters. Some technical terms such as global warming, greenhouse gases and ozone

depletion were very difficult for local people and those not working on climate change to understand. The study found that the majority of citizens and duty bearers never heard of the term climate justice. Those who have heard about it still could not define it correctly. In general, from their responses they have experienced some form of climate injustice in their life time. Some of the human rights that have been affected as consequences of climate change include: Right to life, the right to food, the right to water and sanitation, and the right to housing. The term "climate change" is better known by citizens, while "climate justice", and "climate injustice" are still not well understood because of their technical complexity and problematic translation into local languages.

Perceptions of causes and effects of climate change are not well understood, only relatively simple causes and impacts were noted, albeit small proportion of citizens have a low to medium level of comprehension related to climate change. This highlights the importance of promoting awareness and capacity to address climate change adaptation and disaster risk reduction and improving understanding of the causes and consequences of climate change and its impacts on human rights, livelihoods and other social and economic factors.

Climate change information dissemination, mainstreaming and integration at all levels are constrained by many barriers, most notably knowledge gaps, limited commitment and lack of human, technical and financial resources. However, there are opportunities for improvements in these areas including government commitment, making climate change a top priority, and wider access to information by all key stakeholders.

In terms of attitudes, citizens are aware that some of their daily activities can contribute to climate change. The activities they referred to are strongly linked to only agricultural production and unsustainable utilization of ecosystem services (e.g deforestation/charcoal making). The majority of the citizens were able to associate the more prominent changes they are seeing in their communities to climate change. Although a significant proportion of citizens are aware of some of the impacts associated with climate change and are able to identify some of these impacts within their communities, another major gap in knowledge appears to be a comprehensive understanding of what causes climate change. The study also revealed that more citizens across the target districts are noticing and responding to climate change. An encouraging finding is that citizens are prepared to do whatever it takes to help preserve the environment. Citizens were strongly concerned with how press and media cover climate change issues. The

majority of the citizens indicated that press and media is awash with climate-related information when natural disasters or extreme weather events strike. It is not surprising that citizens feel that they need more information on climate change – its causes and effects, and ways to combat (mitigation) or better prepare for it (adaptation). The findings showed that climate change was everyone's concern and individuals and community members should play a role in educating people about climate change.

Key Recommendations

In order to bringing the desired changes of Knowledge, Attitude, and Practices on climate change and climate justice this study recommends the following:

Civil Society level

- To enhance knowledge about climate change and injustice there is need to include emergent issues in the curricular for students to begin learning while they are still young, dissemination of Climate Change and justice information should be through using the appropriate extension methods that facilitate knowledge transfer, capacity building on Climate Change and Climate Justice should be based on local knowledge and evidence based.
- National resilient strategy should have proper implementation, cooperation and knowledge transfer plan which will ensure involvement of district and community structures.
- The survey on citizens and duty bearers on knowledge on climate change and justice should be simplified and rolled out across the country to have solid basis for advocacy.
- Climate change stakeholders should lobby hard for climate change and justice to be a central theme for all relevant policies and education curriculum.

Institutional level

- There is a need for mainstreaming climate justice issues in national climate change related policies and mainstreaming of Climate Change and climate justice issues at various levels from the government ministries, regional offices, district offices, and at community level.

- Climate justice principles should be cascaded to local level where climate variability and change is encountered to develop community-based adaptation measures that address climate injustices and translated to relevant local languages.

Community level

- The study recommends establishment of community-based early warning systems (CBEWS) by implementing participatory scenario planning (PSP) when downscaling weather forecast data to community level.
- Citizens and communities should be involved in formulation of climate change and justice policies, strategies and other framework.

1.0 INTRODUCTION

This **Knowledge Attitudes and Practices (KAP) Survey on Climate Injustices** forms part of a series of initiatives to be undertaken under the project titled, "Climate Justice Advocacy Project (CJAP)*"* which is currently being implemented by the Civil Society Network on Climate Change (CISONECC) in partnership with Catholic Development Commission in Malawi (CADECOM) with support from the Scottish Government through Scottish Catholic International Aid Fund (SCIAF) and Trocaire under the Climate Challenge Programme Malawi (CCPM).

Why such concern about climate injustices?

Climate justice is a term used for framing global warming as an ethical, political and economic issue, rather than one that is purely environmental or physical in nature. This is done by relating the effects of climate change to concepts of justice, particularly environmental justice and social justice and by examining issues such as equality, human rights, collective rights, and the historical responsibilities for climate change. A fundamental proposition of climate justice is that those who are least responsible for climate change suffer its gravest consequences. In view of this, the United Nations Framework Convention on Climate Change (UNFCCC) developed key principles to promote climate justice globally. Some of the principles include the Common But Differentiated Responsibility (CBDR) and the Polluter Pays Principle. The former connotes that in view of the different contributions to global environmental degradation, states have common but differentiated responsibilities while the latter was enacted to make the party responsible for pollution for paying for the damage done to the natural environment. The process of identifying climate injustices focus on analyzing all UNFCCC general principles from the local perspective linking them to issues of justice, equality and human rights. While the application of human rights law to climate change is still in its infancy, it is a fact that climate change interferes with the enjoyment of human rights recognized in international law. Human rights treaties do not address climate change explicitly, and climate treaties do not refer to human rights. Nevertheless, the contours of the relationship between human rights and climate change are becoming clearer. The process of identifying national and local climate injustices will therefore draw references to what is happening globally in terms of linking climate change to human rights. This will help to ascertain what aspects of climate change causes and effects are linked to human rights issues

and analyse perpetrators thereof. The identification of climate injustices will however target both the citizenry who are the rights holders and the duty bearers those that are bound to provide services either on business or social responsibility level. The process will also analyse the private sector to ascertain if their business operations are impinging on the communities from climate change perspective.

Why a knowledge, attitudes and practices Study?

