



FINAL REPORT (2016-2018) - ANNEXES

OUTPUT 03: EARLY WARNINGS REACH AND SERVE PEOPLE AT THE COMMUNITY LEVEL

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

- A02-3.2.1 EWS KAP Survey Report – Kariba (July 2016)
- A02-3.2.5 Early Warning Study Tour - Tanzania Report (Nov 2016)
- A02-3.2.6a CDRT Needs Assessment Report (Sept 2016)
- A02-3.2.6b CDRT Basic Training Report (Nov 2016)
- A02-3.2.6c CEWS Training Report (Nov 2016)
- A02-3.2.6d CDRT Refresher Training & Contingency Planning Report (Nov 2017)
- A02-3.2.7 Lake Kariba Emergency Response Simulation 2016, 2017 & 2018
- A02-3.2.8 Review of Community Early Warning System 2016/17 Report (May 2017)

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ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR

Knowledge, Attitude and Perception towards Early Warning Systems

Report for the project

**Mainstreaming Disaster Risk Reduction and Climate
Change Adaptation into Local Development Planning**

Project Area: Kariba Rural (Nyaminyami) District.

Compiled for the

Zimbabwe Red Cross Society

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GFDRR
Global Facility for Disaster Reduction and Recovery

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Executive Summary

The ZRCS, in partnership with the Danish Red Cross, is implementing a Disaster Risk Reduction and Climate Change Adaption project in rural Kariba (Jan 2016 to June 2018) with funding under the World Bank Global Facility for Disaster Risk Reduction grant.

The overall objective of the project is to enhance capacity of vulnerable rural communities in Kariba district to prepare for, mitigate and respond to recurrent disasters and the impact of climate change. One of the key pillars of the project is that the fishing community have access to early warning system (EWS) for adverse weather on Lake Kariba.

It is against this background that in May 2016 the ZRCS commissioned a KAP survey in an endeavour to ensure that the overall disaster risk reduction (DRR) and the community-based EWS component of the project is based on a proper understanding of the current level of knowledge, attitudes and practices of the target population. And this would enable the design of a community-wide knowledge and awareness activities build into the community-based EWS component to form an integral part of the disaster management and risk reduction initiatives aimed at saving lives and reducing economic losses.

The KAP survey noted that wildlife and winds are the major challenges affecting the three communities. Impacts however, appear to be intensified by the cultural beliefs and customs of these communities.

There are some institutions with presence in the area. These are; Red Cross, Matusadonha, Bumi Hills, Blembi Safari, the Zimbabwe Republic Police and the Parks and Wildlife Management Authority. To this effect, all the three communities indicated there is limited support towards information dissemination from the existing institutional arrangements, dating back a decade ago, mainly due to the economic challenges facing the economy and the resulting resource constraints.

The local indigenous knowledge system and practices mainly used across the three communities is based on observation of clouds and associating it with the strong winds. Equally, the country's leading network provider, Econet, provides network coverage in the area. The ownership and use of phones within the fishing camps differs. Almost 90% of the surveyed households had phones. However, in some cases it is the husband who uses it including carrying it when going for fishing. In some cases, fishermen wives kept the phones, while in some households with more than one phone, each partner uses the phone independently. The situation in the camps is complex yet reciprocal. Husbands who leave their phones at home, uses their friends to get hold of their family since they normally fish in groups. Equally, if a wife want to pass urgent information, she would contact the husband through his friends. In terms of gender, women were not totally left out from livelihood activities and the dangers associated with the lake although their fishing method differed (women used rods more than nets).

Having identified the highlighted concerns, the following recommendations were made:

- Given the weak link that exists between fishing communities and institutions that generate and disseminate weather forecast, there is need to make available meteorological data to men and women in fishing communities. This information being relevant to the local needs and easily understood by the local communities.
- More broadly, there is a greater need to develop Community Based Fishing Plans with a DRR angle that aims to improve safety measures for fishermen.
- The alarming rate of attack in the face of resource scarcity affecting response rate of the pre-existing institutional arrangements may require building local capacity in helping the victims as well as dissemination of information on safe fishing and good practices. Ideally, raising awareness and training for the fishing communities on the dangers of fishing during storms, winds and any weather conditions that might lead to loss of life or severe injury becomes critical.
- The presence of mobile network coverage across communities and fishing camps presents an opportunity for the use of mobile technologies to convey information across communities. There could be need to tailor and contextualise lake safety related information through mobile phones to the fishing communities regardless of the fact that they are not registered to avert disasters like deaths
- The existence of radios (though not being effectively used for getting weather information) in some pockets across fishing camps and communities creates another opportunity for the humanitarian players to exploit. In this respect, it can be recommended that organisation train communities to decode such weather-related information in as much as they encourage use of radios and mobile phones to promote information dissemination.
- Given that the attacks on people using the lake for domestic purposes is on the rise in as much as it is gender biased, there could be greater need to look for alternative sources of water for domestic purposes. In providing boreholes may lie the panacea to curbing the increase in attacks by crocodiles especially for the women who are traditionally engendered to doing domestic chores. This could be done through drilling of boreholes and servicing of the old ones (where they pre-existed) so that women and children do not have to go to the lake to fetch water and risk attacks from crocodiles

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List of Acronyms

AIDS	Acquired Immuno-Deficiency Syndrome
CUT	Chinhoyi University of Technology
EWS	Early Warning System
FGD	Focus Group Discussion
HIV	Human Immuno Virus
KAP	Knowledge, Attitude and Practice
PRA	Participatory Rural Appraisal
PWMA	Parks and Wildlife Management Authority
SADC	Southern African Development
TV	Television
UNISDR	United Nations International Strategy for Disaster Reduction
ZimVac	Zimbabwe Vulnerability Assessment Committee
ZRCS	Zimbabwe Red Cross Society

Introduction and Background

Introduction

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Situating the Project Area

The ZRCS Disaster Management Strategy is anchored on the need to empower communities and increase their capacity to prevent, predict, reduce the risk of, and respond to recurrent disasters. In partnership with Danish Red Cross, ZRCS received funding under the World Bank Global Facility for Disaster Risk Reduction grant to implement a 30-month Disaster Risk Reduction and Climate Change Adaption project in rural Kariba (1st Jan 2016 – 30th June 2018). This project targets 2,347 households in 3 at risk wards of Kariba rural – Mola, Negande and Nebiri with an estimated population of 10, 444. ZRCS commissioned a KAP survey as part of the project on which this report is based.

The purpose of this report is to provide an exposition of the hazards that local fishing communities face within the Kariba lakeshores, and make recommendations arising from the findings of the survey that may inform early warning education and awareness programme as well as a communications strategy. The KAP survey focused on the fishing communities in Msampa, Masviakabola and Sibilobilo (Mola Ward 3, Kariba District). Rural Kariba is at risk from multiple natural hazards, specifically from cyclones, tropical storms, flooding, droughts, outbreak of water borne diseases, marine accidents, environmental degradation, human-animal conflicts (crocodile and hippo attacks) and HIV and AIDS (ZimVac, 2010). However, this report focuses on the hazards that the fishing communities face as they engage in their everyday fishing activities.

Vulnerability to these hazards is exacerbated by high levels of poverty and weak infrastructure. Humanitarian agencies report that most vulnerable people in Kariba rural are

facing chronic humanitarian consequences, mainly due to poor access to basic services and livelihood opportunities, limited institutional capacity, limited knowledge on control of animal diseases, limited safe water sources and sanitation facilities and lack of early warning system. These issues, combined with socio-economic shocks, extreme weather conditions, influenced in part by climate change have conspired to exacerbate the vulnerability of communities in Kariba rural and progressively erode any of the small development gains that the communities might have achieved.

Specific objectives of the study

1. Identify and prioritize hazards¹ faced by target fishing communities in specific relation to fishing activities on Lake Kariba (and the rivers that feed it)
2. To understand the knowledge, attitudes and practices of at-risk fishing communities in relation to these hazards and towards existing² and future³ early warning systems.
3. To recommend strategies that would improve and build on the effectiveness of the current project design with regard to disaster risk communication and awareness raising.

Context of the study

Kariba district falls short in the provision of basic services and livelihood opportunities, limited institutional capacity, limited knowledge on control of animal diseases, limited safe water sources, to mention a few. These draw backs also exacerbate the hazards and vulnerability of the people, progressively eroding any sustainable developmental gains the community might have envisaged. Visible signs exist that climatic hazards are increasing across the globe (Madamombe, 2011). In Kariba district for example as noted in this report (see Chapter 3), dynamics in weather related disasters have shifted and intensified of late. These climate change induced hazards leave devastating effects on many households and disrupt the livelihoods especially of the fishermen and farmers sustaining themselves from the Lake. The sad scenario is that these people hardly if ever, have disaster management planning or early warning system information or mitigation measures in place in the event of hazards. Mushengera (2013) highlights an interesting but sad reality for the fishing communities in and around Lake Kariba that the government of Zimbabwe does not recognise the potential of these communities to engage in poverty eradication and food security activities, as are other fisheries around the world. For instance, The SADC Fisheries Protocol was signed in 2003 to promote the responsible use of fish and other living aquatic resources in the region to enhance food security and livelihood among fishing communities. All countries, except Zimbabwe, have ratified the protocol (Mhlanga et al., 2014). Fishing is regulated for each type of fishing through various licensing systems. However, low capital investment and weak enforcement of regulations tends to promote unlicensed fishing, which is deemed to be a threat to the natural environment. Together with the naturally occurring hazards, the small-scale fishing industry is therefore collapsing and giving room to corrupt practices. The lack of faith in fishing as an industry in sustainable development has shrunk the livelihoods of the local communities that are heavily dependent on the Lake.

¹ Including climate variability & climate change

² Including indigenous knowledge; and how, and through who, information and alerts flow within the target group (role of authority figures, social networks) and externally where they get this information from: TV and radio, phone, newspapers, relatives & diaspora)

³ For example, SMS-based or voice-based alerts

What is important for this study is that Early Warning System (EWS) have been driven by the advancement in seasonal forecasting technologies all over the world (Murphy et.al, 2001). This progression involves the provision of timely and effective information, through identified institutions (Mulugeta et al, 2007), so that the vulnerable communities (those exposed to a hazard) can take action to mitigate risk and prepare effectively for response (UNISDR, 2010). EWS are vital aspects as they not only reduce vulnerability and eventually poverty, but also enhance preparedness to untimely and naturally occurring phenomena like floods and drought. Considering the importance of EWS, it is rather unfortunate that its opportunities have not been fully exploited (Vermeulen et al, 2010).

Recently, Dinku *et al* (2014) realized that most rural communities in Africa do not receive information for early warning; even when they do, they do not know what to do with the information. The idea of EWS is that the information relayed is meaningful and prepares the vulnerable people and communities to be risk averse and know how to act (UNISDR, 2010). This stands as a huge draw back and challenge hence a need for awareness campaigns and education on weather forecasting and scientific knowledge on hazards is key. However, Mulugeta *et al*, (2007) highlights that the problem is not understanding hazards or early warning systems alone, but the provision of relevant education to the different levels of organization in a community (Individual, local level, community level, primary/high schools). A gender dimension to this knowledge dissemination is also highlighted as often missing in EWS.

Considering that the Nyaminyami district lies in the Lake Kariba zone, the main source of livelihood is fishing, supplemented by some crop and livestock production (especially goats). The fishing communities around the Lake have limited access to arable land and the introduction of laws that tend to be strictly enforced (fishing licenses and permits), the marginalized communities are now constrained from engaging fully to fishing (ZimVac, 2010). As a result of the deprivation in fishing access (possibly also emanating from declining fish catches due to overfishing and use of illegal gill nets) and poor crop yields for example, poverty is eminent amongst people in these communities. Wildlife is a major problem in the district, as reported in the Red Cross report of 2015 in the area. The small-scale crop production in the area ends up being food to wild animals especially the marauding elephants, which the Department of Wildlife controls to an extent, but not effectively. According to the ZimVac, (2010) report, the area faces strong winds that can cause fishing boats to capsize, as well as crocodile and hippo attacks that form the chronic and regular hazards to the fishermen. Periodically, the same report cites floods as being known to affect the zone, inundating fields and making fishing a dangerous livelihood, with drought also known to affect livelihoods. In terms of response strategies, the report highlights an increase in the donor syndrome, a reliance on gifts from neighboring communities and institutions and intense harvesting and selling of wild fruit.

Research methodology

Study area

Kariba is a district on the shores of Lake Kariba in Mashonaland West Province of northern Zimbabwe, along the border with Zambia. The constituency comprises 12 rural wards in Kariba Rural, also known as Nyaminyami Rural District, and 9 urban wards in Kariba Town, the district capital. Nyaminyami (Rural Kariba) district is remote and marginalized, consisting of communal lands populated either by Tonga and Shangwe people who were resettled from the Zambezi River when Kariba Dam was constructed in 1956.

In the study area, there is a prevalent seasonal rainfall pattern that is highly variable and barely amounting to 650 mm per year, with maximum temperatures above 40 degrees Celsius and rarely falling below 17 degrees Celsius. In addition, there are generally poor soils, which consistently culminate in poor yields for the locals. The situation is compounded by the topography which is largely not amenable to intensive agriculture (Murombedzi, 1992; Taylor, 1990. Nyaminyami district is Tsetse infested, a characteristic that makes livestock rearing almost impossible. Largely, only goats are kept by the communities. As a result, vulnerable communities tend to move from the communal areas into neighbouring fishing camps in search of livelihood.

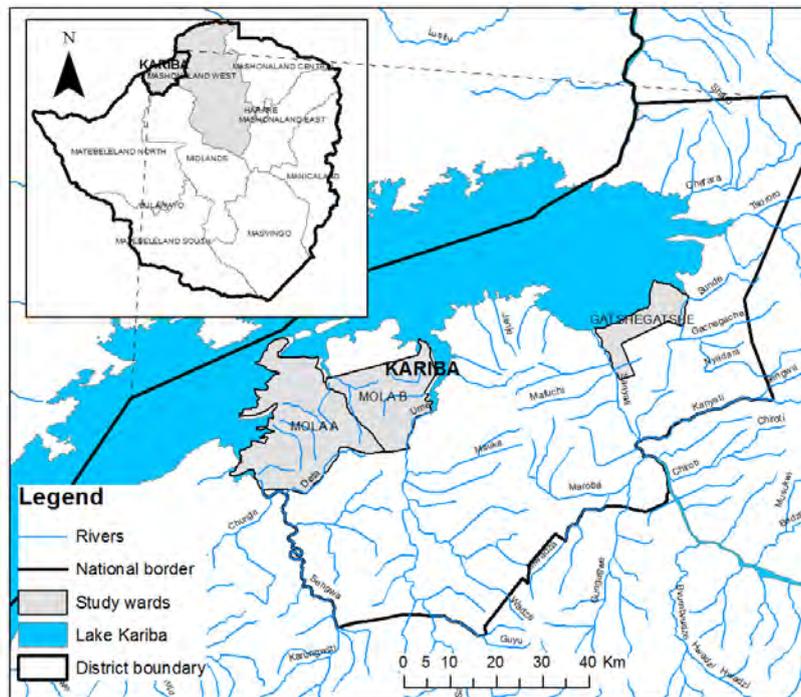


Figure 1: Location of the study area in Zimbabwe

Research design and methods

The data was collected in June 2016 by a team of female researchers from Chinhoyi University of Technology, (CUT) in a period of five days. The study employed the qualitative approach in relation to the specific objectives highlighted in the preceding sections. The qualitative research methods that were used include in-depth case studies, historical trend lines, and stakeholder analysis and Key informant interviews. In general, the project employed the Participatory Rural Appraisal approach (PRA) to capture knowledge, attitudes and practices of the fishing communities concerned in the context of hazards. The qualitative approach was complemented by a systematic literature review.

- *Brainstorming sessions* helped document the hazards that are faced by the targeted fishing communities. These sessions preceded historical trend line sessions (outlined in the next paragraph). The same session characterized and categorised these hazards as a starting point in terms of intensity and frequency of these hazards and who is affected most by these hazards (see Plate 1- Brainstorming sessions).
- *Historical trend analysis* helped to collect data on trends of hazards over a given period of time. This was based on changes regarding the initially identified hazards over time and what trajectories they have followed. Historical trend analysis also reflected with fishermen on the indigenous knowledge for dealing with hazards in order to understand knowledge, attitudes and practices towards early warning.
- *Matrix scoring and ranking* was useful for prioritisation of the identified hazards. The exercise entailed listing these hazards, developing criteria against which to evaluate them and allocating scores to these hazards based on the extent to which they affect fishing communities.
- *In-depth case studies* highlighted concrete experiences and narratives on what households know (knowledge) and perceive (attitudes) about how these households respond (practices) to the hazards that were identified.
- *Stakeholder analysis* assisted in understanding the various players around the fishing camps and what role they play. The specific actors include NGOs, Government institutions, norms and values (institutional arrangements), local business people and other players relevant to the policy and institutional processes).
- *Key informant interviews* were used to complement data collected through the preceding techniques. Some of the data include identification of hazards and their impact on fishing livelihoods, practices and strategies to respond to these hazards by households, communities and other stakeholders.

Informants and workshop participants included representation from fishermen and women, boat owners (registered and non-registered licence holders), family members (or others) left behind, and key influencers in the community (e.g. traditional leaders, elders, health volunteers). Inputs from men, women, elderly & youth & children were sought (e.g. the elderly particularly in relation to indigenous knowledge and the historical perspective to hazards).



Plate 1: Brainstorming sessions employed in Masviakabola, May 2016

Definition of important terms

- **Early warning** is the provision of timely and effective information through identified institutions so that vulnerable communities can take action to avoid or reduce their risk and prepare for effective response. Early warning is an element of disaster risk reduction as it prevents loss of life and reduces the economic and material impact of disasters (Mulugeta et al, 2007).
- **Hazards** are defined as threats that have the potential to harm people and the things they value and places (Cutter et al, 2009). Hazards are further categorized according to classes:
 - i. Sudden onset hazards are those that appear rapidly such as flooding or hurricanes, but last for a short time period ranging from hours to weeks.
 - ii. Chronic hazards are the very slow onset events that are barely perceptible by society such as drought or sea level rise, affecting populations incrementally.
- **Disasters** are singular larger scale events that overwhelm the local capacity to effectively respond to and recover from an event (NRC, 2006). Hazards and disasters have many origins, but are normally viewed as being caused by the interaction between society and natural systems (e.g. hurricanes) and between society and technology (e.g. chemical spills).
- **Indigenous knowledge systems** are used to describe the knowledge developed by a community as opposed to the scientific knowledge that is generally referred to as modern knowledge (Ajibade, 2003). Indigenous knowledge is arguably the basis for local level decision making in many rural communities in Zimbabwe.

Structure of the report

The first section focuses on introducing and giving a background to the study. Within this section, the report highlights the specific objectives and context of the study, definition of terms and the research methodology. This is followed by the findings from the study, which highlights the hazards, early warning and indigenous forecasting, among other aspects. The final section of the report presents a synthesis, conclusions and recommendations from the findings.