This KAP study is a vital component of the activities related to the CISONECC and CADECOM response to climate change for three main reasons. First, Malawi as a developing country is facing the burden of having fewer resources (including financial, technological and physical land) to adapt to the effects of climate change; secondly, there is a strong body of evidence that attributes climate change to human activities; and thirdly, knowledge and behavioral change when combined represent a powerful adaptation strategy, which is central to reducing vulnerability to climate change and building resilience among people and within communities. In this regard, determining the extent to which duty bearers and citizens are aware of the possible implications of climate change for their livelihoods, community, and country, and the ways in which their current behavioral practices contribute to climate change is a vital imperative.

Unveiling the overall attitude of duty bearers and citizens towards reducing vulnerability and building resilience against related impacts at the community level are also important, since this will ultimately affect the long-term viability of any adaptation or mitigation strategy.

Caveats and study limitations

The study was designed as a rapid evidence assessment, requiring a systematic approach to review literature with emphasis on peer reviewed work that confer a measure of confidence in the quality of the study. However, much useful material from grey literatures (principally conference proceedings and reports) were also consulted to beef up the study. This is particularly the case for climate justice, which is a relatively new term and consequently has yet to develop a mature literature with widely recognized in local context. The study was done as planned. However, there were few challenges. The main one was limited budget which resulted into few stakeholders visited and interviewed. However, the findings from the people interviewed and

areas visited and also the project staff has provided adequate information into the insights of the situation in the target districts.

1.2 Objective of the Study

The main objective was to document knowledge, attitudes, and practices, and climate injustices in the four districts of the Southern Region of Malawi; Chikwawa, Balaka, Mangochi and Zomba.

Specific Objectives

Were to:

- Assess and documents the current levels of knowledge, including screening the attitudes, and the understanding of citizens' human rights in relation to climate change among duty bearers in the four districts of Balaka, Zomba, Chikwawa and Machinga;
- Assess and document the current levels of knowledge, including screening the attitudes and the understanding of citizens' human rights in relation to climate change among the citizens in the four districts of Balaka, Zomba, Chikwawa and Machinga;
- Assess and document the current climate change injustices and the reasons behind the malpractices among the citizens in the four districts of Balaka, Zomba, Chikwawa and Machinga;
- Compile unique case studies of the climate injustices that may have occurred in the four districts of Balaka, Zomba, Chikwawa and Machinga;
- Based on the analysis, provide recommendations for the improvement of compliance to citizens' human rights in relation to climate change among the citizens and duty bearers; and
- Based on the analysis, provide recommendations on the corrective actions for the climate injustices documented in the four districts of Balaka, Zomba, Chikwawa and Machinga.

2.0 STUDY METHODOLOGY

The KAP survey was implemented using a two-pronged approach: communities and duty bearers were interviewed concurrently in four target districts. The Participating districts for this KAP Study were: Balaka, Machinga, Zomba, and Chikwawa.

2.1 Primary data collection

a) Duty bearers' study

key Informant Interview: Duty bearers study involved in-depth interviews and self-administered questionnaire. Key Informant Interviews were conducted with key officials involved in the project implementation team at each district as well as implementing partners using a checklist. The duty bearers interviewed will included staff of the following organization: CADECOM Zomba, Mangochi, and Chikwawa, Eagles Relief, CARD, and CICOD, and influential district level sector officers (Director of Planning and Development, District Environmental Officer, District Forestry Officer, District Social Welfare Officer, District Agriculture Development Officer, DRM officer, Mitigation officer in DoDMA).

Self-administered questionnaire: A self-administered questionnaire was made available to duty bearers and members of staff in all relevant government departments, as well as relevant non- governmental organizations (NGOs) and community-based organizations (CBOs). The duty bearer survey was a non-probability survey, with a somewhat subjective sample of respondents (i.e. these individuals were not available for in-depth interviews). A greater challenge was the process of encouraging participation in the survey and this required a good deal of follow-up.

b) Citizens study

Citizen study involved a combination of focus group discussions and in-depth interviews to get a comprehensive insight into knowledge, attitudes and practices among the community as well as key stakeholders in the different sector on interventions in terms of climate change and justice awareness. A total of 16 Focus Group Discussions (FGDs) were conducted. Each FGD consisted of a minimum of eight (8) and maximum of 14 respondents. Participants for the FGDs were selected based on their availability and willingness to participate in the discussion and were recruited using a screener for eligibility that is age and gender. To guide the FGD, a discussion

guide was designed, and a qualified moderator was used to moderate the groups. FGDs were included during the assessment to gain more in-depth information related to climate change on knowledge, attitude, and practices.

c) Case study documentation

During the interviews with duty bearers, district implementation team were asked to identify at least 3-4 significant and unique climate injustice case studies in each of the four districts.

The identified cases were presented to communities to verify the cases and upon confirmation the communities were asked to narrate the story.

d) Data management and quality assurance

All the qualitative interviews will be audio-recorded, and participants were informed about the recordings at the start of their participation. The interviews were conducted in the local Chichewa language (except interviews with some of the duty bearers) and they were transcribed in verbatim and thereafter translated into the English language. Qualitative data coding and analysis was carried out using NVivo and Atlas-Ti software packages.

2.2 Organization of the Report

Hereafter, the report is presented in three Sections. Section 1 presents the research findings from the citizen component of the survey, while Section 2 presents the findings from duty bearers/staff members of institutions whose work is related in some way to climate change. Section 3 of the report concludes with a discussion of the key issues, which provides a launching point for designing a Climate Change Public Awareness and Education Campaign for the targeted districts and nation at large.

3.0 FINDINGS OF THE STUDY

3.1 Findings from the citizen survey

This section presents the results of 16 focus group discussion with communities in the four target districts. The study was designed to have 192 participants for FGDs (i.e 12 participants per FGDs). A total of 140 individuals participated from 4 districts in focus group discussions representing 73% this could be attributed to floods that occurred in some parts of Chikwawa district when the study was being conducted. Of the total number of respondents, 34% are from the Balaka District, 25% from the Machinga District, 20% from the Zomba District, and 10% from Chikwawa district respectively. The majority of the discussants, 67% are between the ages of 20 and 50 years while the male/female ratio is almost 1:1. It should be noted that both age and gender were two of the sampling criteria to ensure a representative composition of discussants.