Knowledge, attitudes and perceptions towards hazards in selected fishing camps

Msampa Fishing Community

Characteristics of the camp communities

Msampa fishing camp is made up of households that originally come from other communal areas and therefore is made up of a diversity of people from diverse backgrounds. Some of these people moved to Msampa as early as 1984 and others as late as 2001 and later. Among the communal areas from which these people moved are Zvimba communal lands, Honde Valley, Gokwe and Omay communal lands. For some of these households, staying in the camp for them remains ‘temporary’ even though they have been in the camp for up to 34 years. This is the case especially for those fishermen whose families remained behind in their original rural homes (and this appears to be the case with the majority of the fishermen in this camp). In such cases, wives visit their husbands in the camps periodically and these fishermen also visit their families quite often.

Hazards and their impacts

Participants indicated that the major hazard to fishermen in Msampa is wild animals (see Table 1). While these participants highlighted elephants, lions, crocodiles and hippopotamus as dangerous animals they encounter, they indicated that it is mainly the hippopotamus and crocodile that they have to contend with. The risk of encountering wild animals is always greater than any other hazard. Another risk connected to the animal attacks is that of the fishermen being able to swim. These fishermen cannot learn how to swim as the only water body infested with crocodiles and hippos. This is a big risk considering that fishing forms the largest part of the people’s livelihood. In most cases, the fishermen drown after a hippo attack and end up being devoured by crocodiles. The implication is that of a paradox of the river as the main source of livelihood, yet also the main source of problems for these fishermen. In this context, the river becomes a double-edged sword.

Table 1: Hazards identified in Msampa

Hazard	Intensity	Damage	Disruption to Livelihood	Score	Rank
Animals (hippos, crocodiles)	9	10	10	29	1
Wind, strong waves	7	7	10	24	2
Boats – non-automated	5	7	3	15	3
Lack of fishing equipment, swimming failure, lack of information	9	3	3	15	3
Trees (Mopane and others)	2	2	0	4	5

Source: field notes May 2016

Winds appear to also be big threat to fishing in Msampa given the high rank, yet these winds are still not as dangerous and appear not to be an immediate and serious hazard given that no deaths have so far been caused by winds in Msampa. Winds are also considered to be less of a threat than the water based animals as fishermen are in some cases able to recognise signs that there may be heavy winds and make a decision to postpone fishing. The identified animals tend to pounce on a person without warning.

However, in Msampa there are testimonies which emphasise that winds remain a threat not to be ignored. One participant argued that wind in some cases also comes unannounced and this can be extremely dangerous and capsize a loaded boat, particularly the makeshift boats (90% of the boats at Msampa fishing camp are man- made steel boats), which they lack the waterproof and floating capacity that professional boat manufacturers use. Although the deaths due to wind capsizing of boats is low that often the boat and equipment is lost, severely impacting on household livelihoods in the short- and medium-term and in some cases casting the victims into chronic poverty from which there is no escape. The camp fishermen comfort themselves by saying, ‘...even the good boats have accidents too’. Participants reported that the increase in high intensity of impacts seems to be driven by the lack of observation of cultural beliefs and customs by chiefs. As a result, ancestors have meted punishment on these communities for failing to observe traditional beliefs and rites.

Community responses to hazards

In addition to individual efforts in times of hazards (see Table 2), some institutions in Msampa also intervene to assist camp fishermen (Table 3). However, perceptions towards these interventions highlight the need for more efforts towards this cause. These efforts centre on instituting early warning mechanisms and information of the lake weather conditions and building the capacity of these fishermen in life saving skills such as first aid, including early reaction from responsible authorities e.g. Parks and Wildlife Management Authority.

Table 2: Responses to hazards among Msampa communities

Hazard	Response
Hippo/crocodile	<ul style="list-style-type: none"> • Reduced frequency at the lake shoreline • Carrying of life jackets on fishing boat • Use of hired boats with tanks • Maximum alertness when setting nets late at night • Reduced use of the shoreline by women for domestic duties
Winds	<ul style="list-style-type: none"> • Paddling to the nearest island and wait until the winds subsides • Offloading the boat of a heavy load and following the direction of the wind • Shouting for help

Source: field notes May 2016

There are certainly institutional stakeholders tasked to address the human-animal conflict in this area however, useful as they are, their effectiveness has been affected by the economic downturn in the country which started at the turn of the new millennium. In this respect, in as much as they are alerted of accidents, resource shortages usually see their response coming a bit late to save the lives of the victims.

Lamenting the challenges being faced by the institutional stakeholders, women in Msampa noted that during the early 2000's, when people reported animal attacks or problems, the responsible authorities would come and kill the problem animal and inform people on how to deal with problem animals in the event of an attack.

One other sad development hampering the modern EWSs has been identified as the operation of high technology equipment. In this respect, a radio donated for communications between the lake captain and the communities in the previous two years has to date remained locked in the local schools' headmasters' office. The chief reasons given being that of lack of adequate facilities for its storage and operations.

Given these challenges, the community relies, to an even greater extent, on the indigenous knowledge systems. For instance, locals have realised that when a hippo attacks, it stays about a week at that particular spot so it is easy to identify it and kill it before it causes more deaths.

Early warning systems

The Msampa community reports that there is currently no formal and deliberate efforts towards information dissemination regarding early warning systems. In the past, the community recalls getting important information from the houseboats that would be passing through their vicinity. Currently, only registered Kapenta companies get information on conditions in the lake given that they have radios to communicate with Lake Navigation controls. This information only reaches Msampa in the event that there is a houseboat nearby, which is not very often. Small-scale fishermen on the lake do not receive this information unless they are close to either a houseboat or a rig.

On the other hand, and off the Kariba shores, information from NPMWA regarding the roaming of problem animals such as elephants does not get to the communities so often. On their part, the participants highlighted that the NPMWA are sometimes reluctant to share this information fearing that poaching activities may escalate.

Box 1: Reflections from fishermen on early warning systems in Msampa

'We do not receive information from anywhere on the condition of the lake. There could be a wild elephant roaming around, we also do not get such information from the Parks people. We do not work in base 1 when the month is starting because we anticipate strong winds during that time; we then concentrate on working near islands. We only get information when there is a houseboat near us, which is not very often. We desperately need a link with the lake captain in the form of a radio so that we are abreast with the condition of the lake at **all times**.'

These communities rely on their own indigenous knowledge systems and practices (LIKSP). Among the observations in Msampa is the observation of clouds associated with the strong winds from which people weigh the risks involved with getting into the lake at such a time. Less rainfall than normal is one of the indicators that the locals in Msampa use in predicting the coming of strong winds.

The community identifies winds that occur in the area by the direction they come from. The harsh ones come from the direction of Binga, Kariba, Sanyati and Zambia. Winds from the direction of Binga are known to cause casualties more often than not. Despite the community's ability to predict the months these winds are most likely to prevail, there were little indications of the predictability of these winds by shorter timespans as the day or hour. In some instances, they use animal sounds as an early warning for an impending danger in the community. For the community, a jackal crying signal that someone will drown. Whether these could be classified as early warning systems or systems does not matter much, what matters most is the allegations that these beliefs tend to cause disruption of family ties.

Box 6: Experiences with LIKSP and experiences from a key interviewee

In the days I came here, a jackal would cry and it would be exactly two days before an accident happened in the lake. This happened close to 15 times and we ended up associating the crying of a jackal with an accident. At one time, a houseboat dropped a mattress, which was picked up by some boys who took it aboard their boat not knowing that the mattress was soaked with water. Their boat sunk and the boys died, and this was after the jackal had cried the previous day. However, on the same day that the crying jackal died, an elderly lady also passed on, triggering a rumour that this elderly lady was the owner of that jackal. All the time the jackal had cried, someone would die and the old lady's grandson would catch a lot of fish. When both the old lady and jackal died, the young man quit fishing and packed up and left the camp.

When it rains a distance away, it usually takes us 30 minutes to an hour before we experience strong winds here. Information now travels fast within the household. We may have been selfish in sharing information before, but sometimes it just travels. At times the youths are stubborn and refuse to listen to warnings, but this is usually to their detriment. Sometimes we learn by observation, hippos normally stay by the river banks so we make sure we stay away from the bank. Hippos like to stay in murky waters; if you work there you surely get into trouble easily. Indigenous traditional knowledge systems work even in these times. Even dreams work, some people see danger in dreams (*zviratidzo*) before an accident happens.

Source: Msampa FGD, Field notes May 2016

In as much as these traditional early warning systems exist, their effectiveness is increasingly being questioned by the young generation. For one fisherman in Msampa, LIKSP are not always reliable as in some cases the wind just strikes without prior warning.

In addition, not everyone respects these cultural issues and some people tend to be sceptical, limiting people's interest to act in the interest of these local knowledge predictions. For instance, sometimes people stay away from the Lake, when they think there will be strong winds and nothing bad happens, limiting the reliability of the systems.

Some members in the camp also shun traditional beliefs due to Christianity, which tends to negate the role of indigenous knowledge systems as an important aspect in understanding the wind patterns impacts on the livelihoods of the communities. The wind occurrences are attributed to lack of observing traditional beliefs '*chikaranga*'. Chiefs in the area are said to have in the past been able to appease spirits every season yet this is no longer the case.

There are also a few pockets in the community who get bits and pieces of information from the modern EWSs. In some cases, they get general weather information from the radio (FM) but the challenge is that only a few people own radios and even then, few take time to listen to the weather reports. Most of the people who own radios listen to music instead.

Participants and some of the key informants indicated that they do have mobile phones which they generally use to communicate about conditions on the lake although this is not widespread. Wives who remain at home and other single women also have mobile phones. In fact, there is an indication that the greater proportion of the fishermen does have mobile phones. When there has been an attack of a fisherman by a hippo or crocodile, the chairman and other community leaders use their mobile phones to contact Parks and other stakeholders for help.

The rise of the cell phone technology and the community's access to the same technologies seem to have eased some of their communication challenges. Information on lake conditions also now travels fast within the households through mobile phones unlike before, although sometimes the youth do not pay attention to it.

Gender dimensions

While men in Msampa use boats and nets for fishing, women mainly use fishing lines or rods. Most of the fish that women catch is for domestic consumption whilst men's catches are at a relatively large scale and hence mainly for commercial purposes.

Essentially, by fishing from the shoreline, women are easy prey and targets and therefore more prone to hazards from hippos and crocodiles along the lake shores where they conduct most of their domestic activities. Despite this fact, the gender dimensions are worth emphasizing since they demonstrate that, the commercial fishing and boat-based trade is mainly a male dominated activity. However due to the changes in the climatic conditions women are emerging as fisherwomen so that they also contribute towards household survival. Fishing is therefore a pathway that is slowly becoming feminised, a trend which had not been evident in this community for decades.

Men in the camp realise the high risk involved in activities within the lake and therefore restrict their spouses from engaging fully in fishing activities. However, women in the camp remain vulnerable not only to the lake related hazards but also to widowhood, which is considered by the locals to be quite high due to increasing deaths in the lake. Women are left alone to fend for the family and in the process vulnerable to HIV and AIDS. Some of the widowed women end up migrating to the communal rural areas.

Sibilobilo Fishing Camp

Characteristics of the camp communities

A significant number of people in this camp originally came from Hurungwe District in areas such as Magunje and Kazangarare although some of them came from Kariba Rural from areas such as Mola, Negande and Siakobvu. They settled in this camp from around 1983 although some of them came much later. Participants indicated that the greater proportion of the people in this camp have actually settled permanently with their families although they still visit their relatives in their original homes once in a while.

Hazards and impacts

Sibilobilo scored wind more highly as a hazard than wild animals which was ranked second (see Table 4). Key informants recall how the Lake had taken many lives with a serious incident that happened in 2012. In this incident, two fishermen were coming from fishing in Chalala and were in the process attacked by a serious wind. Crocodiles and hippos interchangeably pose as another great hazard leading to increased attacks on boats

The impact of these hazards in this community have been so intense that people are afraid to go fishing because of the experiences of the attacked fishermen which are still fresh in their minds. Boats are usually attacked to an extent that they are usually no longer usable and in some cases, are never recovered from the water. There are cases where fishermen have been stranded in the lake for two days while the winds rage. These developments have left the communities without much in terms of livelihoods as they are afraid of death in the waters.

Table 4: Hazards identified by the Sibilobilo community

Hazard	Intensity	Damage	Disruption to Livelihood	Score	Rank
Winds	10	7	10	27	1
Hippopotamus and Crocodiles	8	5	9	22	2

Source: field notes May 2016

Community responses to hazards

Sibilobilo community takes a more passive approach to disaster risk reduction efforts (see Table 5) as they generally sit and do little to respond. A key informant highlighted that as a community they cannot do much except go and help with retrieving the bodies or remains of the dead in the water.

It seems the idea that the locals have no control of the hazards is imbedded in the whole community. They say that they cannot avoid these hazards as they have neither the means nor ways to deal with the hazards. Participants highlighted that internal early responses to attack calls could be a way to deal with the intensity of hazards and further highlighted the need for fibre boats which are strong to be used by fishermen, amongst others.

Table 5: Community responses in Sibilobilo

Hazard	Response
Wildlife	<ul style="list-style-type: none"> • Sit and watch without help • Use instinct at night to know where to set nets • change boat parking areas
Winds	<ul style="list-style-type: none"> • Observe winds and its movement • Use life jackets (current state is torn and not safe or reliable) • Take days off when winds are intense • Personal intuition/ gut feeling (to fish or not to fish)

Source: field notes May 2016

Institutional responses

This community does not relate or identify any institutions such as Bumi Hills, Matusadonha National Park, Local Council or National Parks as disaster management institutions. These organisations were reported not to be bothered at all when it comes to disaster management and help when hazards hit.

A thorn issue in the relations between institutional arrangements and communities has been the lack of trust which has seen the community complaining of alleged confiscation of twine fishing nets and engaging in corrupt activities. Mainly for the reasons of reselling confiscated nets.

Box 3: Thoughts regarding external assistance in hazard episodes

No institution/organisation helps us in anyway when we face accidents in the lake. We do report these accidents to the police but they hardly come. We try to hold our own search parties and to retrieve the dead bodies on our own, which is in most cases a futile attempt. In the end, we sit and wait for assistance without much of a choice. Absolutely no help is forthcoming from anyone. We also receive no information at all pertaining to the state of the weather at the lake, which is important for the survival of our fishermen.

Early warning systems

The Sibilobilo highlights challenges emanating from non-communication regarding the state of the lake from the Lake Captain. Participants were familiar with the Zimbabwean law, which initially stated that at 2:30pm every day, the Lake Captain would communicate with the houseboats or people in rigs. This happened from around 1980-1998, but has since stopped. This information would then be relayed to Kapenta fishermen who would in turn inform the locals. Nowadays, there is no access to information as the rig companies are now managed by black people who lack capacity to maintain these standards, according to the gathered reports.

This has left communities with no choice but to rely on their own traditional ways of predicting hazards. Seeing a certain type of clouds is associated with strong winds which normally follow soon after this observation, in which case fishermen avoid going to the Lake to fish. The community in Sibilobilo identifies wind as a hazard to the extent of being able to

name the various wind flows that pass through the area. They related to Kariba, Binga, Nyaodza, Ruzevha and Zambia as the names of the winds. Ruzevha is said to originate from the communal lands and being part of the strongest and most dangerous, together with Binga and Nyaodza. From the 1980s -2000s, winds were strong but they were more predictable hence people could manoeuvre around them, unlike now. In the older times, the locals reported that they could detect the months of the eruption of the winds (e.g. Ruzevha would come from September to October and be so intense that it could kill people). Nowadays the winds just come and act as a disruption. However, it was reported that it is not everyone who adheres to and believes in these systems. Sceptics in the FGD indicated that sometimes the winds do not come after observing and seeing those clouds.

They indicated in the FGD that the majority of the people in the camp have mobile phones and that they would appreciate receiving information on weather conditions on the lake through sms. In fact, they did indicate that almost everyone in the camp has a mobile phone, implying that the SMS as a platform to communicate this information would be feasible and useful.

Due to the nature of hazards and differences in gender responses to these hazards, women in Sibilibilo have devised their own LIKSP that they adhere to and these include but not restricted to:

- Making sure that they are near each other during fishing so as to help each other in cases of emergencies
- Observing the weather patterns, if the atmosphere is quiet, they do not go fishing
- Observing time; leaving for fishing early and coming back early
- Fishing is for household consumption and barter trade when winds are heavy (men will not be working).

Gender Dimensions

Considering the risks involved and continuous exposure to hazards, very few women in Sibilibilo take fishing as a commercial business as many fish for subsistence purposes. This was a very understandable situation as when researchers interacted with the community, they managed to relate to the dynamics of riverine livelihoods and the dangers that the fishermen are confronted with. One key informant highlighted the plight of women, especially single mothers in a community surrounded by water and dominated by men and how widowhood heightens vulnerability to the daily risks and hazards of the Lake. Women, more often than not, are attacked by crocodiles as they are more exposed than men whilst fishing (due to lack of boats, fishing skill, swimming abilities and utter panic), collecting firewood, and crossing rivers whilst escorting children to school especially in the Mola area.

The women found that the rate of attack has increased particularly in the drought years as more people are exposed to the Lake trying to earn a living and fend for their families. These attacks have shifted dynamics in that in the past, hippos would only attack in the Lake, yet nowadays they hide and attack from the shores, even going to extremes of chasing after children.

Masviakabola Fishing Camp

Characterisation of the camp communities

Participants indicated that settlers in this camp started coming into the camp as early as 1982 but some of them as late as 2008, a greater proportion of them originally from Mola. Some of them have built homes in Mola and only regard this fishing camp as their work place, with their families still staying in Mola. In this sense, this camp appears to be more 'temporary' than Msampa and Sibilobilo.

Hazards and Impacts: Masviakabola

In Masviakabola fishing camp, the locals identified winds to be a greater hazard whilst wild animals, particularly hippos, crocodiles, elephants and lions trail behind (Table 6). Water dependant animals (crocodiles and hippos) are most intense hazards hitting the area. Crocodiles and Hippos have not caused any deaths in the area but many casualties, in as much as nets and boats are damaged when these animals attack. This affects the livelihoods of the fishermen (poverty) as they have to start crafting reserve nets from the damaged ones and crime rates in the camp tend to increase.

Table 6: Hazards identified in Masviakabola community

Hazard	Intensity	Damage	Disruption to Livelihood	Score	Rank
Winds	10	10	5	25	1
Hippopotamus and Crocodiles	7	7	9	23	2

Source: field notes May 2016

The community believes that the population of the hippos and crocodiles has increased as evidenced by the increase in animal attacks on fishermen since 2005.



Plate 1: Crocodile attack scars one fisherman in Masviakabola

Mr Muyambi Muchindu, the Chairman in Masviakabola attributes the hazards and their intensity to the new lifestyle people have adopted and forgetting to appease culture spirits. He says that in the olden days, people used to appease the spirits time and time again before the fishing season commenced but nowadays it is no longer happening.

Winds in this area are predictable and also easily identifiable by name, although Siyavona seems native to this area only. The intensity of the winds also causes boats to capsize, leading to attacks by animals and damage to boats and nets. This wind can get so intense as to uproot trees which can fall on houses, causing destruction and sometimes even deaths.

Community responses to hazards

Women as family caretakers take part in gardening activities to compliment the fishing that men do but animals like baboons go on and attack the yield as well. In that light, the women just end up sitting and not doing anything (depend only on fishing as a source of food and income). The women have also resorted to doing their daily chores such as laundry, bathing and doing dishes at home and not in the Lake as this has higher risks of attacks by crocodiles.

Table 7: Community responses in Masviakabola

Hazard	Response
Wildlife	<ul style="list-style-type: none"> • Wearing life jackets (even if a person dies, remains are easily located) • Anchoring boats by stones so that fishermen can sleep in boats to avoid attack from animals • Women starting vegetable gardens and no longer frequenting the Lake
Winds	<ul style="list-style-type: none"> • Seeking shelter in the island • Following direction of the wind • Men can swim, climb trees and shout for help • Moving in groups so as to help each other in times of crisis

Source: field notes May 2016

However, these responses are not entirely from women, men also resort to seeking shelter in islands and moving in groups when they leave the camp to go for fishing further in the lake. The community in Masviakabola identifies seeking shelter on a nearby island, among other measures taken to hide from wind and wearing life jackets as the most important response to wildlife as a hazard (Table 7).

Institutional responses

The Masviakabola community stated that only those institutions involved in Kapenta rigs help them (if and when they do meet) with information on the state of the lake. Community’s interaction with the institutional arrangements, when attacked, in the past seem to have shaped their construction of reality around getting information from the same. The community ow has the feeling that their cries seem to fall on deaf ears.

The community claims that the local council only take action after more than four people have died from animal attacks. For the community, the Council prefers to help animals more than helping people. Equally the community has the same sentiments towards the PWMA and the Safari operators who are alleged to see the locals as poachers.

Early warning systems

Masviakabola fishing camp does not receive information from the Lake Captain, but gets some information from the Lake Kariba Research Institute. They are encouraged to wear life jackets, with the Police also arresting and putting those without life jackets behind bars. The cost of the life jackets are by local standards quite prohibitive at \$35. The Masviakabola community is said to manage hazards and impacts by encouraging each other not to get into the lake during strong winds. Participants recall that winds have become much more predictable compared to 2012 and before. As from 2012, winds come and settle on the lake for more than one continuous day and people know not to go fishing in such cases.

Since the Lake Captain stopped sending weather information after 1990, locals in Masviakabola have resorted to traditional practices as early warning systems. Cloud cover and increased cloud activity signals strong winds. When the horizon becomes red, the locals in Masviakabola know they cannot fish that day, and use of trees and leaves rustling and whistling also serves as an indicator of some sort. The water in the Lake is said to look as if the Lake is full when there are winds. The above signs are all indicators signal danger in the lake.

Gender dimensions

Women in this camp are more risk prone than men as they also go fishing in boats. A belief exists amongst the people that crocodiles do not like pregnant women hence if one is in that condition, they have to shout when they are in the water otherwise they get attacked. Because animals seem to attack even when they are out of water (even whilst collecting firewood), women end up not engaging in livelihood activities, while concentrating on traditional household chores at home.

There were concerns raised by the communities to the effect that women leaving the fishing communities and married to the fishermen are more prone to the effects of the hazards associated with fishing. This calls for action at creating gender based platforms for managing natural disasters associated with fishing in the lakes.

Synthesis, conclusions and recommendations

Hazards and impacts

The impacts (Figure 4) affecting the three communities revolve around the major hazards (wind and wildlife- hippos and crocodiles) which are prevalent across all three camps (see Figure 1). Impacts however, appear to be intensified by the cultural beliefs and customs of these communities. Msampa community had the most traditional ideologies and belief systems (superstitions) with the other two attributing hazards more to mere incidents. Community perspective also seems to be playing a role in determining the intensity of the identified hazards.

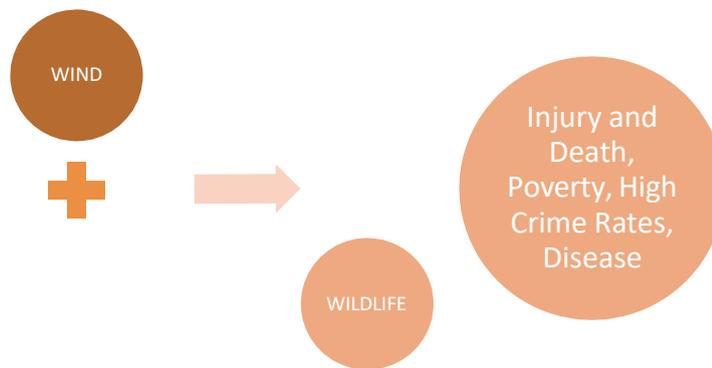


Figure 1: Illustration of the main hazards (left) and impacts (right) of the hazards in Msampa, Sibilobilo and Masviakabola fishing camps

Responses to hazards

Community responses were varied amongst the three communities with Msampa, reiterating that even though they did a lot of self-help, several institutions have also come to their aid. These institutions included Red Cross, Matusadonha, Bumi Hills, Blembi Safari, the Zimbabwe Republic Police and the Parks and Wildlife Management Authority. Sibilobilo community however seems to take a more passive approach in response to hazards. They basically have the notion that even if they do something, hazards will still occur, so they end up not bothering (sit back and let nature take care of itself). The latter community also does not identify with any institutions as being of any help in response to hazards.

The community in Masviakabola identifies seeking shelter on a nearby island, among other measures taken to hide from the wind and wearing life jackets as the most important responses to wildlife as a hazard. This community, although receiving some help from Kapenta rig companies in response to a disaster sometime, has also become self-dependant as responsible authorities hardly answer to pleas for assistance. This synthesis highlights the important role that institutions can play in complementing local-level climate-resilient efforts through provision of required response services

Early warning systems

Unfortunately, all 3 communities indicate no support towards information dissemination from the Lake Navigation control or the Lake Captain, dating back a decade ago. Only registered companies and rigs get information as the locals do not have radios to communicate with Lake Navigation controls. Masviakaloba community is the only one amongst the three that reports getting some information from Lake Kariba Research Station, however little. The LIKSP mainly used across the three communities is the observation of clouds and associating it with the strong winds from which people either go into the lake with knowledge of the risks or ultimately do not get into the lake to fish. This brings in the importance of traditional indicators in complementing modern information for dealing with hazards along the lake.

Gender Dimensions

Women were not left out from this practice although the fishing method differed (women used rods more than nets), the reason (women fish for subsistence) and scale also decreased when it comes to women. Greater care was stressed for women fishers to be safe when near and in the water. Some even faced penalties of fines when it came to entering the Lake without proper gear like life jackets.

Women and men play different roles in fishing communities within the researched communities, however in all communities the failure to engage women in management efforts results in lost opportunities to improve conservation practices and ensure secure, viable livelihoods. This is because women are custodians of the natural habitat including the capacity to deal with large water bodies.

Amongst all three communities, communication was identified as the biggest issue that needed urgent attention. Market for fresh fish was also a cause of concern amongst the people such that they have no option but to dry all fish captured.

Most conservation and fisheries resource management efforts reviewed have focused on extractive processes and, to a much lesser extent, consumer-based approaches, without complete understanding of the economic, social and cultural dynamics of those actions, or how they could influence the rest of the system. Fisheries management approaches tend to benefit one sector of society and can have unintended, negative consequences for poverty, livelihoods, and human wellbeing. Conservation initiatives have taken advantage of and often exacerbated unequal social power dynamics within communities.

Recommendations

Red Cross and other organisations:

- Given the weak link that exists between fishing communities and institutions that generate and disseminate weather forecast, there is need to make available meteorological data to men and women in fishing communities. This information being relevant to the local needs and easily understood by the local communities.
- More broadly, there is a greater need to develop Community Based Fishing Plans with a DRR angle that aims to improve safety measures for fishermen.
- The alarming rate of attack in the face of resource scarcity affecting response rate of the pre-existing institutional arrangements may require building local capacity in helping the victims as well as dissemination of information on safe fishing and good practices. Ideally, raising awareness and training for the fishing communities on the dangers of fishing during storms, winds and any weather conditions that might lead to loss of life or severe injury becomes critical.
- The presence of mobile network coverage across communities and fishing camps presents an opportunity for the use of mobile technologies to convey information across communities. There could be need to tailor and contextualise lake safety related information through mobile phones to the fishing communities regardless of the fact that they are not registered to avert disasters like deaths
- The existence of radios (though not being effectively used for getting weather information) in some pockets across fishing camps and communities creates another opportunity for the humanitarian players to exploit. In this respect, it can be recommended that organisation train communities to decode such weather-related information in as much as they encourage use of radios and mobile phones to promote information dissemination.
- Support acquisition of equipment that allows for quick aid in accident situations.
- Given that the attacks on people using the lake for domestic purposes is on the rise in as much as it is gender biased, there could be greater need to look for alternative sources of water for domestic purposes. In providing boreholes may lie the panacea to curbing the increase in attacks by crocodiles especially for the women who are traditionally engendered to doing domestic chores. This could be done through drilling of boreholes and servicing of the old ones (where they pre-existed) so that women and children do not have to go to the lake to fetch water and risk attacks from crocodiles
- The need to keep women out of the rivers and lake is paramount. In this respect, creating and sustaining diversified livelihood base can get the women and some men out of the waters. There could be need to support women`s clubs including 'Mukando' to enhance and diversify livelihoods
- Water conservation and management initiatives must consider the whole fisheries value chain.

Government may need to:

- Design a National Gender Policy that takes into account the importance of fishing communities that are not registered
- Establish National Response Mechanism to deal with natural disasters that happen in the lakes
- Incorporate indigenous knowledge mechanisms in the management of fishing communities and the contribution of the semi- skilled fishermen in national development
- Design a scheme that allows for ownership of boats by fishermen
- Provide safer boats that ferry children to and from school across the lake to curb increases in attacks
- Enact a fishing registration programme that regularises all the non-registered fishermen in the communities

National Parks may need to:

- Institute early action in dealing with wild animals as are the major hazards
- Provide mechanisms to deal with problem animals on the lake

Traditional and local leaders may need to:

- Lead the process of recognising cultural rites that maintain and sustain sacred places as a way of easing the hazards emanating from the lake

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Supported by



ANNEX 1 Terms of Reference

Knowledge, Attitude and Perception towards Early Warning Systems

Project: Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning

Project Area: Kariba Rural (Nyaminyami) District.

1.1 Background

1.2 Zimbabwe Red Cross Society

The Zimbabwe Red Cross Society (ZRCS) is a leading humanitarian and disaster relief organisation with a mission to save lives and alleviate human suffering wherever it is found and however it is caused. The organisation is part of the global Red Cross Movement with presence in 190 countries; and is guided by 7 fundamental principles – Humanity, Impartiality, Neutrality, Independence, Voluntary service, Unity and Universality. ZRCS derives its mandate from an Act of Parliament, the ZRCS Act No.30 OF 1981 (Chapter 17.08) – whereby it is auxiliary and independent to the State in terms of humanitarian affairs.

Zimbabwe Red Cross Society (ZRCS)'s main programme areas are disaster risk reduction (including response and preparedness), water and sanitation, food security and livelihoods, health and social and organisational development. These programmes are implemented within the community resilience framework. ZRCS operations are spread across the country's ten provinces.

1.3 Problem Statement

Kariba is a district and constituency on the shores of Lake Kariba in Mashonaland West Province of northern Zimbabwe, along the border with Zambia. The constituency comprises 12 rural wards in Kariba Rural, also known as Nyaminyami Rural District, and 9 urban wards in Kariba Town, the district capital. Nyaminyami (Rural Kariba) district is remote and marginalized, consisting of communal lands populated either by Tonga and Shangwe people who were resettled from the Zambezi River when Kariba Dam was constructed in 1956. Rural Kariba is at risk from multiple natural hazards, specifically from cyclones, tropical storms, flooding, droughts, outbreak of water borne diseases, marine accidents, environmental degradation, human-animal conflicts (crocodile and hippo attacks) and HIV

and AIDS.

Vulnerability to these hazards is exacerbated by high levels of poverty and weak infrastructure. Humanitarian agencies report that most vulnerable people in Kariba rural are facing chronic humanitarian consequences, mainly due to poor access to basic services and livelihood opportunities, limited institutional capacity, limited knowledge on control of animal diseases, limited safe water sources and sanitation facilities and lack of early warning system. These issues, combined with socio-economic shocks, extreme weather conditions, influenced in part by climate change have conspired to exacerbate the vulnerability of communities in Kariba rural and progressively erode any of the small development gains that the communities might have achieved.

There are signs that climatic hazards are increasing. This has triggered a significant increase in the number and scale of weather related disaster. These climate change induced disasters have devastating effect on many households built in the Zambezi basin or fishermen and farmers who work in or around the lake, most of who do not have disaster management planning or mitigation measures in place.

The ZRCS Disaster Management Strategy is anchored on the need to empower communities and increase their capacity to prevent, predict, reduce the risk of, and respond to recurrent disasters. In partnership with Danish Red Cross, ZRCS received funding under the World Bank Global Facility for Disaster Risk Reduction grant to implement a 30-month Disaster Risk Reduction and Climate Change Adaption project in rural Kariba (1st Jan 2016 – 30th June 2018). The project is titled: *Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in Local Development Planning*. The project targets 2,347 households in 3 at risk wards of Kariba rural – Mola, Negande and Nebiri with an estimated population of 10, 444.

2.0 Mainstreaming Disaster Risk Reduction and Climate Change Adaptation in Local Development Planning

Objective of the project

Enhance capacity of vulnerable rural communities in Kariba district to prepare for, mitigate and respond to recurrent disasters and the impact of climate change.

Main project components

1. Community based disaster reduction with climate change adaptation
2. Mainstreaming disaster risk reduction and climate change adaptation in local development planning.
3. Fishing community access to early warning system (EWS) for adverse weather on Lake Kariba.

3.0 Rationale for the Knowledge, Attitude, Practice (KAP) Study

A Knowledge, Attitude and Practice (KAP) survey⁵ in specific relation to the project objective 3 above is to be conducted among the proposed target group (Msampa fishing community).

Anecdotal evidence reveals that there are significant gaps in the knowledge, attitudes and behavioural practices of fishing communities in Kariba rural, with respect to early warning-early action⁶ for adverse weather and boating incidents (e.g. human-animal conflict) on Lake Kariba. Despite the implementation of an early warning system (EWS) in selected communities in recent years, consultations held in 2015 with a wide cross section stakeholders confirmed that there is still a need for greater public awareness and education as to the likely impacts of an EWS linking fishing communities with adverse weather warnings from Lake Navigation Control based in Kariba urban. A KAP survey will help ensure that the overall disaster risk reduction (DRR) and the community-based EWS component of the project is based on a proper understanding of the current level of knowledge, attitudes and practices/behaviours of the target population. This it is expected, will provide information that will enable the design of a community-wide knowledge and awareness activities. These activities will build into the community-based EWS component to form an integral part of the disaster management and risk reduction initiatives aimed at saving lives and reducing economic losses.

Specific objectives of the study

4. Identify and prioritize hazards⁷ faced by target fishing communities in specific relation to fishing activities on Lake Kariba (and the rivers that feed it)
5. To understand the knowledge, attitudes and practices of at-risk fishing communities in relation to these hazards and towards existing⁸ and future⁹ early warning systems.
6. To recommend strategies that would improve and build on the effectiveness of the current project design with regard to disaster risk communication and awareness raising.
7. To use it as a baseline for monitoring and evaluating changes in communities KAP towards the end of the project.
8. To contribute and inform disaster management initiatives of Kariba rural communities, stakeholders as well as the ZRCS DRR strategies.
9. Develop results that will be used in the design of an early warning, climate change knowledge and awareness programme and a communications strategy to improve KAP, thereby increasing capability for early warning, and for the building of a climate change resilience community, society, environment and economy.

⁵ A KAP survey assesses the “knowledge” possessed by a community and refers to their understanding of the topic. “Attitude” refers to their feelings toward this topic, as well as any preconceived ideas they may have towards it. The word “practice” or “behaviour” refers to the ways in which they demonstrate their knowledge and attitudes through their actions in regards the subject.

⁶ We don’t know much regarding the characteristics of the fishing community population, some of who come outside the area, neither is the adequate information on the disposition of local Tonga ethnic groups to external projects including EWS/DRR

⁷ Including climate variability & climate change

⁸ Including indigenous knowledge; and how, and through who, information and alerts flow within the target group (role of authority figures, social networks) and externally where they get this information from: TV and radio, phone, newspapers, relatives & diaspora)

⁹ For example SMS-based or voice-based alerts

4.1 Scope of Work

In carrying out the assignment, the consultant will utilize a combination of survey design methodologies and largely qualitative methodology.

Survey target group & sample size: The KAP survey will focus on the fishing community in Msampa (Mola Ward 3, Kariba District) and will include representation from fishermen and women, boat owners (registered and non-registered licence holders), family members (or others) left behind, and key influencers in the community (e.g. traditional leaders, elders, teachers, religious leaders, health volunteers). Inputs from men, women, elderly & youth & children are all relevant (e.g. the elderly may be particularly in relation to indigenous knowledge and the historical perspective to hazards).

The consultant is also expected to carry out the assignment in accordance with international best practices for this type of undertaking.

Specific Tasks Specifically, the consultant will:

- Review the survey instruments and report of findings of other available literature KAP surveys conducted locally and internationally as well as guidelines on early warning from IFRC and other relevant organizations.
- Outline survey design, including details of methodology; sampling plan.
- Include in the survey as much as is feasible, communities that are specifically targeted for intervention by project.
- Design, develop, critique (with ZRCS technical team) and refine data collection tools and possibly translating them into the local language.
- Pre-test (if possible) and finalize survey instruments.
- Train data collectors (if necessary) and supervise collection, cleaning and coding of data.
- Analyze data and produce report with tables, charts and graphs and detailing KAP among the various target groups.
- Validate survey findings in consultation with key stakeholders.
- Present the draft report to ZRCS technical team for the first review before producing a final draft
- Make recommendations arising from the findings of the survey that may inform early warning education and awareness programme as well as a communications strategy.
- Conduct any other task in keeping with international best practices
- Submit a Final KAP Report

5.0 Expected Deliverables

The expected Deliverables of this assignment are:

1. Inception report with a detailed work plan, methodology and implementation schedule
2. Survey design including survey instruments.
3. A draft report documenting analysis of survey data, the findings and recommendations.
4. Two (2) bound hard copies of the KAP Report and a soft copy of report on emails.
5. Any other non-consumable documents/items that will be used in the course of the planned consultancy.

6.0 Duration of Assignment

The anticipated duration of this assignment is 20 days. The consultants will be engaged over the period 15th April to 5 May 2015.

7.0 Qualifications

A post-graduate degree in Psychology, Anthropology, Economics, Statistics, Sociology or relevant branch of social/behavioural sciences with minimum of five (5) years' experience in the design and conduct of surveys using a range of quantitative and qualitative data collection and analysis methods and strong analytical and report writing skills. **Demonstrable** experience of conducting KAP survey – preferably qualitative-based. Vast experience and knowledge of community based disaster risk reduction, early warning and climate change adaptation preferable. Previous work experience in Kariba rural, or among the Tonga or other minority ethnic groups would be an asset.