3.1.1 Citizens' understanding of climate change and justice

The FGDs participants seemed to have clear understanding of climate change, its definition, causes and effect/consequences, especially those that have been trained various by NGOs. Also, not many of them could link climate change with human rights or explain the term climate justice in any way.

Almost every participant in the FGDs had heard of the term "climate change". The most common responses as it relates to participants understanding of what climate change is are changes in weather patterns and weather conditions (70% of participants), changes in temperature (10 % of participants) and extreme heat (30 % of participants). However, although participants were able to describe changes associated with climate change they were unable to properly define climate change.

> **Climate change is the change of rainfall pattern and having floods in our area.** ***(VCPC member Balaka)***

They seemed to relate climate change to its impacts rather than its definition. This indicates that citizens are aware of climate change and understand some of the impacts of climate change but do not have comprehensive knowledge of specific definition of what brings about these changes. This could be attributed to current efforts of communicating climate change are typically one-way and focused on disseminating information to raise awareness on climate

change and adaption pathways rather than a two-way approach focusing on knowledge co-generation, effectively integrating climate change scientific information with traditional knowledge and navigating different communication channels to initiate learning processes and knowledge transmission. Therefore, the mode of dissemination should also be improved to get the best out of climate-related knowledge and information and share it with all people.

Among those who had heard of climate change and some had heard about human rights. Among those who had heard of both climate change and human rights, most of them could not link climate change with human rights. Those who heard of both terms did not necessarily fully understand their real meanings or implications.

Human rights is having freedom to do everything in life *(ADC member, Chikwawa)*

Three quarters of the participants (75%) found it hard to understand what human rights is. Some thought human rights is the same as democracy. Moreover, the term democracy was being translated by participants in *Chichewa* as *"ufulu"* (freedom). Only those FGDs participants (15%) that have been deeply involved in several projects could elaborate on climate change and human rights, but still could not clearly link climate and human rights. Almost all respondents have not heard the term climate justice. However, as the discussions went on, FGDs participants indicated that they are experiencing the impact of climate change on their communities and were able to identify the most common impacts. The most common impacts of climate change on their communities, noted by participants, include; changing weather patterns (90%), stronger and more frequent dry spells (73%), and flooding (60%). These impacts were linked to low yield consequently food shortage (i.e right to food), houses being blown off and falling (i.e right to shelter and self-determination), roads being impassable thereby failing to go to school, and hospital (i.e right to health and education. Through this discussion, discussants were able to realize and grasp the link between human rights with climate change. The following are specific issues that demonstrates the grave consequences of climate change in relation to human rights.

> ***Right to life***: The village chief in Chikwawa highlighted that floods in his area have left a path of death and destruction, and claiming precious lives of his subjects, mostly in lowlands vulnerable communities. This threat extends to both present and future generations.

The right to food: During the discussion, several participants described the many ways in which climate change affects the enjoyment of the right to food. Village Civil Protection Committee (VCPC) member in Balaka in her remarks during the discussion said "damage to agriculture and food production caused by climate change effects (i.e. floods and pre-long dry spells) negatively impacts livelihoods, food security".

The right to water and sanitation: "The right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses." The participants indicated when it floods in their area are water sources become un safe because the sewage contaminates water, and this leads to water borne diseases such as cholera.

VCPC member said that when there is floods in this area "most boreholes are submerged and latrines collapse forcing the communities to resort to open defecation, posing a serious risk to water-borne, air-born and other vector-borne diseases, most notably Cholera and malaria which are common in the areas ".

Figure 1: House and toilet (with blue plastic) submerged in water

The right to housing: "the human right to adequate housing is of central importance for the enjoyment of all economic, social and cultural rights." All participants in FGDs highlighted that climate change threatens the right to housing in a number of ways. Extreme weather events can destroy homes displacing multitudes of people. Pre-longed dry spells, erosion and flooding can gradually render some farming fields barren/infertile resulting in displacement and migration. Floods also threatens the houses in low-lying areas and this threat is expected to "continue for centuries even if the global mean temperature is stabilized".

Figure 2: House submerged in low-lying area (left) and house demolished (right)

Case study: Right to Shelter

Mrs Elizabeth Limani from GVH's Magola, T/A Mwambo Zomba district. She was born in 1964 and she is married with 7 children's (3 boys, 4 girls). She is a beneficiary of Climate Challenge Programme Malawi (CCPM) project and she is feeling much heat of climate change effects these current years. Mrs Limani said that drought and floods are very common effects of climate change in their area. This year we have experienced floods in our area and as you can see my house destroyed.

I am very much worried about my house because I invest a lot money to buy cement to make my house strong to without floods but to no avail. The frequency of floods has increased in our area because Phalombe river is heavily silted and consequently shallower and if rains heavily in Phalombe and some parts of Zomba the rivers floods our area. The siltation of the river is not only to the other activities done by our community but our friends in Phalombe have cut down trees and are not following good agricultural practices (some are cultivating very close to the river). As a community we have embarked on re-afforestation and using energy saving techniques for cooking. However, she still feels that people from Phalombe should also do the same to conserve the environment for their efforts to bear fruits. This implies that if citizens in Phalombe district can conserve the environment, floods in T/A Mwambo area will be reduced.

Although a significant percentage of participants are aware of some of the impacts associated with climate change and are able to identify some of these impacts within their communities, another major gap in knowledge appears to be a comprehensive understanding of what causes climate change. Deforestation was identified by 80% of the participants as cause of climate change.