8.1 Expression of interest

A consultant/Firm that meets the above requirements and is available within the period indicated above should submit the following:

- A capability statement of the firm and the specific consultant(s) who will undertake this assignment, including a commitment to be available to undertake the entire assignment within the stated timelines. If two consultants are proposed, it should be clearly demonstrated on how their individual competencies shall complement each other in the context of this assignment. This should not exceed 2 pages, A4 size paper.
- An elaborate methodology and detailed costed-work plan indicating number of days per tasks and costs (**USD**) per main task. This should not exceed 5 pages, A4 size paper.
- Curriculum vitae of **at one** consultant proposed for the assignment or any other research assistant to be involved.
- Their relevant qualifications, skills and experience should be clearly spelt out.
- Full contact details of **2** persons who supervised each of the proposed consultant(s) in **2** similar assignments within the last **3** years. The details should include, current telephone contact, e-mail address, title of assignment undertaken by the consultant, dates when the assignment was undertaken and name of the contracting organization

9.0 Submission of consultancy expression of interest.

Please forward your expression of interest and proposal by email or in a sealed envelope marked

“WB/GFDRR KAP Survey” and addressed to:

The Secretary General
Zimbabwe Red Cross Society
10 St Anne’s Rd, Avondale
Harare

Tel: +263 4 333 158

Email: zrcs@ecoweb.co.zw

Proposals received after the 9 April 2016 will not be considered. ZRCS reserves the right to cancel in whole or in part this call for proposal. Only suitable candidates will be contacted



EARLY WARNING STUDY TOUR – TANZANIA REPORT (Activity 3.2.5)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

LOCATION & DATES:	LAKE VICTORIA – SENGEREMA DISTRICT, MWANZA, TANZANIA Hosted by Tanzania Meteorological Agency (TMA)
	20 – 27 NOVEMBER 2016



INTRODUCTION AND OBJECTIVES

The project component is a pilot and the study tour will therefore primarily focus on key lessons learned (challenges & successes) from both the pilot and initial scale-up phases of the MWA Tanzania project and on practical recommendations for the Kariba pilot (with an emphasis on the SMS-based alerts). The Kariba pilot is predominantly focused on fishing communities but, similarly to MWA Tanzania, it is expected the local farmers may also find the service useful. Thus, for the study tour whilst the emphasis will always be on the fishermen we will also find insight into the farmer perspective relevant and useful.

Some themes or topics expected to be covered were:

- Target groups (and any gender or inclusivity considerations)
- Sensitisation campaigns prior to, and during, message dissemination
- SMS-based alerts: message content; language; frequency; feedback
- SMS-based alerts: technology aspects & software; cost; and cost recovery
- VHF/HF radio alerts
- Local dissemination structures and organisation
- Role of Government authorities, community-based organisations and private sector
- Coordination
- Early action
- Response

Refer to Terms of Reference for further details

PARTICIPANTS (GUESTS & HOSTS)

Name	Title / Designation	Organisation / Agency
Guests		
Decide Mabumbo (M)	Disaster Management Officer / HQ	ZRCS
Margaret Zaranyika (F)	Community volunteer / Msampa	ZRCS volunteer
Christine Chawhanda (F)	Field Officer/ Kariba	ZRCS
Dudzai Gava	Surveyor of Vessels	Lake Kariba Navigation Control
Hosts:		
Hellen Msemo (F)	Public Weather Manager/ Dar eSalam	Tanzania Meteorological Agency
Wilberforce Kikwasi (M)	Forecaster/Dar eSalam	Tanzania Meteorological Agency
Augustino Ndubanda (M)	Forecaster/Mwanza Airport	Tanzania Meteorological Agency
Mafuru Magesa (M)	District Executive Director/Mwanza	Tanzania/President's Office
Nestroy Mimbane (M)	Office Assistant/District Director	Tanzania/President's Office

STUDY TOUR PROGRAM

DATE	PERIOD	ACTIVITY	WHERE
20.11.2016	DAY 1	Guests arrival	Dar-e-Salam
21.11.2016	DAY 2	Visit TMA HQs and travelling to Mwanza	DG, CFO and Agromet
22.11.2016	DAY 3	Meet Sengerema District Focal points	District HQs
23.11.2016	DAY 4	Study tour - Kahunda fishing community	
24.11.2016	DAY 5	Study tour - Katunduru fishing community	
25.11.2016	DAY 6	Travel back	Sengerema-Mwanza – Dar
26.11.2016	DAY 7	Travel back	Dar-e-Salam to HRE

FINDINGS OF THE MISSION

Design of the project / Strategic & Conceptual

- Weather services are generated at the central forecasting offices in Dar-e-Salam using data collated from observation stations scattered around the country.
- Rigorous analysis of the data using various tools and models by TMA experts done before forecasts are issued.
- Daily forecasts disseminated through national TV and radio channels.
- Customized weather forecasts are generated and disseminated to fishermen, farmers and lake transporters in the project area at Sengerema District where more than 5,000 farmers, fishermen and Lake Transporter receives the SMS. Also, the information is disseminated via Sengerema Community radio and through extension officers.
- Farmers receive seasonal forecasts and 10 day forecasts.
- Fishermen & transporters receive severe weather warning message alerts.
- Severe warnings issued when precipitation is 50mm in 24hrs, wind at 20 knots or 40km/hr and waves which are greater than 2 metres.
- The three groups receive daily weather forecast through a community radio.
- TMA issues weather warnings. TMA Agro-met department and Agricultural extension agency provide advisory services for farmers. Disaster Management Unit at District provide advisory services for fishermen.

Operational: Early Warning

- 60% of total area of Sengerema district is surrounded by Lake Victoria populated by a large number of people dealing with fishing and transportation at various scales. Several hazards faced by lake users prompted the introduction of this suitable for the Mobile Weather Alert project. The project was conducted at Sengerema District where 30 people were selected from about 10 Beach Management Unit (BMU). BMU comprises of community members who responsible among other ensures that lake environment is safely kept and maintained through by laws agreed within the community.
- Sensitizations at schools, religious institutions, district officials were done.
- Identification of 30 focal persons (10 farmers, 10 fishermen, 10 transporters)

- Training on understanding weather terminology, early warning and criteria for issuing warnings, available communication channels, importance of weather information to socioeconomic development were also done.
- The train was hands-on and context specific; participants were asked to identify weather related disasters affecting their villages, to list their preferred communication channel and the type of weather information they would like to get from TMA and at what frequency.
- The trainings were on average, was for 2 days. This was followed by roving seminars conducted at each representative village. The roving seminars were attended by various people in the community and also involved extension officer's and village leaders.
- Special attention was given to gender issues, particularly women who were reported to have limited access to weather and climate information. Due to various roles and responsibilities in the community women need more climate services. Furthermore, during disasters, women are exposed to greater risk compared to men.
- School children, religious leaders and community leadership were also targeted.
- Detailed baseline studies were done.
- Distribution of phones to focal persons
- Focal persons (FPs) tasked to monitoring indigenous knowledge/ community understanding of the weather.
- Roving seminars for these FPs. This involved getting an understanding of community IKS, linking it with scientific data and developing a language that is well understood by users.
- Weather information is disseminated to FP who then cascade this data to others
- Specific packages have been developed for farmers & fishermen. Database for these users stored at TMA national office.
- SMS financed by the project. FP disseminate to colleagues at their own cost. Free SMS available at times.
- Receivers often provide feedback by calling back providing details about their experience of adverse weather.
- TMA has plans to apply for toll free number.
- Additional equipment- rain gauges have been installed at the lake shore. A computer and printer have been provided to the district office.
- Messages are received in Swahili which is widely spoken in the country.
- Fishing groups are composite/diverse backgrounds but work in cooperatives/ujamma.

Operational: Early Action

- Preparedness measures for slow onset disasters (drought) will be taken making use of the data on rainfall patterns etc.
- TMA Agro-met and Extension agencies provide advisory services to farmers – crop varieties and agricultural practices and appropriate time for ploughing.
- EW warning is also received by district officials who make up a Disaster Management Units (DMU) which coordinate disaster response (search and rescue) efforts on the lake.
- Ambulance manned by government officials patrols the lake (donated by EU).
- The community is at the centre of search and rescue.

Operational: Coordination

- District convene the DMU which is responsible for coordinating disaster response efforts.
- Communities and BMU are at the centre of disaster response.
- Additional support, ambulance provided by EU, other local NGOs have also assisted.
- BMU received training from District Council (DC) / DC also provided life jackets and speed boats
- Surface and Maritime transport authority (SUMATRA) governs and regulates transport and operations on the lake. Provide training/ simulations to lake users twice a year.
- Fisheries Department issues fishing permits
- Fish has a ready market organised by BMU.

SUCCESS STORIES/IMPACT

- ✓ Seasonal/ 10-day forecast improve preparedness for farmers. Information is used in planning, choice of crop varieties.
- ✓ For fishermen – this has improved safety and preparedness. Fishermen take precautionary measures.
- ✓ Case studies of fishermen who had a meeting at Juma Island in August 2016, received warning alert and took precautionary measures, avoided travelling and 9 lives which could potentially have been lost, were saved.
- ✓ In Nov 2015, SMS alerts of an incoming storm was received. Those who continued fishing close to the lake shore drowned and were rescued by the community.
- ✓ These cases are used in formulating training workshops.
- ✓ Farmers who have received this year's seasonal forecast of a drought have shifted to grow short season variety and drought tolerant rice.
- ✓ Increase in income and livelihood protection for both farmers & fishermen have been attributed to SMS warning alerts.

CHALLENGES

- Focal persons migrate to other areas.
- Limited understanding of messages due to low educational levels.
- Not taking corrective actions/Ignoring the message.
- Traditional and cultural beliefs affected absorption and use weather forecasts.
- Periodic network challenges.
- Server experienced faults prompting the need for redundancy.
- Some weather events difficult to predict e.g. whirlwind/ water spout

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



GFDRR
Global Facility for Disaster Reduction and Recovery

ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR

EARLY WARNING STUDY TOUR – TANZANIA

KEY STAKEHOLDER REPORT (Activity 3.2.5)

By Dudzai Gava

Surveyor of Vessels / Examiner – Lake Navigation Control - Kariba

Early warning study tour to Lake Victoria Tanzania

Zimbabwe Red Cross society is implementing an Early Warning Project Entitled Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe, of which Inland Waters Control is part of the steering committee. Hence the invitation to study a functioning Early warning, Early action project in Tanzania.

The hosts were Tanzania Meteorological Agency (TMA). The guests comprised of:

- (a) 2 participants from the Zimbabwe Red Cross (1 staff & 1 community volunteer)
- (b) 1 participant from Inland Waters Control
- (c) 1 participant from the fishing communities

* Our local meteorological services failed to send a participant.

Our tour started with a visit to TMA where weather forecasts are generated at the central forecasting offices in Dares Salam using data collected from network of stations. Rigorous analysis of data using various tools and models by TMA experts including some from the severe warnings desk is done before forecasts are issued. Threshold for severe weather warnings are set. Customized weather forecasts are generated and disseminated to farmers, fisherman and transporters through National TV, Radio channels and SMS on mobile phones. It was clearly spelt out that Early Warning is the provision of timely and effective information through identified institutions that allows individuals exposed to hazard to take action to avoid or reduce their risk and prepare for effective response. Four major elements of an Early Warning system were given as:

1. *Risk knowledge*: Risk assessment provides essential information to set priorities for mitigation and prevention strategies and designing early warnings systems.
2. *Monitoring and Predicting*: Systems with monitoring and predicting capabilities provide timely estimates of the potential risk faced by communities.
3. *Disseminating information*: Communication systems are needed for delivering warning messages to the potentially affected locations to alert local government agencies. The messages need to be readable, synthetic and to be understood by end users.
4. *Response*: Coordination, good governance and appropriate action plans are a key point in effective early warning. Likewise, public awareness and education are critical aspects of disaster mitigation.

Failure of any part of the system will imply failure of the whole system.

Two fishing communities were visited in Sengerema district namely Kahunda and Katunduru. For their Early Warning System to be a success it started with sensitization at schools, religious institutions, district offices, vulnerable population and local leadership. Integrated education to overcome uninformed perceptions, the steering committee worked with target groups to identify information needs and feasible response strategies for each target group. Indigenous knowledge was also considered. Detailed baseline studies were carried out. Focal persons were identified and given phones for receiving and disseminating information to their colleagues. Roving seminars for these focal persons were carried out. Linkages of indigenous and scientific knowledge of weather created. Specific packages for each target group were also put in place.

Warnings are also received by district officials who make up the Disaster Management Unit which coordinates disaster response (search and rescue) effects on the lake. There is an ambulance manned by government officials conducting lake patrols. The community is at the centre of the search and rescue operations.

In addition to that Early Warning messages should be targeted and localized where possible use of the local language is encouraged, for instance our study tour targeted the fishermen. This group is receiving localized alert messages regarding thunderstorm, strong wind and lightning potential and appropriate response measures. The outcome of this is that fishermen in Tanzania now have increased knowledge of risks and safety measures to be taken. Fishermen are now refraining from frequenting areas where severe weather is imminent since they now have greater understanding of risks. Some groups which are benefitting from these early warnings include schools, farmers and transporters.

Challenges.

- Limited understanding of messages due to low education levels
- Traditional and cultural beliefs affected absorption and use of weather forecast.
- Some weather events difficult to predict e.g whirlwind/water spouts
- Ignoring messages and not taking corrective measures

Findings

Many of the observations made during the Tanzania Early Warning study tour are useful to our own context.

- We need to continue with our sensitisation and awareness campaigns to the vulnerable communities.
- We need to advocate for disaster management to be included in the school curriculum to raise awareness among students on various hazards and disaster management approaches.
- Each line ministry to have a contingency plan and budget for emergency response in place at the onset of fiscal year.
- Government officials to be provided disaster management training in order to mainstream disaster in all sectors.

- Lake Navigation personnel to be trained and equipped with lifesaving skills, and the department need enough patrol boats and in addition to that an ambulance on standby on the lake.
- Early Warnings / forecasts should be localised and customer tailored, timely and easy to understand by end users, where possible use of local language is encouraged. Such early warnings should only be issued after a rigorous analysis of data by weather experts. There is need for threshold to be set for severe weather elements.
- Our preparedness should be based on sound knowledge of timing and characteristics of disasters, understanding the severity and consequences of various hazards. This promotes the production of disaster calendars and disaster contingency planning.
- We need to encourage communities to take responsibility of disaster response such as defining responsibilities and actions of each stakeholder.
- We need to have an effective means of information collecting and dissemination and look at ways to sustain the project.

At the outset, I want to express my heartfelt gratitude to the Government of Zimbabwe through the Minister of Transport and Infrastructural Development for granting me permission to go on such a valuable study tour which has a lot of bearing on safety of life and property on inland waters. I am heartily thankful to our Zimbabwe Red Cross society for giving both financial and technical support, without their guidance and valuable support this trip could not have been a success. Special thanks should also go to Tanzania Meteorological Agency for hosting us. The fishing communities also provided useful information.

Information gathered during this study tour is very essential in coming up with an effective early warning system and long term disaster prevention and mitigation measures.

D. Gava

Surveyor of Vessels / Examiner – Lake Navigation Control - Kariba

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



GFDRR
Global Facility for Disaster Reduction and Recovery

ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR



Terms of Reference

Study Tour: to Mobile Weather Alert (MWA) “Weather and Climate Services for risk reduction in Fishing and Farming Communities in Tanzania’s Lake Victoria Basin” in Sengerema District, Tanzania

Introduction

The Zimbabwe Red Cross Society (ZRCS) with technical support from Danish Red Cross (DRC) has recently started a 30-month ACP-EU funded World Bank/Global Fund for Disaster Risk Reduction (WB/GFDRR) project titled “*Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe*”. The project area is remote and targets 3 neighbouring wards in rural Kariba District, Mashonaland West Province: one of these wards, Mola, borders Lake Kariba. Mola has a number of fishing camps that house mainly small-scale fishermen.

The WB/GFDRR call for proposals prioritised 3 areas of focus: one of which was to “improve access to *existing* early warning systems”. One of our WB/GFDRR project components therefore seeks to pilot a community-driven hazard “first mile” early warning early action mechanism that is linked to the local and national forecasting institutions – for these Lake Kariba fishing communities. For this component ZRCS has partnered with Zimbabwe’s Meteorological Services Department (under the Ministry of Environment, Water & Climate) and Lake Kariba Navigation Control (under the Ministry of Transport and Infrastructure Development and its Department of Inland Waters Control). The Lake Kariba Navigation Control, situated on a hill above Kariba town and the Lake Kariba dam wall, has a dual role to disseminate local weather forecasts and alerts as well as co-coordinating search and rescue operations. Although the project will support Lake Kariba Navigation Control with an automated weather station near the fishing communities the main focus of the component is on improving the *access* of the fishing communities to adverse weather alerts from Lake Kariba Navigation Control.

Fishermen state that one of the main hazards they face on the lake is the capsizing of boats caused by large waves generated by wind or rain storms. They also identify both hippo and crocodile attacks near the shoreline as a concern.

The dissemination of SMS-based and VHF/HF adverse weather alerts (and recommended actions) will be complemented by the establishment and training of Community Disaster Response Teams. The project will explore linking and/or developing partnerships between the response teams and local high-end tourist lodges, the conservation/anti-poaching organisations, Zimbabwe Parks & Wildlife Authority and larger-scale commercial fishing operators.

Learning Objectives

The project component is a pilot and the study tour will therefore primarily focus on key lessons learned (challenges & successes) from both the pilot and initial scale-up phases of the MWA Tanzania project and on practical recommendations for the Kariba pilot (with an emphasis on the SMS-based alerts). The Kariba pilot is predominantly focused on fishing communities but, similarly to MWA Tanzania, it is expected the local farmers may also find the service useful. Thus, for the study tour whilst the emphasis will always be on the fishermen we will also find insight into the farmer perspective relevant and useful.

Some themes or topics to be covered include:

- Target groups (and any gender or inclusivity considerations)
- Sensitisation campaigns prior to, and during, message dissemination
- SMS-based alerts: message content; language; frequency; feedback
- SMS-based alerts: technology aspects & software; cost; and cost recovery
- VHF/HF radio alerts
- Local dissemination structures and organisation
- Role of Government authorities, community-based organisations and private sector
- Coordination
- Early action
- Response

Participants

Guest: It is proposed that 4 – 5 guest participants: representing various stakeholders in Zimbabwe / Kariba join the study tour:

1. Zimbabwe Red Cross x 2
2. Meteorological Services Department x 1
3. Lake Navigation Control x 1
4. Danish Red Cross x 1: Country Coordinator/Disaster Risk Reduction Delegate (optional)

Timing & duration

- Visit scheduled for first full week of September 2016.
- Day 1/2: Travel to Dar-e-Salam
- Day 3,4 & 5 – Field Work
- Day 6/7: Travel Back

Host: Tanzania Meteorological Agency

Logistics: The Zimbabwe study team members fly HRE-DAR-MWZ; if 1 or 2 host participants need to fly then project would cover the cost.

Host to assist with local transportation & hotel bookings in Mwanza/Sengerema.

Budget: Project to cover Zimbabwe participant costs in full

Open to discussion: possibility for Project to cover some/most/all of host transportation, accommodation & per diem costs. Arrangement would be reimbursement based on production of original receipts.



CDRT NEEDS ASSESSMENT REPORT (Activity 3.2.6)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

ACTIVITY	Needs assessment in Kariba District towards the Community Disaster Response Teams (CDRTS) and Community Early Warning System (CEWS) component of the Project
TEAM	ZRCS Field Officers – Christine Chawhanda and Talent Chuma
& DATES:	ZRCS Field Assistants – Simbarashe Muringo and Wonder Chizema DRC HQ Mission Team – Thomas Langvad
	12 – 30 September 2016



Prepared by: DRC HQ Mission Team (10 October 2016)

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1. Introduction

Nyaminyami Rural District (NRD) is located in the north-eastern Zimbabwe along Kariba Lake. The district is one of the most rural areas of Zimbabwe and has limited access to electricity, running water and sewerage. The population of the district is high at risk due to natural hazards and poor infrastructure which threatens their livelihoods. The hazards include recurring droughts and floods causing major damages on infrastructure, households, crops and livestock. The majority of the population in NRD relies on farming and is highly vulnerable. The area is also in high risk to diseases like malaria, HIV, respiratory diseases, diarrhea and cholera due to poor sanitation, lack of latrines and poor knowledge of sexual prevention and basic hygiene.

Zimbabwe Red Cross Society (ZRCS) are present in the district and are currently implementing a 3-year DRR project (*Mainstreaming Disaster Risk Reduction (DRR) and Climate Change Adaptation CCA) into Local Development Planning (LDP) In Zimbabwe*) focusing on mitigation, preparedness and response towards recurring disasters and impacts by climate change in Kariba district.

One of the components focuses on three fishing camps along the lakeshore and the hazards faced by the fishermen. In effort to mitigate the hazards on Lake Kariba, ZRCS will implement a *Community Early Warning System (CEWS)* to ensure timely and sufficient warnings on storms and strong winds on the Lake. The response capacity will similarly be strengthened by the establishment of *Community Disaster Response Teams (CDRT)* within the fishing camps to boost the response capacity in case of incidents. The CDRTs will work together with local stakeholders to increase the response capacities.

1.1. Objectives

The main objective of the field visit was to carry out a needs assessment towards the CDRTs and CEWS in Kariba District to assess gaps and opportunities within the target fisher communities and amongst the potential local stakeholders.

The specific objectives of the assessment:

- To identify, map and assess existing skills, equipment and fishing routines relevant for the establishment of CEWS and CDRTs within the three target fishing communities.
- To identify opportunities and resources including skills, Search and Rescue capacities, communication equipment and willingness/concerns towards the CEWS and CDRT's within the potential stakeholders located in the project area.
- To make recommendations towards the structure and composition of the CDRTs and CEWS

Terms of Reference is attached in Annex A.

1.2. Research methodology

Study area

Kariba District have a population of approximately 60.000 people and is divided into 9 urban wards in Kariba Town and 12 rural wards in Kariba Rural, also known as Nyaminyami Rural District (NRD). The three target fishing-camps are located in ward 3 in NRD, which is one of the most rural and vulnerable areas in Zimbabwe towards recurring natural hazards and with a total population of approximately 10,000 people.

Research Team

The Danish Red Cross (DRC) HQ mission team conducted the assessment in close cooperation with the ZRCS Field Team in NRD, who was responsible for coordination of local arrangement and introductions. The ZRCS field team was also an important source of information due to their working experience and familiarity with the fishing camps, potential stakeholders and local authorities.

DRC HQ team consisted of Thomas Langvad and the ZRCS field team consisted of Christine Cawhanda, Simbarashe Muringo, Wonder Chizema, Talent Chuma. This report is based on the field level findings and is authored by the DRC HQ Mission team.

Time duration

The mission took place in 2016 between 12th and 30th of September and was containing 2 days of briefing in Harare, 13 days fieldtrip and 2 days of report writing & debriefing in Harare.

Research approach

The study has approached a qualitative research method during the fieldtrip. The qualitative research methods that were used in the fishing camps includes key informant interviews, focus group discussions, inspection of equipment and other observations made during the visits. Relevant observations were also made during the 3-days CDRT training in Chalala from the 24th to 26th of September with participants from Msampa, Masviakabola and Sibilobilo fishing camps.

1.3. Constraints/Limitations

This report has been constraint to assess and map gaps and opportunities towards the CDRTs and CEWS within the fishing camps and local stakeholders in NRD.

The understanding of risks and hazards faced by the fishing camps are based on the report "*Knowledge, Attitude and perception towards Early Warning Systems*" but also complemented by knowledge from the meetings and interviews carried out on the fieldtrip.

The meetings and interviews with fishermen and stakeholders were in several cases affected by time limits on meetings and interviews due to travel time, delays, limits on interpretation etc. Interviews and focus group discussions in the fishing camps were also affected by the presence of a representative from the Nyaminyami Rural District Council (NRDC) who attended all visits in the fishing camps and caused an impact on the fishermen's willingness to speak free and honestly about fishing routines outside of legal zone and other relevant matters.

To make a more comprehensive observation on the actual use of lifejackets amongst fishermen the research could have benefited from having a longer timeframe in order to do a more comprehensive assessment.

Number of boats, lifejackets, cellphones and other equipment in the camps are estimated by the research-team based on statements from the fishermen and observations in the fishing camp.

Most Zimbabweans speaks English as second language, but the proficiency in English within the fishing camps are very limited and most fishermen only speaks Tonga and/or Shona. All interviews and focus group discussion was translated into English by either a fisherman with limited English skills or a ZCRS staff with limited proficiency in Tonga. The language barriers have been a challenge and have affected the collection of data.

2. Findings

2.1. Fishing camps – Baseline

The three target fishing camps; Msampa, Mavsiakabola and Sibilobilo is located along the lakeshore to Kariba Lake. The camps are legal settlements authorized by the NRDC. The camps have a total population of approximately 780 individuals and 390 households. The majority of households live with permanent residence in a specific camp, while a minority of fishermen lives in a camp for a short period of time before moving to another camp along the lakeshore arbitrated by livelihoods, fishing permits, fish stock and other matters.

Msampa, Masviakabola and Sibilobilo depends on fishing as main income and source of livelihood and are less vulnerable to both drought and floods than the majority of the population within NRD. The fishing season goes all year around but peaks during the rainy season from October-December, with the best catch yield. During the rainy season the camps experiences increase in the number of waterborne diseases like diarrhea and cholera due to poor sanitation.

While the fishermen are less vulnerable to the droughts and floods because of their profession they are highly exposed to hazards on the lake. The fishing camps experiences frequent attacks from crocodiles and hippos on shallow waters and near the lakeshore. The attacks cause major and fatal injuries on humans, boats and fishing equipment. Storms, strong winds and big waves on the lake are major threats to the small fishing boats as well, because the boat are very vulnerable and easily capsizes with fatal consequences for fishermen and equipment.

Water safety at Lake Kariba

The fishermen are highly vulnerable to the hazards on the lake and struggles with the threats on a daily basis. They are in lack of basic and necessary skills, equipment and procedures in order to cope with the hazards. Compared to other actors on the lake¹, the fishermen are the only group struggling with these hazards.

Fishing-boats

In every camp the boats varies in type, condition, material and fluidity. Most boats in Sibilobilo and Masviakabola are made of steel or fiberglass while most of the boats in Msampa are homemade, made by tine-plates and sticks. These are the most dangerous boats with a very poor fluidity and very high vulnerability towards waves, winds and animal attacks. All boats, except a special type of steel boat, will sink if it capsizes. This boat has containers with air inside the construction in bow and aft, which makes it fluent even when capsized or filled with water². This means that fishermen can hold onto the floating boat and bring it back to the lakeshore (Figure 1). Even when the fishermen survive capsizing they will face a major loss of livelihood when the boat and fishing equipment is lost. Without boat and nets they have lost their main source of income and can rarely afford to invest in new boat and nets.

¹ Including National Parks, Safari Lodges, Padenga Crocodile Farm and commercial fishing companies

² The "sink-free" boat is made by a company in Chalala. The price is 600 USD and 200 USD if the fishermen bring all necessary materials.

Risk-assessment: Boats

1. **Tin-plate-rowboats** are *highly dangerous to use*. (Figure 2)
Description: Very low load capacity and highly vulnerable to winds/waves and animal attacks. It will sink when it is capsized.
Load capacity: 2 persons, nets and 20-30 kg of fish.
2. **Fiberglass-rowboats** are *dangerous to use*. (Figure 3)
Description: They are vulnerable to animal attacks and winds/waves due to the small size and weak material and will sink if capsized. If the boat is without damages it will still be a dangerous option but nevertheless one of the safest boats within the fishing camps at the moment.
Load Capacity: 2 persons, nets and 50-100kg of fish.
3. **Steel-rowboats** are *not safe to use*, but best possible option. (Figure 1)
Description: The boat is less vulnerable to winds/waves and animal attacks than the other boats due to the strong material and the relatively high weight, which makes it more stable and more unlikely to capsize. Nevertheless it can easily be capsized by hippo attacks. If the boat is capsized it will not sink because of the construction with air-containers. Fishermen can hold onto the floating boat and bring it to the lakeshore. The boat is slow because of the high weight.
Load capacity: 2 persons, nets and up to 200kg of fish.
4. **Banana-boats** are *very safe to use*
Description: Unfortunately there are no operational banana-boats in the camps at the moment (Msampa have two boats out of function). The banana-boat is safe because of the large size which makes it stable towards winds/waves. Animals will not attack the boat due to the size and high noise from the engine.
Load capacity: 8 persons, unknown weight of fish

Most of the boats are in poor condition with small to major damages.



Figure 1 - Boat with air-containers in aft and bow (Masviakabola)



Figure 2 - Tin-plate boat is the most vulnerable (Msampa)



Figure 3 - Fiberglass boat is vulnerable to hippo attacks due to the weak material (Sibilobilo)

Facts on fishing-boats:

- Each camp have between 15-20 rowboats
- A row-boat fits 2 fishermen, nets and 20-200kg of fish
- Msampa have 2 banana-boats (currently not working due to a fire and lack of engine)
- 40% of the boats are made of steel / 40% are made of fiberglass / 20% are made of tin-plates
- 80% of the boats are unsafe to use due to leaks, condition and type of boat (estimate)
- Fishermen needs materials and tools to repair the boats

Safety measures

The number and state of lifejackets present in the fishing camps are very critical. Only 20-25% of the fishermen possess a lifejacket despite that it is required by law. When applying for fishing permits the fishermen borrows lifejackets from each other in order to get the application approved by NRDC. The lifejackets are in inadequate state and will in most cases give a false sense of safety. The lifejackets lack sufficient fluidity and straps to fasten it to the body (Figure 4). Another major safety issue is the lack of basic swimming and first-aid skills amongst the fishermen. The number of fishermen with sufficient swimming skills is approximately 10-15%³, a relatively low number taken in mind that the fishermen lives along the lakeshore and works at the lake on a daily basis. One of the reasons for this is that it is impossible to do swim training in the lake because of the wild animals.

The lack of basic healthcare and first-aid skills in the camps are critical. Sibilobilo is the only fishing camp with a professional trained nurse. The nurse lives in the camp and works at Chalala Health Clinic during the day-time. Beside of the nurse in Sibilobilo there are no individuals with any healthcare or first-aid skills within the camps.



Figure 4 – Lifejackets lacks sufficient fluidity and straps the fasten

30-40% of the fishermen have cellphones. Those who have one will bring it to the lake, but is challenged by the short battery-life on the often old phones. The fishermen will use the phones to warn each other about strong winds, bad weather and to call for assistance in case of emergencies. The phones are not waterproof and the chances that they will be damaged or destroyed by incoming waves or when a boat capsizes are very high. Some fishermen have phone-numbers for the National

³ Numbers are based on statements from the fishermen. Whether or not the swimming skills are sufficient should be queried.

Parks, Safari Lodges and Padenga and can call for assistance in case of emergency, but this is not prevalent and in most cases it will be too late to make emergency calls. Most stakeholders are called for assistance by relatives, when fishermen do not return to the camp in the morning. In those cases it will be too late to make a rescue and the stakeholders will salvage the dead bodies⁴.

Fishing routines

In order to reach the best fishing areas most fishermen will go out on the lake in the late afternoon around 4-6 p.m. and return the following day around 6-9 a.m.

This is the most common pattern within all the camps while a few fishermen choose to go before dawn at 4 a.m. and return around noon between 12-14 p.m. When throwing the nets close to an island the fishermen will go on land for a few hours for the night before returning to the nets at dawn. If the fishermen have thrown the nets far from land they will stay in the boat all night.

The fishermen do not always abide by the legal fishing zones, especially Msampa have a tendency to throw the nets in Ume river⁵ outside the legal zone. This happens regularly during the rainy season where they catch the Tiger fish down the river.

Types of fish

- Breams
- Tiger fish
- Bottle fish
- Consjeck fish
- Squecker
- Silver fish
- Eel fish
- Chirchilla fish

Seasonal risks

The hazards vary around the year due to seasonal variables. It is however important to determine that all hazards are present all year around but can vary in frequency and strength during the year.

Ume River is very dangerous due to animal attacks on the shallow waters and the threat of animal attacks increases during the rainy season from November to April when the fishermen from Msampa more frequent goes down Ume river. The frequency of hippo attacks will similarly increase in the period where they give birth which usually happens during the winter season from May to August⁶.

The risk of strong winds is highest during the spring from August to November (Figure 5) where even gentle to moderate breezes can be highly dangerous to the vulnerable fishing boats depending on the direction of the wind. Winds from north and east will make the highest waves because of the long distance to shore. When the fishermen are surprised by winds at the lake they are forced to paddle with tailwind to keep the waves from breaking into the boat. At the same time the boats are too slow to paddle against the wind and the only opportunity is to follow the wind to nearest island or mainland. The fishermen have no access to weather forecasts or early warnings and have no prerequisites to foresee storms and strong winds on the lake which can emerge with short notice.

⁴ In many cases the fishermen and boats are never found after an incident at night.

⁵ Find Ume River on the map – Figure 4

⁶ Whether or not the Hippos give birth in the winter season is not confirmed but is based on statements from the fishermen.

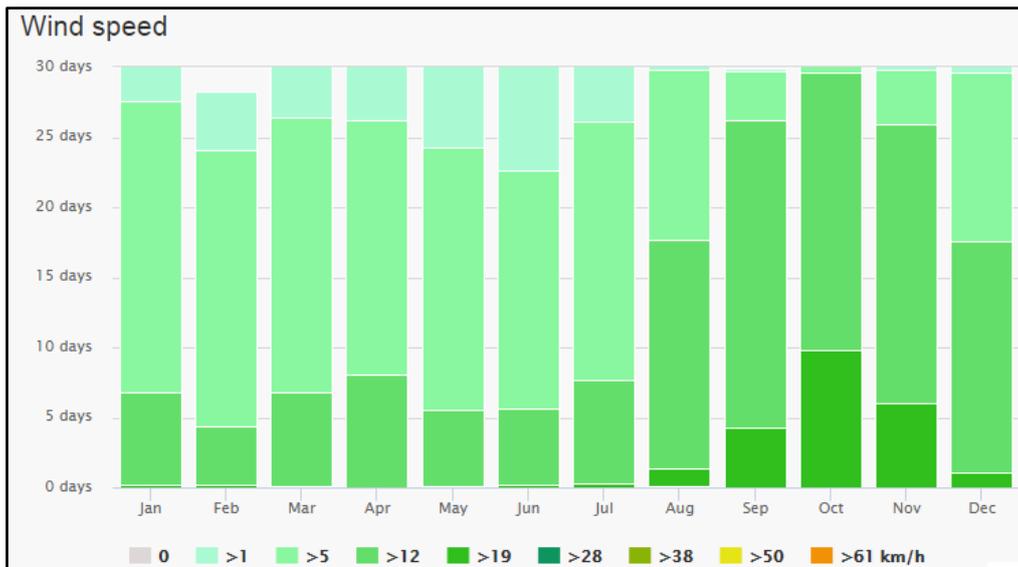


Figure 5 - Wind speeds on Kariba Lake peaks from August to December

Fishing zones and permits

The Department of National Parks and Wildlife Management (DNPWLM) are the custodian authority of the natural fish resources on national level. DNPWLM regulates the number of fishing permits and the areas of fishing zones on an annual basis and assigns the number of permits for each fishing camp. The National Parks sustains the supervision of the fishing permits and zones on local level and have the authority to arrest poachers and fishermen guilty of illegal fishing comprising illegal fishing -nets, -zones and invalid -permits. NRDC issues the fishing permits once a year within NRD. The application process is carried out in cooperation with the fishing camps including the chairman and traditional leaders to ensure that permits are issued to fishermen with permanent residency in the specific camp. In practice the fishing camps decides internally, led by the chairman, who can apply for the fishing permits. One permit allows three fishermen to fish with nylon-nets within the specific fishing zone. The legislation regarding fishing zones and permits is described in the *Kariba Lakeshore Combination Master Plan*.

Fishing permits

- Price per permit: 120 USD á Year + 10 USD Admin. Fee. (10 USD á month)
- 1 permit allows 3 fishermen to fish
- 3 Lifejackets per permit are required by law (should be presented when application is submitted)
- Boat registration number appears on the permit
- 5 Nylon-nets per permit (100m length per net)
- 350 fishing permits for NRD
- Legal fishing zones: Msampa (Zone 7), Masviakabola (Zone 8), Sibilobilo (Zone 9) (Figure 6)



Legal Fishing Zones in NRD

Willingness and challenges towards stakeholders

The National Parks enforces the law and supervises the lake for illegal fishing in regard of zones, permits and equipment. When the rangers detect fishermen without permits, illegal nets⁷ or in illegal zones they will impound the nets, give verbal warnings and in some cases arrest the involved fishermen.

Msampa experiences the highest rate of inspections by the National Parks due to their location between Bumi Hills Foundation/-Anti-Poaching Unit and Tashinga National Park Office and due to the fact that they frequently are fishing illegally on Ume River.

A common understanding and attitude within all three camps is that the National Park should do more to protect the camps from wild life by putting down hippos, crocodiles and other animals causing a threat to the camps and fishermen. Another common understanding is that the authorities 'hunt them' and do not understand how the fishermen are forced to use illegal methods in effort to make a living.



Figure 6 - Bumi Hills Anti-Poaching Unit with a sequestration of illegal nets

⁷ Twine-nets are illegal while the Nylon-nets are legal
 WB/GFDRR: A02-3.2.6 CDRT Needs Assessment Report

2.2. Potential stakeholders – Baseline

Almost all local stakeholders have assisted fishermen in emergencies on the lake multiple times. Most of them⁸ have sufficient equipment like fast going speedboats, VHF radios, first-aid skills, spotlights/flashlights, lifejacket and other relevant equipment for search and rescue operations.

Generally speaking the stakeholders are very potential partners for the CDRTs and the local emergency response structure. Especially Bumi Hills are interested in the project and sees a mutual benefit in a partnership with the fishing camps.

National Parks

Tashinga National Park office and Bumi Hills Foundation and -Anti-Poaching Unit sustains the surveillance of anti-poaching and nature resources in the area. Both stakeholders experiences challenges with the fishermen fishing illegally on the lake. In the effort to reduce the illegal fishing the anti-poaching units patrols the lake and will confiscate equipment and arrest fishermen guilty in major delinquencies. The National Parks are also using a more preventive approach by facilitating educational activities in the camps based on dialogue with the fishermen. The parks and especially Bumi Hills Foundation wants to cooperate and coexist with the fishing camps and to assist in emergencies. This means that they want to be an active part of the solution regarding safety on the lake and similarly wants to encourage the fishermen to fish legally. The role and mandate of the National Parks is described in the *Kariba Lakeshore Combination Master Plan*.

Both stakeholders have equipment to assist in emergencies including speedboats, lifejackets, VHF radios, cellphones, wifi, spotlights/flashlights and Tashinga have night-vision equipment used by the rangers at night. Bumi Hills have their own weather-station. See Annex (D) for complete inventory of skills and equipment.