> Deforestation causes climate change, there were many trees in this area and we used to have rains from October to April and every year our rivers were flowing throughout the year and now because of these young ones have cut down the trees and the rains are erratic *(Elderly person Ntaja, Machinga).*

Figure 3: Focus Group Discussion underway in Mangula Village, Msanama, Machinga

Only 20% of the participants said that nature causes climate change, but it is not only the cause, linking it to human-induced causes such as: development, population growth, pollution by industries, and chemical fertilizers. In most cases the participants were not able to identify the more prominent causes of climate change such as burning fossil fuels such as coals, oils and natural gases, transportation such as driving a car, bus or boat (vehicle emission), and poor Industrial Practices suggested they were not well informed about climate change, except those that have been trained on climate change by NGOs.

FGDs participants indicated that they are experiencing the impact of climate change on their communities and are able to identify the most common impacts. The most common impacts of climate change on their communities, noted by respondents, include; changing weather patterns (91.9%), stronger and more frequent storms (73.1%), Increase in air temperature (73.6%) and flooding (71.7%). They may not grasp comprehensively the concept of and impacts of climate change but based on daily experiences are able to identify the major changes they feel are resulting from climate change.

Case study: Right to life

Mr Anderson Tambala, Matola Village, T/A Matola in Balaka. Mr Matola said one person was confirmed dead while hundreds of households were left homeless following floods in December 2018. Mr Tambala said a Form 4 school boy at Toleza Community Day Secondary School was swept by flooding water when he was trying to cross Liwawadzi when coming from school. This boy was expected to be writing Malawi School Certificate of Examination this coming June 2019. "it is very sad that we lost a life of a person due to floods.

Mr Tambala said it was so surprising to have such kind of floods in their area, saying they never been affected by floods for many years and attributed it to climate change. He further said that the community is alert as more floods might likely occur in the coming months. To avert further loss of life there is a need for early warning systems whereby communities should be able to alert other communities if there is imminent danger coming their way. Mr Tambala concluded by saying that "as you may be aware climate change is real and these are the results of it. We just need to intensify the planting of tree in our areas to avoid such disasters".

The participants said that climate change affects health (30%), agriculture (80%), water supply (34%), and infrastructure (53%). Agriculture was mentioned most frequently as an impact of erratic rainfall, pre-longed dry spells, pests (i.e. Fall armyworm), strong winds, and floods. Infrastructure especially houses was the second concern because floods and strong winds. Other participants linked climate change to water shortage consequently water borne diseases.

> **"Climate change affects several things in our area including food security via erratic rainfall and pre-longed dry spells, flooding destroys houses, roads and bridges consequently displacing people, making roads and bridges impassable**

affecting access to health services, education as the children fail to go to schools if there is floods and people fail to go to hospital" Village Chief

"Crops don't grow well, or they dry up because the rains are not adequate. We have noticed these changes and even our domestic animals are dying more now. In the past, when the rains used to come as expected, farming used to be easy but these days there's nothing much to be harvested because of the changes in the rain pattern" Community Member, Chikwawa

Case Study

"Malawi leader declared 20 districts disaster areas over armyworms"

The Fall Armyworms invaded crops in several countries in Southern Africa in 2017. Malawi among the countries affected. The Malawi leader Professor Arthur Peter Munthalika in turn declared 20 districts disaster area over armyworms in Malawi. A statement released by the Government of Malawi on 15th December 2017, said the disaster affected 20 of 28 districts in the country. The district were Balaka, Chikwawa, Karonga, Kasungu, Lilongwe, Machinga, Mangochi, Mchinji, Mulanje, Mwanza, Mzimba, Neno, Nkhotakota, Nsanje, Ntcheu, Phalombe, Rumphi, Salima, Thyolo and Zomba. Zomba is one of the districts in which was declared disaster area over armyworms.

According to the statement since the onset of the 2017/2018 cropping season and as at 8th December 2017, the Fall worms had affected thousands of hectares and 133,083 families in the process by the time the Government through the Ministry of Agriculture, Irrigation and Water Development started implementing and development partners' intervention to contain the spread and impact of the outbreak. In case of Zomba, the interventions were mainly provision of pesticides (i.e Dursban and cypermethrin) which was not enough to meet the demand. In picture are the fall worms and maize plant affected.

Mr Ibrahim Bwanali explained how the farmers were affected with the disaster in his field area (Mwananjovu Village) "most of the famers experienced poor germination and growth due to prolonged dry spells and, in rare cases where the seeds germinated, crops were attacked by fall army worms which has frustrated efforts of the developmental programmes." He added due to climate change especially the prolonged dry spells contributed to less or no crop harvest. Number of capacity building activities are being included in project and programmes to helping dealing with climate change.

The participants identified rural areas, poor people, women, children, older people, and people with disabilities as the most vulnerable to climate change. Rural people are the most affected because their occupations and livelihoods depend directly on climate-sensitive resources (water, land and ecosystem services). FGDs participants further emphasized that women, children, older people and people with disabilities are very vulnerable due to their household role and sensitivity to flooding, strong winds, and extreme temperature. The explanation that was offered by participants why women are more vulnerable than men because they are responsible for food and water, family wellbeing and financial soundness. This finding points to the need for gender-sensitive approaches and tools in climate change and resilience campaigns.

The participants also highlighted their communities have limited capacity to deal with and recover from climate change impacts. They also have limited access to early warning and severe weather information in time to prepare for extreme events.

> Our communities are most vulnerable to climate change impacts since we do not have adequate knowledge and education as well as means to cope with the impacts. Furthermore, our communities do not have equipment or means to alert our friends if there is danger.

FGDs participants in Balaka highlighted that they don't have access to weather forecast data that they can use to alert imminent likely risks for the coming season. But frontline staff from both public service and NGOs go around in their communities alerting of them imminent likely risks. However, these efforts amount to little if the warnings are not communicated effectively and in a timely manner. This challenge has been keenly noted by the Department of Disaster Management Affairs official "at the moment it is not clear whether the system is capable of generating and disseminating timely and meaningful warning information to enable individuals, communities and organizations threatened by extreme events to prepare in sufficient time to reduce the possibility of harm or loss". This finding further points to the need for PSP when downscaling weather forecast data to community level. Participatory scenario mapping stresses the need to involve local people (people that reside in local communities that are affected) in different stages of resilience intervention implementation and allow them to play a role in decision-making. Interventions are therefore well positioned in

contrast to 'top-down' climate and development solutions that have been criticized for marginalizing local people's concerns.