Figure 7 - Rangers from Bumi Hills assists and transfers an injured fisherman to Kariba Hospital

⁸ District Development Fund (DDF) are the only stakeholder sufficient equipment and are not able to assist in emergencies.

Private organizations and lodges

Padenga is a private crocodile farm employing upon 300 people from the communities who lives in a compound next to the farm with their families housing approximately 1200 people. Padenga have no legal interests in the fishermen and experiences no challenges with the fishing camps. Padenga are investing in the local communities and have funded constructions of schools and latrines etc. They also offer free transportation to Kariba Town every week for the communities. In 2016 they have donated 60 tons of maize into the communities by food-for-work. Padenga have no legal or historical interest in the fishing camps but wants to be engaged in the local communities and to assist in emergencies for other reasons including moral obligations and to build up goodwill within the communities.

Tiger Bay Resort is a relatively small safari lodge located at the outlet to Ume River. The lodge has 18 employees but has experienced a decrease in the number of visitors during the last couple of years. Tiger Bay is aware of the problem with fishermen struggling with hazards on the lake and has assisted in emergencies multiple times and brought injured fishermen to Kariba Town Hospital by speedboat. The lodge has 5 speedboats, VHF radios, spotlights/searchlight on two of the boats and is willing to assist in emergencies on the lake. See Annex (D) for complete inventory of skills and equipment.

Health clinics and hospitals

Mola and Chalala health Clinics are the two public health clinics closest to the fishing camps. Both clinics are basic health clinics funded by the government and employ 3-4 nurses. They deal with common diseases like malaria, HIV, cholera, diarrhea, pulmonary diseases and smaller injuries caused by animal attacks. The clinics are not able to treat open wounds, lesions and other critical injuries and will in these cases transfer the patient to Siakobvu Hospital by requesting an ambulance from Siakobvu. The opening hours for the health clinics are 7.30 a.m. to 16 p.m. during the weekdays and 7.30 a.m. to 13 on Saturdays. Both clinics have a nurse on standby outside opening hours 24/7/365. It is important to note that there is no mobile signal at Mola Health Clinic and that staff have to walk 800m up the road to make and receive calls.

Padenga (Crocodile Farm) have a private Health Clinic for internal use but are willing to receive patient from the communities. The opening hours are 7 a.m. to 16 p.m. during the weekday, but the nurse is on call 24/7/365.

Siakobvu Hospital is a small hospital with 13 nurses and no doctors. The hospital receives patients from Mola, Chalala, Mayoutte and Negande clinic and has an ambulance⁹ to transfer patients from the local health clinic and further to the provincial hospital in Karoi and the district hospital in Chinoyi. Siakobvu Hospital makes in average 8 transfers to other Hospitals a month and the ambulance will not be available during these transfers. The hospital has a larger capacity than the health clinics but is not able to make surgeries and treat larger lesions and injuries. Depending on the size of a trauma or injurie patients will be transferred to the provincial hospital in Karoi or the district hospital in Chinoyi.

Nyaminyami Police Department

The Nyaminyami Rural District Police is seated in Siakobvu. The police register and investigate incidents on the lake within the district jurisdiction. They have a speedboat which is rarely used because of the expensive running costs and they will often rent a boat from Bumi Hills instead. The police have a long response time to Lake Kariba and are rarely present at the scene of an incident.

⁹ A Land Cruiser without medical equipment
WB/GFDRR: A02-3.2.6 CDRT Needs Assessment Report

3. Mitigation, preparedness and response

The fishermen are highly vulnerable to hazards on the lake due to insufficient safety measures including preparedness and response capacities.

In effort to strengthen the resilience amongst the fishermen, it is import to investigate how to mitigate the likelihoods and consequences of a disaster on the lake. This means that the two main focuses will be on preparedness and mitigation measures before an incident occurs as well as on the emergency response when an incident has struck.

Risk appetite

The fishermen's risk appetite is set by the situation on livelihoods within the households. The fishermen fears and respects the lake and are aware of the risks related to the fishing trips. This means that their risk appetite depend on the current need for food and income within the household. A fisherman will not go on the lake on a windy day, if the situation on livelihoods allows him not to. In case the household is without food he is more likely to go, in effort to provide for food and income.

Water safety – basic safety measures

The fishermen lack sufficient equipment and safety measures. Most of the fishing boats are in deficient state and are dangerous to use. Msampa has the most urgent situation on boats with the highly vulnerable tine-plate boats. Boats are however relatively expensive and the fishermen cannot afford to invest in new and better boats. When the fishermen are at the lake they bring a knife to cut off close in effort to lap suddenly emergent leaks. While new boats are unrealistic to afford for the camps, tools and repair-kits can be a more cost-.realistic measure to make the existing boats safer.

The small fishing boats are unstable and vulnerable to winds and waves. While it is impossible to make a total avoidance on the boats to capsize it is possible to limit the damages and dangers when it happens. In order to do this lifejacket and swimming skills are essential. It is estimated that 20-25% of the fishermen possess a lifejacket. The fishermen expressed that they wants lifejacket and will buy them, themselves if they could afford them¹⁰. An important consideration in this regard is whatever they would use the lifejackets if they had the opportunity. On one side the lifejackets can be annoying while working at the lake all night. The lifejackets might not be a sustainable solution if the fishermen cannot wear them, while they are working. On the other side lifejackets can be worn near the lakeshore where the likelihood of being capsized by a hippo is higher than at deep water and the fishermen can take of the lifejacket while working with the nets on deep water. If strong winds and waves then surprise them, they can put on the lifejackets, of which they brought in the boat. Nevertheless lifejackets is a relatively expensive solution if they are not used. Therefore they should only be provided for fishermen who will use them. A sustainable solution could be to consider a discount or micro-loan opportunity for the fishermen, to give them the opportunity to choose themselves if a lifejacket is an important investment.

Swimming skills are another essential measure when working at the lake, especially if there is no lifejackets present. Sufficient swimming skills are essential when a boat capsizes to be able to make it to land. When a boat capsizes near the lakeshore even very basic swimming skills can be lifesaving in order to swim a short distance to the shore. Swimming skills can also be lifesaving far from the shore, if the boat is floatable after capsizing. On the other side, if the boat sinks far from the shore it will require more than basic swimming skills to swim to the shore. It will be realistic to teach basic

¹⁰ Lifejackets is for sale in Kariba Town for 25-30 USD each.
WB/GFDRR: A02-3.2.6 CDRT Needs Assessment Report

swimming skills to fishermen in good physical shape within 3-4 days of training, which will make them able to swim up to a few hundred meters depending on their physical shape.

It is essential for the safety that the fishermen are able to call for help in the moment an emergency occurs on the lake. 30-40% of the fishermen within the camps have a cellphone. Those who have one bring it on fishing trips, but are challenged by the low battery-life and no opportunity to recharge the phone at the lake. Another issue with the phones is that they are not waterproof and unreliable in emergency situations at water. Waterproof VHF radios will be the most optimal option for the fishermen to bring at the lake because they are fast and easy to use and more reliable in emergency situations. All stakeholders at the lake and lakeshore including the Lake Navigation Control who coordinates emergency responses are in possession of VHF radios. In case the phones remain the only communication option for the fishermen it is important to streamline procedures of emergency calls including information and phone numbers of emergency responders including the CDRTs, Lake Navigation Control and potential stakeholders.

Another safety issue at the lake is the fact that most fishermen fish at night without any lights on the boat. This makes emergency situations even more dangerous because it is hard and in most cases impossible for a rescue team to identify the deprived fishermen and to make a successful search and rescue operation. A solution can be to invest in relatively cheap flares which can be lit in the boat in case of an emergency. The flares can be seen from a long distance and will make other fishing boats or response teams able to identify and assist the deprived fishing boat. One consideration about the flares is the sustainability, which can be doubted because of the likelihood of misuse and durability. The flares should be brought in a waterproof and floating bag/box which is easily accessed in the boat and the CDRT should keep account and register when a flare is used. Another useful search and rescue device is a whistle. The whistle can be used as an attention signal in emergencies during the daylight and at night if no flare is accessible. The whistle is useful at incidents near the lakeshore or near other boats. The range depends on the wind speed and direction. A whistle is a very cheap investment but can be crucial in an emergency situation.

A simple but nevertheless essential safety measure is to encourage the fishermen to enter the lake in pairs. This means that one fishing boat should never go alone on a fishing trip. If 2-3 or even more boats go together it will decrease the consequences of accidents significantly, when they can assist each other when incidents occur. Based on statements from the fishermen they will usually go alone (one boat with two fishermen) which is one of the reasons why many incidents are not discovered before the next morning when the boat does not return to the camp.

First-aid

The fishermen lack sufficient and basic skills within water safety including first-aid and swimming skills.

Basic first-aid and lifesaving skills are fundamental safety measures in regard of water safety. The two most common and life-threatening conditions for the fishermen are drowning situations and injuries caused by animal attacks. Both of these medical conditions require a timely and effective response in order to rescue a patient. Both the immediate response at the incident scene and the professional medical treatment are essential. Drowning situations require effective and timely CPR (within minutes) and has to be initiated as fast as possible. Injuries caused by crocodiles and hippos are often life-threatening conditions and require immediate treatment of major bleedings, open-wounds, open fractures and psychosocial interventions to prevent psychological shocks.

In order to respond appropriately to acute medical conditions the following three steps are of high priority:

1. To make early recognition and call for help (To ensure the proper type of treatment/response and secure timely professional assistance).
2. To give early and effective life-saving first-aid (CPR and treatment of bleedings, wounds etc.)
3. To get early professional post resuscitation care/professional assistance.

This means that it is very essential for the CDRTs to have the proper first-aid skills, communication equipment and emergency-procedures to be able to call for professional assistance. Similarly it is important that the fishermen have basic first-aid skills to ensure early life-saving first-aid since they in most cases will be the first-responders to accidents happening far from the camp where the CDRT are present. Each fishing boat should also be able to make emergency calls or signals to call for assistance from either the CDRT or local stakeholders depending on the location of the incident scene. Sibilobilo is the only fishing camp with a professional trained nurse and none of the fishermen have any first-aid skills. The types of incidents occurring to the fishermen on the lake are very likely to require an immediate response of life-saving first-aid which makes first-aid training within the camps a high priority not only to the CDRTs but to all fishermen.

Early Warning System

Approximately half of the incidents on the lake are caused by strong winds, storms and waves far from the lakeshore. When the fishermen are surprised by these events far from the shore they cannot do anything but follow the direction of winds and waves to keep the boat from capsizing. At the moment the fishermen have no access to weather-forecasts or early warnings on storms and winds and are often surprised at the lake by these events. An early warning system will definitely increase the security. The messages have to be delivered timely and with sufficient information. It is important to consider how the messages are delivered and what kind of information should be included. Since 30-40% of the fishermen have cellphones it would be relevant to consider WhatsApp or SMS as the appropriate format. It is fair to expect that the number of cellphones within the camps will increase in the future which makes the phones to a sustainable solution. Another choice could be to deliver verbal warnings via a VHF radio which have both pros and cons. The VHF radio is more reliable at the lake due to battery-life and water resistance and can similarly be used as a communication device in emergencies. A verbal warning requires at the other hand, that the fishermen listen to the radio at the time when the warning is delivered. If the warning is received as a text on the phone it is available at all time. It is also important that the phrasing and detail level of the warning is issued at a level and language that is easy to understand and interpret by the fishermen. This means that technical terms should be avoided and that the information should be phrased short and simple.

Bumi Hills Foundation has a private weather-station at their location which is accessed for free online. It would be recommendable to assess the features and opportunities within the weather-station and consider if the weather-station can complement the early warning system.

Response

The response times on emergencies within NRD and Lake Kariba are on a alerting level due to the insufficient infrastructure within the rural areas and long distances to appropriate healthcare and professional assistance. The response time to nearest hospital with capacity (Karoi and Chinoyi) to handle major injuries are 6-8 hours (Annex C) depending on various factors. The Lake Navigation

Control and Lake Captain are the coordinating authority on emergency response on the lake¹¹. The emergency response within the fishing zones in NRD is marred by informal response structures and coincidences. The local stakeholders in the area with response capacities are Bumi Hills Foundation/Anti-poaching Unit, Tashinga National Park Office, Tiger Bay Lodge and Padenga. All stakeholders do often assist the fishermen in emergencies on the lake and are assisting by coincidence or when fishermen calls for help by phone. They have no legal obligation to participate in emergency responses on the lake but all of them feel a moral obligation towards the local communities and wants to assist when incidents occurs.

The local stakeholders have sufficient or almost sufficient equipment and skills to do search and rescue operations on the lake and there is a clear potential and capacity to establish an effective emergency response structure within the area¹². In order to optimize and strengthen the response it is necessary to construct a sustainable response-structure with procedures and agreements between stakeholders and fishermen. The response structure should both include plans for search and rescue operations and for transportation to Kariba Town Hospital¹³.

Bumi Hills, Tiger Bay and Padenga have fast going speedboats and can be on incident scenes within the fishing zones in 15-50min. Tashinga National Park Office have a boat stored on a trailer close by the office and have a slower response time on 40min – 1h 10min. All stakeholders have VHF radio and cellphones and are accessible 24/7/365.

There are no responders located within zone 8 and 9 and therefore it is recommendable to get in contact with Elephant Point Lodge and Sim's Lodge, two new stakeholders who haven't been a part of the assessment. Both are located in zone 8 and 9 and have potential to shorten the response time to fishermen from Sibilobilo and Masviakabola due to their location.

Emergency plans and response structure

In the effort to formalize and optimize emergency plans and response structures it is important to involve the stakeholders to give co-ownership and to make plans realistic and functional.

The Lake Navigation Control and Lake Captain are the coordination authority and all responses should be coordinated through the Lake Captain:

- To ensure that the stakeholder closest to the incident scene responds to the accident.
- To avoid a double response when only one response-team is needed/activated.
- To activate the appropriate number of response teams in proportion to the extent of the incident. Search and Rescue operations might need more than one response-team in order to make a proper and effective response.
- To ensure that no stakeholders are overloaded with response activities.
- To avoid misuse of assistance requests.
- To be the coordinating authority between fishermen implemented in an emergency, the CDRTs and stakeholder response-teams.

It is important to consider the structure and composition of the response-teams. When incidents happen close to the camps, which are very usual due the shallow waters, the CDRTs will often be the first responders. In these situations it is important to have a clear coordination and communication

¹¹ The Lake Navigation Control and Lake Captain is seated in Kariba Town and was not a part of the fieldtrip. It would have benefitted the report to have had a meeting with these stakeholders.

¹² Find inventory on potential capacities in Annex (D).

¹³ Find table of response-time to professional healthcare in Annex (C).

between all involved actors to avoid cases where the CDRT brings a patient to Mola or Chalala health Clinic and a stakeholder similarly are responding and arriving at the incident scene. To make the response structure sustainable it is important that no response-teams are activated unnecessarily or on false alarms.

The recommendation is that the Lake Navigation Control and Lake Captain should be the coordination authority. In case that the Lake Navigation Control is not willing or able to coordinate these events it will be necessary to establish an internal coordination system.

The CDRT and stakeholder-response-teams should be able to decide whether or not a patient can be brought to a health clinic or have to be brought to Kariba Town Hospital by boat. To bring a patient to Kariba by boat is relatively expensive in fuel and relatively time consuming for the stakeholders and should only be done in cases where it is deemed absolutely necessary. Patients should be brought to a health clinic if appropriate and sufficient.

The response procedures should include a Plan/division of response areas:

Zone 7 – Bumi Hills, Padenga, Tiger Bay, Tashinga NP

Zone 8 – Bumi Hills and Padenga

Zone 9 – Bumi Hills

If Elephant Point and Sim's Lodge are willing and able to be involved a more optimal division is:

Zone 7 – Bumi Hills Padenga, Tiger Bay, Tashinga NP

Zone 8 – Bumi Hills and Elephant Point

Zone 9 – Bumi Hills, Elephant Point and Sim's Lodge

It is also important to consider who should have the authority to decide if a patient should be brought to a health clinic or transferred directly by water to Kariba Town Hospital. And who should pay for the transport.

Educational activities

The response structure requires close cooperation and willingness from both the stakeholders and the fishing camps. The National Parks are unpopular amongst the fishermen because they confiscate their nets and arrests fishermen for illegal fish, which makes the fishermen believe the National Parks just want to sabotage their fishing. Nevertheless do the fishermen not have any options in regard of emergency response and are willing to cooperate and receive help from the stakeholders. The National Parks feel a human and moral obligation to be a part of the response structure. In addition to this, they also see an opportunity for a mutual benefit. By working closer together with the fishermen and assisting them in emergencies they can get a chance to prevent and change the illegal fishing habits within the camps.

In order to improve and strengthen the relationship between the two parties it will be necessary to facilitate a process of reconciliation based on dialogue between fishermen and National Park representatives. At the same time it is important to encourage the fishermen to stay legal by facilitating educational activities to improve their knowledge and understanding of the illegal fishing issues.

These activities are important to make the cooperation on emergency response work on a daily basis and to ensure a mutual benefit where the fishermen saves lives and livelihoods and similarly decreases the level of illegal fishing which will benefit the National Parks.

4. Recommendations

4.1. Emergency Response Procedures

In order to improve and optimize the emergency response on Lake Kariba it is important to formalize the response structure and to make pre-agreements with all stakeholders. The recommendations are based on the findings in this report and should be considered in the further implementation process.

High Priority:

- **Emergency coordination:** The Lake Navigation Control and –Captain should be the coordinating authority for the local emergency responses. ZRCS should facilitate establishment, agreements and dialogue between response-stakeholders, Lake Navigation Control, CDRTs and fishermen. If the Lake Navigation Control for some reason cannot be the coordination authority, another unit should be found. This could be the Community Disaster Response Specialist Team or Bumi Hills Foundation. It will require further training/education to provide specialist knowledge on triage, first-aid, emergency-response, local response-structure and emergency coordination. The emergency coordination should include a communication-chain. Who can talk to whom during a disaster, to avoid error messages and misunderstanding.
- **Pre-agreements** on the emergency response structure and -areas with Bumi Hills Foundation/- Anti-Poaching Unit, Tashinga National Park Office, Padenga and Tiger Bay Lodge.
- **Response-areas:** Following response areas are recommended due to response time and location:
 - Zone 7 – Bumi Hills Padenga, Tiger Bay, Tashinga NP**
 - Zone 8 – Bumi Hills and Elephant Point**
 - Zone 9 – Bumi Hills, Elephant Point and Sim's Lodge**
- **Elephant Point Lodge and Sim's lodge** are potential stakeholders and can cover zone 8 and 9 with response-teams but have not been a part of the assessment and need to be consulted and assessed.
- **Emergency Exercise:** Should be carried out to test and evaluate the new response-structure and to improve the effectiveness of the response.

Desirable:

- **Search and Rescue + First-aid skills:** Improved and specialist skills within Search and Rescue and First-aid will benefit the effectiveness of the emergency responses.

4.2. Community Disaster Response Teams (CDRTs)

The CDRTs should have the sufficient skills, equipment and knowledge based on the following recommendations:

High priority:

- **Life-saving first-aid skills:** Including the following elements: CPR, treatment of bleedings, open wounds, lesions, fractures and psychosocial first-aid. The CDRTs should be able to assess the medical needs for an injured patient in order to determine the need for professional healthcare.
- **Communication equipment:** The CDRTs should be in possession of VHF Radios, cellphones and contact details on all relevant response actors and be familiar with the communication chain.
- **Disaster Response:** The CDRTs should be familiar with basic knowledge of disaster preparedness and response.