Participants were asked to select the top problems their communities are facing unemployment, and poverty top the list of most serious problems facing the communities that were visited during the study. There were, however, some minor variations in the degree to which these problems were weighted against each other. In Chikwawa the highest-ranking problem was unemployment while in Zomba, Machinga, and Balaka poverty was ranked highest. These differences are likely that in Chikwawa, employment is main livelihood due to proximity to sugar plantations. This finding points out that communities are affected by different issues.

Table 1: Community problem weighted scoring sheet

		Balaka		Machinga		Zomba		Chikwawa	
Problem	Weight	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score	Raw Score	Weighted Score
Poverty	20	4	80	4	80	4	80	1	20
unemployment	20	1	20	1	20	1	20	4	80
Climate change	20	1	20	1	20	1	20	1	20
Food security	20	1	20	1	20	2	40	1	20

	1	*2*	*3*	*4*
Key Raw Scores	issue affects <50% of the population	issue affects 50% to <65% of the population	issue affects 65% to 80% of the population	issue affects >80% of the population

In the course of the discussion participants were provided with a definition of climate change as **"the changes in weather patterns that have been observed in recent times."** Given this definition, respondents were asked to consider the seriousness of climate change. After clarification most participants considered climate change to be either a fairly serious or very serious issue. Community perception of the seriousness of climate change is higher when they perceived their communities were susceptible to natural disasters. The more natural disasters a respondent perceived the community to be susceptible to, the higher their concern for climate change was likely to be. Given the fact that the impacts of climate change are projected to increase over the next century, certain existing threats will intensify and new threats may emerge (https://www.nap.edu/read/10139/chapter/8). Increasing awareness and understanding of how climate is changing with an understanding of how those changes may

affect people can inform behavior change and adapting good practices to deal with effects and impact

The respondents listed important actions that should be implemented by their communities to adapt to climate change (Table 2). Many respondents cited awareness raising and education programmes. Other commonly cited responses included promoting income generating activities such as conservation agriculture, agro forestry and drought resistant crops such as millet, cassava, pigeon peas and sweet potatoes and lastly was to ban charcoal and timber business. The citizens described that the level of charcoal making in their areas is high which contributes to climate change.

Table 2: Practice regarding climate change

Practice	**% participants**
Awareness and public education programme	67
Conserve energy and natural resources	75
Increase reforestation	80
Disaster preparedness	40

3.2 Findings from the duty bearers survey

This section presents findings on duty bearers' knowledge, attitude on climate change and justice. It includes responses on general knowledge as well as specific factors contributing to or associated with climate change.

The duty bearers' component of the survey targeted at persons with authority in all sectors (i.e. Agriculture, Forestry, Natural resource and Environment) that can be affected by climate change. Each sector was equally represented among respondents, both across and within districts. Twenty-six respondents that were contacted with for in-depth interviews and self-administered questionnaire (Appendix 1). The highest percentage of respondents ,51.2%, have been residing in the district between 4 and 5 years. This is very important as they are likely to note impact of climate change hazards over time in their communities as well as are more likely to be motivated to act. Interestingly all respondents have heard the term climate change. The most common responses as it relates to respondents understanding of what is climate change, are changes in weather patterns and weather conditions (90%), changes in temperature (67%), and extreme heat (23%). However, although respondents were able to describe changes associated with climate change they were unable to properly define climate change. They understand that it brings about specific changes but the specific definition of what brings about

these changes was not provided by respondents. Greenhouse effect caused by the increasing concentration of carbon dioxide, and other greenhouse gases in the atmosphere was not a response provided by any respondent in the survey.

Although a significant percentage of respondents (76%) are aware of some of the impacts associated with climate change and are able to identify some of these impacts within their communities, another major gap in knowledge appears to be a comprehensive understanding of what causes climate change Most respondents 80% identified deforestation as the main cause of climate change. Only highly ranking government (20%) and NGOs representatives (30%) who have been deeply involved in climate change-related work could elaborate on other causes of climate change such as burning fossil fuels such as coals, oils and natural gases, transportation such as driving a car (vehicle emission. This is an important knowledge gap to address as duty bearers are expected to have a very good understanding of climate change.

Only 35% of respondents indicated that they heard the term "climate justice" from recently held training workshop and only 20% of the respondents were able to link climate change with human rights. For those who were familiar with climate change impacts on human rights said that "climate change poses a threat to several internationally recognized human rights, including the rights to food, a livelihood, health, a healthy environment, access to water and the rights to work and to cultural life".

I first heard the term climate justice during the recent training workshops (February 2019) and climate justice is "means recognizing that climate change has negative effects on most people in the world but impacts the poor and vulnerable the most – those who have done the least to contribute to the problem" NGO worker.

> **I know the term "climate justice" because I have attended a lot local and international workshops related to climate change, but my colleagues at my work place they don't know what climate justice is, Government Officer.**

Based on respondents understanding of climate justice above, the respondents believe that many duty bearers do not know what climate justice is and it is difficult for duty bearers to indicate or tackle climate injustice in their communities. To delve deeper into knowledge on climate justice, respondents were asked to provide brief notes on what climate justice meant to them locally and nationally. Responses are summarized as follows:

- Climate justice is for poor and rich countries (80%)
- Climate justice puts human rights at the centre of global development (10%)

- Climate justice could be by establishing community by laws (65%)

Based on respondents' knowledge portrayed above, there is need to cascade climate justice principles to scale where vulnerability is experienced. Climate justice principles need to be cascaded to local level where climate variability and change is encountered in order to develop community-based adaptation measures that address climate injustices.

3.3 Attitude to Climate change and Justice

This sub-section presents findings of duty bearers' attitude towards climate change and justice. It includes findings of duty bearers' level of concern, their perception on actions that communities can take to prevent or lessen the impact of climate change, their perception on actions being taken by them as national and community leaders and their willingness to take action to prevent or lessen the climate injustices.