- **Swimming and rescue skills:** To be able to assist in emergencies occurring close to the lakeshore and ensure personal safety during a rescue.

Desirable:

- **Spotlights/searchlights** in order to carry out search and rescue operations
- **Flares and Whistle** to mark location of an incident scene.

4.3. Mitigation/preparedness measures within the fishing camps

Following mitigation and preparedness measures are recommended within the fishing camps:

High Priority:

- **Basic first-aid skills:** The fishermen should be able to do basic life-saving first-aid including CPR, treatment of bleedings and open-wounds.
- **Swimming skills:** The fishermen should receive basic swim training to be able to swim short distances. An assessment should be carried out to assess if it is possible to do swim training on Starvation Island without risks of crocodiles and hippo attacks. Two fishermen from each camp (2x3) should receive trainers training to become swimming instructors (The swimming instructors should be in good physical shape and already be a part of the CDRTs). The instructor will provide swim training for all fishermen in the camps.
- **Lifejackets:** Bumi Hills have funds for lifejackets which needs to be approved by the NRDC. ZRCS should facilitate the approval and help conduct a handout of lifejackets to the fishermen. The handout should not be for free, to secure that only fishermen who will benefit from and use the lifejackets will get one. The handout could be conducted by the concept work-for-lifejackets or for small payments or microloan.
- **Whistle:** Whistles are an effective attention signal and very cheap and should be handed out to the fishermen.
- **Go-together-campaign:** The fishermen should be urged to go in pairs in effort the increase their safety. Educational activities on water safety should be conducted to make them understand how it is more dangerous to alone on the lake alone.

Desirable:

- **Flares:** Flares are recommended as an emergency-signal. During the night it is more reliable than the whistles but unfortunately more expensive and less sustainable if not kept in a waterproof bag.
- **Tools and materials to repair the boats:** Many boats suffer from damages and leaks and the fishermen are without both tools and materials to repair the damages. By giving them the items to repair the boats the safety will increase.

4.4. Educational activities

In order to establish the partnership on emergency response it is important to ensure a mutual benefit for both fishermen and stakeholders.

- **Decrease in the level of illegal fishing:** It is important that the fishermen decrease the level of illegal fishing. The fishermen should be encouraged to do so by educational activities including elements like the role and mandate of the National Parks, fish resources etc. In order to make them understand why the National Park supervises the fishing zone and why overfishing is not sustainable for the fishing camps as well. The educational Activities should be conducted in close cooperation with the National Parks.

4.5. Community Early Warning System (CEWS)

The CEWS are a very essential mitigation measure for the fishing camps. The following points are recommendations towards the system:

- **Warning messages:** Should be delivered via SMS or WhatsApp and can eventually be complimented by verbal warnings via VHF Radios. The warnings should be easy accessible without technical terms and with simple phrases that is easily understood by the fishermen. The messages should be delivered in time to warn the fishermen before they are at the lake.
- **Bumi Hills Weather Station:** An assessment on the weather-station should be conducted in order to determine if the weather-station is sufficient in itself or can complement the new weather-station for the CEWS.

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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5. ANNEXES

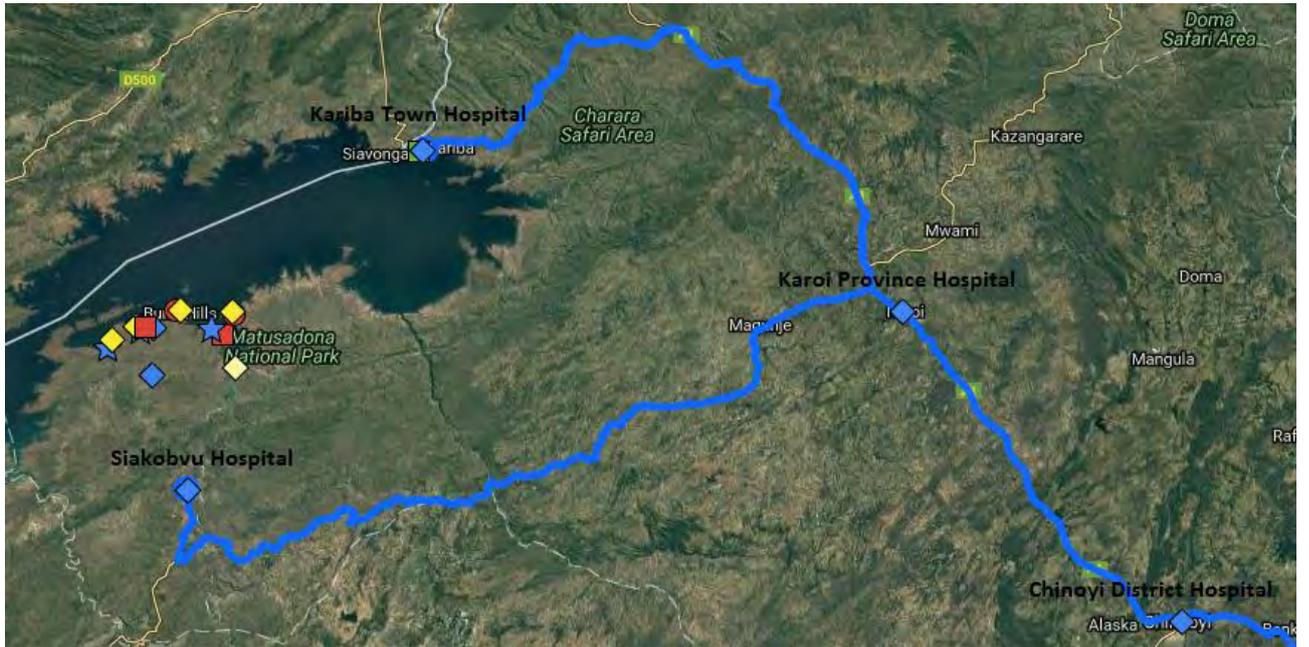
ANNEX (A) - CDRT MISSION & NEEDS ASSESSMENT OBJECTIVES

The DRC HQ mission will assist ZRCS, and in particular the project field team, in the following:

1. Assess and prioritise the basic and specialist skills required by the CDRTs in responding to life-threatening incidents on the lake; and outline key components & methodologies of trainings related to skills required;
2. Assess, outline and prioritise equipment needs required by the CDRTs in responding to life-threatening incidents on the lake;
3. Assist ZRCS field team in discussions with key local (rural & urban) stakeholders with potential skills or equipment capacity:
 - explore potential, and willingness, for partnership/incorporation with CDRT (including possible challenges in acceptance by the target fishing community – and recommendations to mitigate these;
 - Conduct inventory of potential skills, equipment, or other resources that these stakeholders could commit;
4. Make recommendations, based on field level observations, regarding the structure and composition of the CDRTs and how they could best link with local early warning and response structures
5. Make recommendations on the proposed Community Early Warning system (in particular warning/alert/response messaging, transmission of such messages within the community) as appropriate.

ANNEX (B) – MAP OF NYAMINYAMI RURAL DISTRICT

<https://www.google.com/maps/d/viewer?mid=1C6XG2CHynJKCikl9rQATqFHTTY>



ANNEX (C) – RESPONSE TIME TO CLINIC/HOSPITAL

Emergency response time			
Location	Destination	Mode of transport	Response / travel time
Response time to Health Clinic / Hospital			
Msampa	Mola Health Clinic	Vehicle	1h
		Walk	2h 30min
Msampa	Padenga Health Clinic	Fisher-boat	55min (30min boat + 25min walk)
		Speedboat	7min
		Vehicle	30min
		Walk	2h (by road)
Msampa	Siakobvu Hospital	Various	2h 30min
Msampa	Karoi Hospital	Various	5h 30min
Msampa	Chinoyi Hospital	Various	6h 30min
Msampa	Kariba Town Hospital	Speedboat	1h 30min
Sibilobilo	Chalala Health Clinic	Fisher-boat	4h
		Speedboat	15min
		Vehicle	2h
		Walk	2h 30min
Sibilobilo	Mola Health Clinic	Vehicle	3h
		Walk	3-4h
Sibilobilo	Padenga Health	Speedboat	50min
Sibilobilo	Siakobvu Hospital	Various	4h 30min
Sibilobilo	Karoi Hospital	Various	7h 30min
Sibilobilo	Chinoyi Hospital	Various	8h 30min
Sibilobilo	Kariba Town Hospital	Speedboat	2h 3min
Masviakabola	Chalala Health Clinic	Fisher-boat	20min (10min boat + 10min walk)
		Speedboat	12min (2min + 10min walk)
		Walk	30min
		Vehicle	20min
Masviakabola	Padenga Health Clin	Speedboat	44min
Masviakabola	Siakobvu Hospital	Various	2h 30min
Masviakabola	Karoi Hospital	Various	5h 30min
Masviakabola	Chinoyi Hospital	Various	6h 30min
Masviakabola	Kariba Town Hospital	Speedboat	1t 50min
Response time to Incident scene (Local authorities: NP / NRDC)			
Siakobvu	Msampa	Vehicle	2h 30min
Siakobvu	Masviakabola	Vehicle	2h 30min
Siakobvu	Sibilobilo	Vehicle*	4h
Medical transfer to Hospital			
Mola Health	Siakobvu Hospital	Ambulance	1h 15min
Chalala Health Clinic	Siakobvu Hospital	Ambulance	2h
Padenga Health Clinic	Kariba Town Hospital	Speedboat	1h 30min (possible in 1h with fast speedboat)
Siakobvu Hospital	Chinoyi Hospital	Ambulance	4h
Siakobvu Hospital	Karoi Hospital	Ambulance	3h
Siakobvu Hospital	Kariba Town	Ambulance	6h
Siakobvu Hospital	Gokwe Hospital	Ambulance	3-4h
Siakobvu Hospital	Harare Hospital	Ambulance	6h

*Light injuries
 *Major injuries
 *Critical injuries

ANNEX (D) – RESPONSE CAPACITIES

Response capacity					
Stakeholder	First-aid skills	Search and Rescue equipment	Other Resources	Accessibility	Response time
Bumi Hills Foundation	2 persons w. first-aid training	1 speedboat	Funds for lifejackets	24/7/365	15-45min
	First-aid kit (deficient)	Weather-station	Mobile signal is good		
		1 vehicle	Airstrib		
Bumi Hills Lodge	10 persons w. first-aid training	6 vehicles (2 Land Cruisers)		24/7/365	
		4 boats			
		VHF, Wifi, cellphones			
Padenga	2-3 person w. first-aid training (RC volunteers)	Health Clinic (private)	airstrib (1-2 planes a week)	24/7365	20-50min
		3 speedboats, 2 small boats, 2 cargoboats	Funds the communities occasionally (schools, latrines, food, cash for work etc.)		
		VHF + phones on all boats			
Tashinga National Park Office	2 persons w. first-aid training	First-aid kit (not complete)	No phone signal at the office	24/7/365	40min - 1h 10min
		1 bananaboat w. 15 bhp			
		Night-vision equipment			
		VHF, Wifi, cellphones			
Tiger Bay	4 persons w. first-aid training	5 speedboats + 2 pontoon boats		24/7/365	20-50min
		Sportlight/searchlight			
		VHF radios, cellphones			
		3 vehicles			



CDRT BASIC TRAINING REPORT (Activity 3.2.6)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

VENUE	TARMARIND – KARIBA URBAN
& DATES:	19-21 SEPTEMBER 2016
	CHALALA PRIMARY SCHOOL – KARIBA RURAL
	24-26 SEPTEMBER 2016



Figure 1: Kariba urban Community Disaster Response Team

OBJECTIVES

- ❖ To empower communities thereby building community resilience in order to better prepare for and respond to emergency situations.
- ❖ To save lives and properties by providing where possible first response to the communities during times of emergencies or disasters.
- ❖ To assist in relief and assessment after a disaster as directed by the local disaster and development plan.
- ❖ To obtain full understanding of the call-out system and coordination during emergencies.
- ❖ To equip the response team with information on agreed international standards of basic requirements needed for response during disasters.

Introduction

Community Disaster Response Team (CDRT) training is a crucial program in an effort to engage everyone in the community in making their communities safer, more prepared and more resilient when disasters occur. Community based preparedness planning allows everyone to prepare for and respond to anticipated disruptions and potential hazards following a disaster. Following a disaster there is always a period when the emergency services will be unable to quickly reach the victims due to the size of the area affected communication problems or impassable roads. Therefore, the CDRT, as the first responder, is designed to complement and strengthen the existing role of the civil protection within the community by helping to increase its capacity through provision of immediate initial assistance to the victims before other stakeholders intervene. The Red Cross in collaboration with stakeholders from the Zimbabwe National Army (ZNA), Zimbabwe Republic Police (ZRP), District Administrator, Nyaminyami Rural District Council (NRDC) and Social Services trained and equipped the two Community Disaster Response Teams to carry out emergency first response when disasters occur. The training in Kariba urban took place at Tamarind Lodge and Kariba rural training took place at Chalala primary school in ward one. All the topics that were covered in Kariba urban were also covered in Kariba rural.

There were 5 facilitators in Kariba urban: namely 1 representative from Zimbabwe National Army (ZNA), 2 District Administrator representatives, 1 Lake Navigation Control and 1 ZRCS Provincial Disaster Response trainer (PDRT). In Kariba Rural there were 4 facilitators namely NRDC representative, Social Services, Zimbabwe Republic Police (ZRP) and ZRCS PDRT member. Participants for the meetings were Fishermen, NRDC Chairman (who is also the councillor for Mola ward 3), Red Cross Volunteers & Youths, Danish Red Cross HQ Disaster Management intern, 1 ZRCS Field Officer and 1 Field Assistant. For Kariba Urban there were a total of 18 participants (15M:3F) and 5 facilitators (5M:0F); and for Kariba Rural there were a total of 19 participants (12M:7F) and 4 facilitators (4M:0F) – as per the table overleaf.

PARTICIPANTS					
KARIBA URBAN	M	F	KARIBA RURAL	M	F
Simbarashe Fisheries Representatives	3	0	Sibilobilo Fishing Camp Representatives	3	2
Chibwe Fisheries Representatives	2	0	Masviakabola Fishing Camp Representatives	3	1
Nyanyana Fisheries Representatives	2	0	Msampa Fishing Camp Representatives	3	3
Machariga Fishing Company Representatives	3	0	Council Chairman	1	0
Zimowa Fisheries Representatives	2	0	DRC HQ Disaster Management intern	1	0
ZRCS Volunteers and Youth	2	2	ZRCS Staff	1	1
ZRCS Staff	1	1			
TOTAL (18)	15	3	(19)	12	7
TRAINERS/FACILITATORS					
KARIBA URBAN	M	F	KARIBA RURAL	M	F
Zimbabwe National Army x 1	1	0	ZRCS PDRT x1	1	0
District Administrator's Office x 2	2	0	Department of Social Services x 1	1	0
Lake Navigation Control x 1	1	0	Zimbabwe Republic Police x 1	1	0
ZRCS PDRT x 1	1	0			
TOTAL (5)	5	0	(3)	3	0

Table 1: Facilitators and Participants (Urban & Rural)

THE BASIC CDRT COURSE

Day 1	Day 2	Day 3
<ul style="list-style-type: none"> • Pre-training Test • Disaster Management Overview • Stakeholder Coordination • Safer Access (Framework) • Disaster Risk assessment • Relief Management • Public Health in Emergencies 	<ul style="list-style-type: none"> • Camp and Shelter Management • Team planning and coordination • Media in Emergencies • Cross Cutting Issues in Disaster Management • Sphere Project 	<ul style="list-style-type: none"> • Water and Floods Safety • Local Disaster Response Coordination and Communication / Early Warning and Callout Systems • Resource Mobilisation Plan • Post Training Test



Figure 3: Kariba Urban CDRT group work



Figure 4: Kariba rural CDRT



Figure 5: CDRT pitching a tent shelter



Figures 6-7-8-9: Kariba Rural CDRT group work and presentations

Pre- and Post-test Scores

CDRT Basic Course	Average Score (%)	
	Kariba Urban	Kariba Rural
Pre-Course Test	41%	36%
Post-Course Test	68%	73%

From the Group presentations and in class participation, generally, Kariba rural CDRT was energetic; their presentations were excellent as compared to the Kariba urban CDRT. Kariba rural average score percentage for pre-test was lower than Kariba urban as shown in the above table but they grasped the contents quickly as compared to urban team as shown by a higher post-test average score of 73% compared with 68% of urban CDRT. However, all the teams showed commitment during the training days as evidenced by attending the training every day and participating in all the activities.

CHALLENGES FACED DURING CDRT TRAINING IN BOTH URBAN AND RURAL

- The training could not cover all the required topics due to limited number of days allocated, especially First Aid which is a major response activity when disasters occur. First aid training will be incorporated in to the specialised CDRT training
- Limited training resources e.g. tarpaulin, tents

RECOMMENDATIONS

- CDRTs should be trained in First Aid to strengthen their response skills since one of the major hazard in fishing camps is human animal conflict which leaves many people injured and dead
- The training should be allocated enough time that allows all topics to be covered.
- Provision of the required training equipment.
- Simulations should be done regularly at least once per 3 months in order to check the level of response of the teams.

A day after completing the training, a fisherman from Sibilobilo fishing Camp was attacked and seriously injured by a Hippopotamus and his genitals too were reported to be seriously injured as shown in the figure below, the Sibilobilo CDRT participants quickly attended to him, however, they could not provide much assistance due to lack of first aid skills hence the need to train them in first aid.



Figure 10: Sibilobilo fisherman attacked by a hippopotamus

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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COMMUNITY EARLY WARNING SYSTEM (CEWS) TRAINING REPORT (Activity 3.2.6)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

VENUE & DATES:	NYAMINYAMI RURAL DISTRICT COUNCIL BOARDROOM – KARIBA RURAL
	2 – 4 NOVEMBER 2016

OBJECTIVES:

- Build an understanding on the principles of Community Early Warning Systems (CEWS)
- Build an understanding of the project’s 4 core components of CEWS

INTRODUCTION

A total of 16 volunteers (9M / 7F) have been identified to support the implementation of a Community Early Warning System (CEWS) in Kariba. They are drawn from the 3 fishing communities (Msampa, Sibilobilo, Masviakabola) where they participate in the project as Community Early Warning Champions. Between 2 and 4 November 2016, a training workshop was conducted at Nyaminyami Rural District Council (NDRC) Boardroom where all the 16 CEW champions attended. The ZRCS Disaster Management Officer (DMO) and representatives from the Meteorological Services Department (MSD) and Lake Navigation Control (LNC) were the main facilitators of the workshop. The training workshop was also attended by members of the NDRC and by two members from the national-level project steering committee from MSD and the Ministry of Rural Development.

Fishing Camp	Male	Female	Total
Msampa	3	4	7
Sibilobilo	3	2	5
Masviakabola	3	1	4
Total	9	7	16

WORKSHOP PROCEEDINGS

The training programme started with risk knowledge where volunteers outlined the different hazards they face on the lake. Crocodile attacks and wind storms were cited as the main hazards on the lake. MSD presented on common hydro-meteorological hazards. The presentation noted that the number of hydro-meteorological hazards was on the increase due to the effects of climate change and understanding these is important in order to design effective climate risk informed disaster mitigation and risk reduction measures.