More than 90% of the duty bearers are somewhat concerned or very concerned about climate change (Figure 1). Specifically, 77% of duty bearers were very concerned about climate change with another 19% being moderately concerned 4% were not concerned at all.

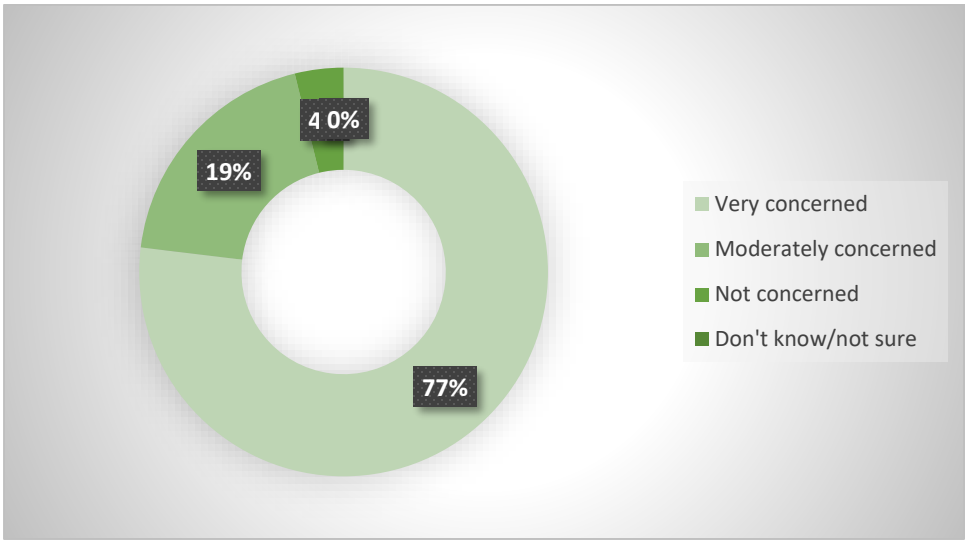

Figure 4: Frequency distribution of duty bearers responses to, How concerned are you about climate change?

Duty bearers' feel that the most important actions in helping communities to prevent the impact of climate change are; increase in public awareness (52%), encourage natural re-generation of forest (70%), increase reforestation (78%), river bank reinforcement with vegetation (15%), discourage construction of new settlements in low-lying area/flood prone

areas (30%), conserving energy and natural resources (45%) and encourage and promote community participation in climate mitigation and adaptation (64%).

There is mixed reaction on how duty bearers feel about action being taken at any level to address the impact climate change. Three-quarters of the duty bearers 75% strongly agree that them as duty bearers are taking action to address climate change impacts. The other group of duty bearers indicated that central government is taking action against climate change, but still there are still some challenges.

An encouraging finding is that 80% of the duty bearers indicate that they are prepared to do whatever it takes to help to raise public awareness on climate justice, after through training on climate justice. Most of the duty bearers who don't know climate justice indicated that they were eager to find out more about climate justice principles.

3.4 Practices related to climate change

This sub-section present findings related to practices to prevent or lessen the impact of climate change. It presents finding on actions taken by communities, actions taken by government and barriers to action by the community. Humans have been responding to changes in their natural and economic environment (Burke and Lobell, 2010) for many decades. For example, farmers may choose to expand agricultural production in response to reduced rainfall or to diversify types of crops grown to suit perceived dry spells (Boko et al, 2007). In the study area, there are currently different on-going practices that are based on what communities have been doing for many years as livelihood activities. These include crop production, fishing and harvesting forestry products. In some cases, newer measures have been put in place in response to changing environmental conditions. Some of the new interventions include adopting climate smart farming techniques. In this section we discuss in detail different practices used by communities in the study areas.

Crop production practices: Climate change has brought about severe and possibly permanent alterations to our crop production systems. In the study area, there are several problems associated with crop production as a result of perceived climate change and changing climatic condition (unpredictable rainfall patterns) was as highlighted as major one.

> "The time of planting has changed; farmers would plant as early as October but now most of them don't do that anymore. The majority plant in December because that is the time rains are seen. Moreover, we are noticing that maize, even though we have

> resorted to using improved varieties that adapt to these changes, is also not giving us good yields because rains are just inadequate" **Government Officer**

As result communities have devised coping practices in response to changes in the climate (Table 3). The coping practices used by communities in response to perceived change in climate include: diversifying crop production, changing varieties/crops (relying on drought tolerant varieties/crops), following good agriculture practices, using manures, and using environmentally friendly techniques such as climate smart agriculture practices.

Diversification is also seen through the adoption of new agricultural technologies that work best for the environment. One farmer revealed that:

> "We have started cultivating crops that do not require a lot of water such as millet and sorghum. We grow these crops as opposed to maize because maize is difficult to manage during dry spells" **FGD participant**

Climate smart agriculture approach is anchored in the principles of sustainable intensification of agricultural production (crops, livestock and fisheries) that is working on landscape level with an ecosystem approach that aims at reducing and removing GHG emissions from the atmosphere.

> "We are now showing farmers new methods of farming [such as conservation agriculture] so that even after farming, the environment is protected. So everybody is almost very conscious that we don't worsen the condition of our environment" **Government officer, Machinga**

Table 3: Actions being taken by community

Crop production practices	**Score**
Crop diversification	1
Changing varieties/crops (relying on drought tolerant Varieties/crops	1
Good agriculture practices	2
Using manures	1
Climate smart agriculture practices.	2

Key to scores: 1=Practice by <50%, 2=Practice by 50% to <65%, 3=Practice by 65% to 80%, 4=Practice by >80%

Livestock Production Practices: Livestock production is limited by a number of factors in different parts of the study area. Some of them include; lack of grazing areas and feed scarcity, lack of drinking water, lack of grazing areas and feed scarcity, lack of drinking water, lack of feed due to low crop yields, and lack of feed due to low crop yields. These challenges are

especially worsened because **dambo** areas (wetlands) where the animals could graze and get water are reserved for irrigation agriculture. The large animals—ruminants (cattle, goats and sheep) and pigs—are the most affected. Cattle and goats cope to feed pressure by tending to increase their grazing reach, leading to further loss of condition. As result communities have diversified livestock production, as a pathway to enhanced household income and resilience to climate change effects. It was noted that when farmers diversify their livestock species, their resilience to climatic shock could be enhanced

> "I started livestock farming in the year 2000 with just one goat and now my herd increased and diversified in terms of species. Some species such as Cattle are mainly used for cash while chickens and ducks are mainly used for food. The cash from the sales is used to pay school fees for children and the manure is used for crop production." **Female Livestock Farmer**

Natural resources conservation: With regards to utilization of ecosystem services, the majority of duty bearers and citizen mentioned that they use forestry products. This result is not unexpected considering that the majority of people, in Malawi rely on firewood and charcoal as major sources of fuel. The continued droughts and poor rainfall has also increased peoples' reliance on the forest as a means of sustaining livelihood.

> "We do not see any other means of surviving other than depending on charcoal burning and log making to earn a living. The government should come in and give us loans instead of just blaming us because charcoal burning is our only means of taking our children to school and earning a livelihood" **Charcoal Seller in Chikwawa**

This signifies that tree cutting is a significant trend now among people with no other alternative livelihood opportunities.

Communities have embarked on natural regeneration of trees as the way of achieving natural forest cover, because it has an advantage that survival rate of the trees is higher compared to plant new exotic trees (Table 4).

> "Since we established community by-laws on natural resources management in our village, now we have a community woodlot that is thick like graveyard" **VCPC member**

> "Prioritizing natural trees would also save resources as they are easy to manage. The only challenge is that people may want to reap the fruits of the trees immediately such that everywhere you go in the district you will see a larger percentage of neem trees being considered because they grow faster," **Government Officer**

Nevertheless, the Forestry Departments in all target districts have been sensitizing people about the importance of tree planting in their communities.

> "Most of the natural hazards we are currently facing as a district are because of climate change due to careless cutting down of trees. He further said that formulation of by-laws that will help trees planted grow as well as ensuring natural regeneration is the way to mitigate climate" **Government Officer**

Table 4: Action taken by community in relation to natural resource conservation and relative importance across districts

	Balaka	Machinga	Zomba	Chikwawa
Reforestation (planting trees)	3	2	2	3
Natural regeneration	2	2	3	3
River bank reinforcement	1	1	1	2
No cutting down trees/forest	2	1	2	2

Key to scores: 1=Not sure, 2=Important, 3=Very important

Figure 5: Tree Seedlings raised in Chikuya Village in Machinga as part of reforestation

3.5 Synthesis of study findings

Based on the findings from this study the following common things were captured across four target districts:

- Overall citizens and duty bearers are aware of climate change and its impacts. However, citizens expressed a limited understanding of climate change and consequently limited understanding of their human rights in relation to climate change. This indicates that climate change is not being systematically promoted as a package of scientific principles by duty bearers. The emphasis is on its effects with little emphasis on climate change technicalities.
- Overall duty bearers are aware of climate change and its impacts. However, the duty bearers (i.e. Government officers) expressed a limited understanding of climate change technicalities and consequently limited understanding of their human rights in relation to climate change. While NGOs workers were more conversant with climate change but still with limited understanding of the relation between human rights and climate change. This suggest that there is a need for formal institutional frameworks to incorporate capacity building of all stakeholders involved in climate change, especially in regard to climate change, and climate justice.
- Citizens and duty bearers are aware of the causes of climate change. Local deforestation was the most frequently identified cause in both surveys as the main cause of climate change. This finding suggest that issues of greenhouse emission are not emphasized during awareness campaigns and theses technicalities are vital the communities to grasp some of climate justice principles. This must be improved.
- Citizens are more focused on their own welfare and livelihoods. Overall citizens highlighted that poverty and unemployment the most important issues affecting their welfare and livelihoods. At the same time, the findings show these citizens have experienced increasingly variable weather and growing incidence and intensity of extreme weather and climate events. This suggests that awareness raising and communication need to focus on the causal links between climate change and human rights, well-being and livelihoods.

- The findings demonstrate the vital role of climate justice in climate change adaptation and the need to promote awareness and understanding of the synergies between the two. Importantly, to build local capacity for addressing both climate change and climate injustice, it is necessary to provide enough and clear information on the cause and consequences of climate injustices and its impacts on human rights.

- Citizen and duty bearers very much concerned with climate change and are also aware that their daily activities can contribute to climate change. The activities they referred to were strongly linked to only agricultural production and unsustainable utilization of ecosystem services. Again, depending on the level and scope of understanding about cause, consequences and impacts, some duty bearers said Malawi did not contribute to global climate change while others thought that it did through local deforestation. Both citizens and duty bearers were much concerned with climate change because our livelihoods are so much dependent on agriculture and other climate- sensitive sectors and our low adaptive capacity.

- Citizens still look at the government and NGOs to respond to climate change, and local authorities remain the most trusted sources of information on climate change. However, duty bearers seem to be pre-occupied with other urgent priorities. The prevailing situation indicates that most of the citizens that have learned climate change on their own that's why they have difficulties to understand climate change technicalities.

- The main barriers to climate change mainstreaming are related to lack of financial, technical and human resources and limited local institutional capacity. However, this study identified three important opportunities to enhance mainstreaming and integration of climate change issues into all levels of communication.

- Overall citizens and duty bearers are not aware of climate change related policies such as the National Climate Change Management Policy, therefore they are not empowered to advocate for their rights in relation to climate change as set out in National policies;
- The study also found that there were weak / non-functional community local governance structures to champion climate change issues such as Village Civil Protection Committee (VCPCs), Village Development Committee (VDCs), Village

Natural Resources Management Committee (VNRMCs) (e.g. Machinga); This leaves communities in a disadvantaged position to advocate for their rights and to access support to implement climate adaptation initiatives in line with current policies.

- Duty bearers indicated that there were weak linkages within local structures at district level (i.e VCPC, ACPC, and DCPC). This situation has left citizens at disadvantaged position to advocate for their rights and to access support to implement climate adaptation initiatives in line national policies
- The study also reveals that there is very little or no coordination among all the various actors and stakeholders that promote interventions to lessen the impact of climate change in the study area. In many instances, climate change activities are carried out in isolation by various actors and stakeholders. This has perpetuated disharmony between project implementers and citizens. This suggest that there is a need for harmonization of project implementation frameworks.
- A consistent theme throughout the study is the lack of comprehensive knowledge and awareness on climate change. It is not surprising that respondents identify increase in public awareness as the most important actions in helping communities to prevent the impact of climate change. With increase public awareness, comprehensive knowledge can increase thus increasing the general public's awareness of actions they can take to prevent or lessen the impact of climate change.
- An encouraging finding is that communities know what actions they should take to prevent or lessen the impact of climate change

4.0 CONCLUSIONS AND RECOMMENDATION

4.1 Conclusion

The results demonstrate a need for more systematic and strategic efforts to improve knowledge, attitudes and practices of integrating with climate justice in all climate change initiatives. Even so, this study identified some positive strides. Citizens are aware of "climate change", though "Climate Justice" is still not well understood due to their technical complexity and problematic translation into local languages. This finding was mirrored in both surveys; duty bearers and citizens. The perceived causes and effects of climate change were nearly identical in both surveys. All respondents noted only simple causes and impacts. These findings indicate that respondents have a "low" level of climate change comprehension.

- Levels of awareness of the issues related to climate change are high among citizens and duty bearers as indicated to responses related to the activities that impact climate change and environmental degradation; however
- Full knowledge/ understanding of the concept of climate change is lacking and needs to be addressed in a structured and concerted way using the public education campaign
- The respondents in the survey have a positive attitude towards the management of matters related to climate change at their personal/household and community level.
- Despite increasing, impending changes to the weather and climate in the target districts, citizens continue to engage in harmful practices such as burning charcoal and chopping down tress in their communities. Hence it is urgent to address these practices and offer community persons more readily adaptable alternatives to these practices.
- Based on respondents' perspectives on the issues of climate change, it is evident that a concerted effort is needed to educate those less aware of the phenomenon, its causes and likely impact. Decidedly, the planned campaign for building awareness, increasing knowledge and influencing good community practices regarding climate change is timely.

4.2 ***Recommendations***

In order to bringing the desired changes of Knowledge, Attitude, and Practices on climate change and climate justice this study recommends the following:

4.2.1 Civil Society level

- To enhance knowledge about climate change and injustice there is need to include emergent issues in the curricular for students to begin learning while they are still young, dissemination of Climate Change and justice information should be through using the appropriate extension methods that facilitate knowledge transfer, capacity building on Climate Change and Climate Justice should be based on local knowledge and evidence based.
- National resilient strategy should have proper implementation, cooperation and knowledge transfer plan which will ensure involvement of district and community structures
- The survey on citizens and duty bearers on knowledge on climate change and justice should be simplified and rolled out across the country to have solid basis for advocacy.
- Climate change stakeholders should lobby hard for climate change and justice to be a central theme for all relevant Policies and education curriculum

4.2.2 Institutional level

- There is a need for mainstreaming climate justice issues in national climate change related policies and mainstreaming of Climate Change and climate justice issues at various levels from the government ministries, regional offices, district offices, and at community level
- Climate justice principles should be cascaded to local level where climate variability and change is encountered to develop community-based adaptation measures that address climate injustices and translated to relevant local languages

4.2.3 Community level

- The study recommends establishment of community-based early warning systems (CBEWS) by implementing participatory scenario planning (PSP) when downscaling weather forecast data to community level.
- Citizens and communities should be involved in formulation of climate change and justice policies, strategies and other framework.

5.0 LITERATURE REVIEWED

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APPENDIX

Appendix 1: Pictures randomly taken during focus group discussion in all districts

Appendix 2: List of contact personnels for the study

	Name	Location
1	Tawong Kamanga	Balaka-District Disaster Office
2	Paul Muhosha	Balaka-District Forestry Office
3	James Jambo	Balaka-District Environmental Office
4	Denis Zingeni	Balaka-District Agriculture Office
5	Blazio Mphepo	Balaka-District Agriculture Office
6	Justin Hara	Balaka-Eagles Relief Office
7	Osborne Nyirongo	Balaka-Eagles Relief Office
8	Sosten Zulu	Machinga-District Agriculture Office
9	Yohane Maseko	Machinga-District Agriculture Office
10	Julio Chiwalo	Machinga-District Agriculture Office
11	Joster Muhalo	Machinga-District Met Office
12	Grant Mzembe	Machinga-CARD Office
13	Stuart Likoya	Machinga-CARD Office
14	Lenia Odillo	Machinga-CARD Office
15	Anastanzio Makhulula	Machinga-CADECOM
16	Jervis Mwenechanya	Machinga-District Environmental Office
17	Chancy Sibweke	Zomba-CADECOM
18	Gracious Kalenga	Zomba-CADECOM
19	Florence Mtepa	Zomba-District Disaster Office
20	Walter Chikuni	Zomba-District Planning Office
21	Emmanuel Bambe	Zomba-District Office
22	Amon Kabango	Zomba-District Forest Officer
23	Katte Mwalweni	Zomba District Environmental Office
24	Prince Malema	Zomba -Red Cross
25	Joseph Fatch	Chikwawa-CICOD
26	Jacquiline Munthali	Chikwawa-CICOD
27	Anthony Mangani	Chikwawa-CADECOM
28	Hector Nkawihe	Chikwawa-District Forest Office
29	George Chikoya	Chikwawa-District Agriculture