The session on monitoring was a discussion where volunteers outlined various signs they use in monitoring local hazards, and the parameters they monitor. Three volunteers were identified to record local signs gained from indigenous knowledge system to be used as the basis for comparison with scientific data disseminated via MSD. A case study was done using the 2016 – 2017 seasonal forecast. It was well received and several copies in local languages were disseminated to extension workers and farmers.

A comprehensive presentation of the ‘bolts and nuts’ of CEWS was done- definitions, principles and components. The purpose of this presentation was to give more theoretical and conceptual grounding to (volunteers) those who owns and manage the CEWS.

A discussion led by MSD and LNC on ‘Warning communication’ focused on checking whether monitoring information (weather data from MSD observation points) is being translated into actionable messages understood by those that need, and are prepared, to hear them. A mock EW message from Lake Navigation was used for discussion. Some few volunteers did not have phones to receive the messages. Although all the technical terms used in weather forecast were explained, some participants still felt more can be done to make weather forecast jargon more externally user friendly.

Response capability was the last discussion where contingency/response plans were drafted. Volunteers developed resource/ capacity matrix and came up with suggestions of the relevant materials required for use by CDRTs as well as how this material will be managed. Volunteers expressed concerns about the absence of a coordination platform for disasters in Kariba rural. NRDC said it was possible to make proposals to establish a ‘subcommittee of the civil protection’ in Kariba rural provided it is launched by the DA and get his guidance.

Most volunteers ended the workshop by showing interest that they are prepared and ready to react to early warnings.

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery.



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Annex: CEWS Workshop Programme

Community Early Warning System (CEWS) Training

Dates: 2 – 4 November 2016

Venue: Nyaminyami RDC

Day/Time	Wednesday	Thursday	Friday
8.00 –10.00	Arrival at Venue Welcome and Introductions Objectives of the Workshop Expectations and Ground rules	Recap of Day one Group Presentations Introductions to Session three	Recap of Day two Group Presentations Introductions to Sessions five
10.30 – 11.00	Tea/Break		
11.00 – 13.00	<p>Session 01: Risk knowledge Builds the baseline understanding about risks (hazards and vulnerabilities) and priorities in Kariba <i>Related Questions</i></p> <ul style="list-style-type: none"> • Are the hazards and the vulnerabilities well-known? • What are the patterns and trends in those factors? • Are risk maps widely available? <p>Presentation on Hydrometereological hazards - Meteorological Services Department</p>	<p>Session 03: The ‘nuts and bolts’ of Early Warning</p> <ul style="list-style-type: none"> • Definitions and concepts • Introduction to the four core early warning system components • Dispelling early warning myths • Principles of Early Warning <p>Presentation on CEWS (guided by IFRC documents) – ZRCS</p>	<p>Session 05: Response capability Response capability insists on each level being able to reduce risk once trends are spotted and announced. Build national and community response capabilities Early warning equipment needs assessment <i>Related Questions</i></p> <ul style="list-style-type: none"> • Are contingency/response plans up-to-date and tested? • Are local capacities and knowledge made use of? • Are people prepared and ready to react to early warnings?
13.00 – 14.00	Lunch		

Day/Time	Wednesday	Thursday	Friday
14.00 – 16.30	<p>Session 02: Monitoring and warning service</p> <p>Hazard monitoring and early warning services</p> <p><i>Related Questions</i></p> <ul style="list-style-type: none"> • Are the right parameters being monitored? • Is there a sound scientific basis for making forecasts? • Can accurate and timely warnings be generated? <p>Case study & Practical Session: Zim 2016 -2017 Weather Forecast – Meteorological Services Department</p>	<p>Session 04: Warning communication</p> <p>Warning communication packages the monitoring information into actionable messages understood by those that need, and are prepared, to hear them.</p> <p>Communicate risk information and early warnings</p> <p><i>Related Questions</i></p> <ul style="list-style-type: none"> • Do warnings reach all of those at risk? • Are the risks and warnings understood? Is the warning information clear and usable? <p>Practical exercise: Mock EW messages (SMS) from Lake Navigation – Lake Navigation Control</p>	<p>Practical exercise & Group work:</p> <ul style="list-style-type: none"> • Development of contingency plans • Development of resource/capacity matrix • Identification of focal persons to do ‘monitoring’ and agreeing on forms <p>Workshop Evaluation</p>
END OF DAY			



COMMUNITY DISASTER RESPONSE TEAM (CDRT) REFRESHER TRAINING CONTINGENCY PLANNING REPORT

(Activity 3.2.6)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project



INTRODUCTION

In line with output 3 with the objective of ensuring that Early Warning should reach and serve people at community level, fishing communities have CDRTs that are trained to assist communities during emergencies and disasters. CDRT training is an important program in the effort to engage everyone in an effort to make their local communities safer, more prepared and more resilient when disasters occur. Community based preparedness planning allows everyone to prepare for and respond to anticipated disruptions and potential hazards. Following a disaster, there is always a period when the emergency services and first responders will be unable to react and this may be due to the size of the area affected, communication problems, impassable roads and lack of adequate resources.

From the 11th - 12th November 2017, 16 CDRT members from Msampa, Sibilibilo and Masviakabola received training on disaster response and Contingency Planning. The training was held at Msampa fishing camp with a total of 16 CDRT members (9M: 7F). The training was co-facilitated by ZRCS Field Officer & Field Assistant (1M: 1F).

In Kariba urban the training took place from the 4th - 5th December 2017 at Tamarind Lodge (Kariba) with total participants of 18 (11M: 7F). The trainings were facilitated by 2 ZRCS staff (FA & FO) after gaining experience from the training that was conducted in 2016 and the District Administrator (DA) (2M:1F). The

District Administrator, being the chairperson of the District Civil Protection Unit facilitated on stakeholder coordination and resource mobilisation during emergencies. The main output of the trainings were community driven Contingency plan informed by the major hazards affecting fishing communities. The Contingency plan will guide the communities to prepare for and respond to disasters. Trained CDRTs also complement and strengthen the existing role of the civil protection within the community by helping to increase disaster response capacity. It is envisaged that the contingency plan developed will go a long way in guiding the fishing communities when disasters occur so that destruction of property, injury to human life and deaths are minimised.

OBJECTIVES

- Provide community empowerment and resilience in order to better prepare for and respond to disasters.
- Come up with a practical contingency plan that will assist the fishing community to respond to disasters.
- Assist in relief and assessment after a disaster as directed by the local disaster and development plan.
- Fully understand the call-out system and coordination during emergencies in fishing communities.
- Equip the response team with a guiding document that will enable them to prepare for and respond to disasters or emergencies.
- Equip the CDRT members with first aid knowledge and techniques.
- Provide knowledge on first aid kit materials and how they are used.
- Understanding roles and responsibilities of first aiders during emergencies or disasters.
- Give the trained first aiders a guide on reporting format about casualty management or emergencies
- Discuss the role of the CDRT in the district civil protection committee

Kariba Rural & Urban attendance breakdown

Kariba Rural			
Participants			
Fishing camp	M	F	TOT
Msampa	2	5	7
Sibilobilo	2	1	3
Masviakabola	5	1	6
Total	9	7	16
Facilitators			
Name	Designation	M/F	
C. Chawhanda	Field Officer	F	
S. Muringo	Field Assistant	M	

Kariba Urban			
Participants			
Location	M	F	TOT
CDRT members	11	1	12
CDRT (ZRCS) members	0	6	6
Total	11	7	18
Facilitators			
Name	Designation	M/F	
C. Chawhanda	Field Officer	F	
S. Muringo	Field Assistant	M	
W. Kufa	District Administrator	M	

Major Areas of the Contingency Plan Covered

- Structure of the Contingency Plan
- Purpose of the Contingency Plan
- Hazards/Disasters that can affect the fishing community
- Risk Ranking
- Developing scenarios
- Disaster risk preparedness and response
- Response plan (Who does what and when)
- Emergency contact details
- Call-out system
- Inventory of key resources/capacities.
- Factors that affect the production of the contingency plan

OBSERVATIONS

Members attending the training were drawn from the three fishing camps in Mola Ward 3. All CDRT participants managed to attend showing high interest of fishing communities in DRR and EWS activities. Following the contingency plan structure, the CDRT managed to identify hazards in their communities and ranked according to their impact. Major hazards affecting the fishing communities ranked were human and wildlife conflict, strong wind/waves and diarrhoeal diseases. At Msamba fishing camp about 20 people died from crocodile attacks and hippo attacks and 15 were severely injured from 2015 to date, and this makes it more vulnerable to human and wild life conflict than the other two fishing camps. The contingency plan also includes the community map which shows vulnerabilities, hazards, capacities and other features that are found in the community. Intervention strategies were agreed upon in order to reduce the impact of disasters. The intervention activities will be done in three phases namely preparedness, relief/response and recovery/rehabilitation.

Under preparedness the CDRT members agreed to carry out the following activities:

- Educating the community members on DRR
- Awareness campaigns

When the disaster happens on relief, the CDRT will carry out:

- Search and rescue,
- First aid and counselling.

On recovery and rehabilitation the team and community will be involved in:

- Construction of households away from the lake
- Barricading the households from the lake
- Adherence to national and local DRR policies.

CHALLENGES

- Lack of resources e.g. communication during response
- Less number of fishing community members trained in first aid and other DRR trainings
- Lack of power at the training venue which affected delivery of some topics
- Low level of literacy among trainees

- Some of the CDRT members lack swimming and lifesaving skills in order to effectively and efficiently respond to lake emergencies.
- Poor coordination between the CDRT and the district civil protection committee
- Lack of radio and water proof mobile communication gadgets that can be used in the lake
- There is lack of immediate transport when accidents happen in the lake to carry casualties to safe places or nearest medical centres

RECOMMENDATIONS

- Regular trainings should be conducted on contingency planning
- Updating of inventory record should involve all civil protection stakeholders
- More members of the fishing community to be trained in DRR trainings
- Red Cross and local authorities to involve the fishing communities when mobilising resources to be used during disasters
- Every fishing cooperatives to have first aid kit
- Full first aid training to be conducted to the CDRT to improve efficiency and effectiveness during response to emergencies or disasters.
- Emergency and first aid simulations to be regularly done so that the teams are always ready for emergencies and disasters.
- Facilitation on improvement of communication and coordination between CDRT and district civil protection committee
- Need to assist the fishermen to mobilise water proof radios and phones.



This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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Annex: Contingency Plan for Nyaminyami Fishing Camps in Ward 3

Version #	Revision Date	Approved By	Approval Date	Reason
1.0	<i>Nov 2017</i>	<i>Local DCP</i>	<i>draft</i>	

A. STRUCTURE OF THE CONTINGENCY PLAN

Step 1: Objectives/purpose of the plan

Step 2: Disasters that can happen

Step 3: How the disasters can happen

Step 4: What to do when the disasters happen

Step 5: Who to do what and when

Step 6: How the information is transmitted when the disaster happen

Step 7: Resources to be used

Step 8: Factors which can affect the plan

Step 9: Endorsement and Adoption of the plan by the community leadership

1. PURPOSE OF THE CONTINGENCY PLAN

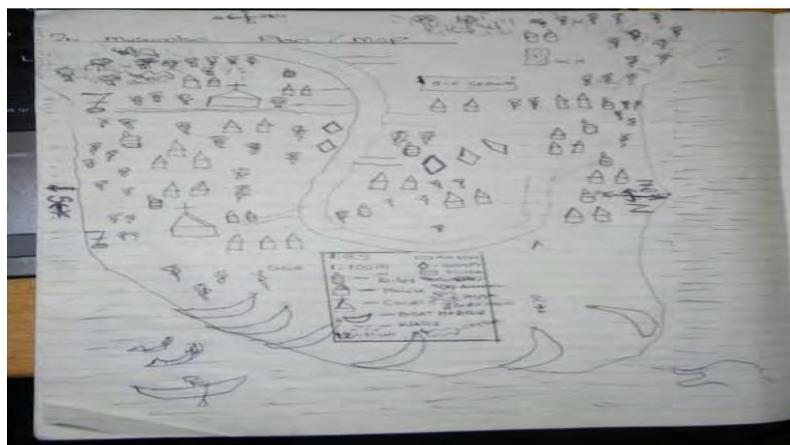
The purposes of the plan are:

- to have an understanding on disaster risk reduction
- To know the preparation to take before the disaster
- To mobilize resources to be used when the disaster happen
- To know the communication methods to use during disasters
- The plan act as a guideline during disaster management
- To know the responsibilities and duties of members of the community before and during disasters

2. HAZARDS OR DISASTERS THAT CAN HAPPEN IN THE FISHING COMMUNITY

- a. Human-animal Conflicts
- b. Strong winds and waves
- c. Hunger (Food insecurity)
- d. Diarrheal diseases
- e. Malaria
- f. HIV/AIDS

FISHING COMMUNITY MAP



SUMMARY OF DISASTERS THAT MIGHT HAPPEN

HAZARD	FREQUENCY	POTENTIAL SCALE	POTENTIAL DAMAGE/EFFECTS
Human & Animal conflict	Every year	All members of the community but fishermen are the most affected group.	From 2015 to 2017 22 people were killed and 26 people were injured.
Strong winds & Waves	October to March every year	40% of the community is affected	Loss of fish, Drowning, loss of nets and boats, loss of life
Food insecurity	May to August every year	40% of the community is affected	Malnutrition, poaching, early marriages, prostitution
Diarrheal diseases	February to April	20% of the community is affected due to poor water and sanitation	Poor health, loss of life, food insecurity
Malaria	October to March every year	15% of the community is affected	Loss of life, poor health, food insecurity

RISK RANKING

Low Impact

High Impact

Malaria	Food insecurity Diarrheal diseases
Malaria	Animal-Human Conflicts Strong winds

Low Frequency

High Frequency

WHAT ARE WE GOING TO DO ABOUT IT?

Intervention	Period of intervention	Animal-human conflict	Food Insecurity	Malaria
Immediate (preparedness)	<i>Months or Days before hazard impact</i>	Trainings on problem animal control (PAC) Awareness campaigns	Trainings on budget or income control Storing of dried fish	<i>Awareness Campaigns Distribution of nets Spraying of households</i>
Relief (response)	<i>1st 24 Hours after impact</i>	Assessment First Aid management	Initial Assessment Reducing number of meal times	Assessment Referral of patients to the hospital
Recovery	<i>Beyond First week</i>	Training on problem animal control Fencing households against wild animals	Putting in place early warning systems Fish farming projects Income generating activities	Awareness campaigns Hygiene promotions

DEVELOPING SCENARIOS

Scenario	Animal-Conflicts	Human	Food insecurity	Malaria
Best	attack by crocodiles and hippos and no one is killed		Less than 1% of the population suffer from hunger	No people are attacked by Malaria
Most likely/middle	Less than 5 people are attacked with no fatalities.		less than 5% of the population affected	Less than 5% of people suffer from malaria
Worst	More than 5 people die every year More than 40% of the population affected		40% of the population affected and suffer from malnutrition	More than 15% suffer from Malaria More than 5 people die

3. WHO DOES WHAT AND WHEN?

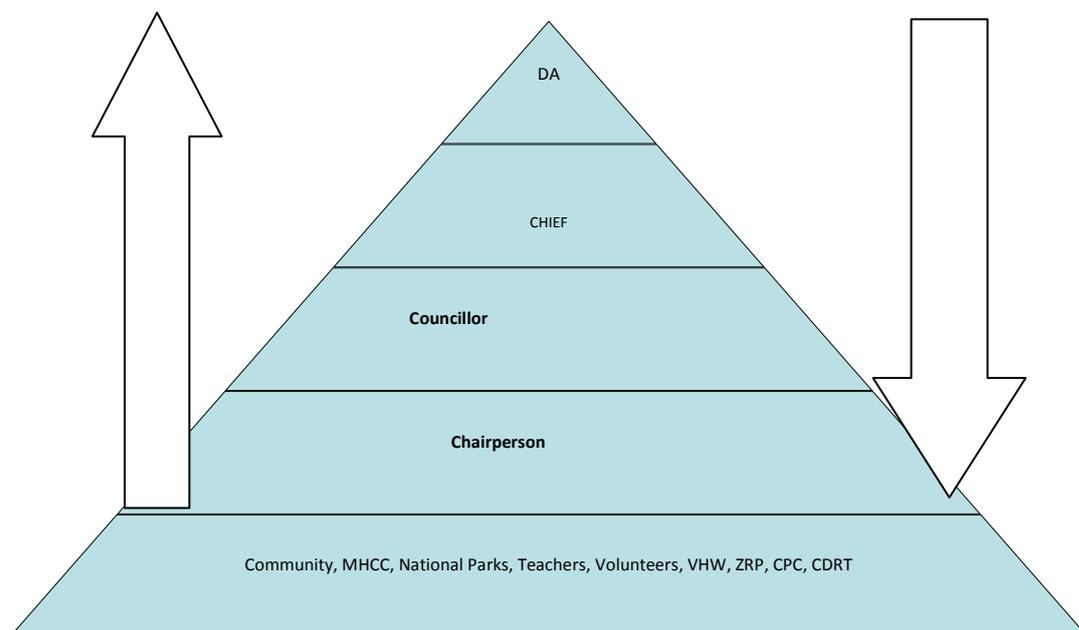
Before the disaster		
No.	Activities	By Who
1.	Trainings on problem animal control	National Parks and Wildlife and NRDC
2	Early warning training	Meteorological Services of Zimbabwe, Red Cross
3	Training on water safety	Lake Navigation, Police and Zimbabwe national army
4	Fish farming	Community members
5	Practicing the contingency plan	Chairperson, headmen and Disaster response teams.
6	Hygiene promotion and awareness campaigns	Ministry of Health, Disaster response teams, VHWs, Red Cross volunteers and community members
Within 24 Hours		
7	Activate plan	Chairperson, Headmen, Red Cross volunteers and CDRT members
8	Carry out initial assessments	Disaster response teams and Community leadership
9	Mobilization of resources	Community leadership, Red Cross volunteers, church leaders
After one week		
11	Trainings on disaster risk reduction	Red Cross, Disaster response team, NRDC, National Parks
12	Fencing of households	Community, National Parks and NRDC
13	Fish farming	Fishermen, community members
14	Awareness campaigns	Red Cross Volunteers, Village health workers, CDRT members, Ministry of Health

4. Who will be contacted & how

Emergency contact numbers

No.	Name	Designation	Mobile number	Location
1	Charles Dhliwayo	Msamba Chairperson	0785596453	Msamba Fishing Camp
2	George Mushonga	Red Cross Volunteer	0776469045	Sibilobilo Fishing Camp
3	Goodward Siabwanda	Councillor	0778191258	Mola Centre
4.	Bernard Ndarama	CDRT member	0774772332	Masviakabola Fishing Camp
5	Chief Mola	Chief		Mola
6	T Miyози	Wildlife Executive Officer - NRDC	0774394310	Siakobvu Business Centre
7	Tineyi Dzimire	Red Cross Volunteers	0778147247	Msamba Fishing Camp

4.1.1 Communication structure



5. Inventory of Key Resources/Capacities

Type of material	Machinery/ Vehicles/ moveable/ fixed assets.			
	Quantity	Public / Private	Owner Name and Location	Contact No.
Bicycles	6	Private	Red Cross Volunteers and VHW in Msamba, Masviakabola	0778147247 0774772332
Phones	350	Private	All the fishing camps	0785596453
Visibility Materials	20	Public	Msamba Fishing Camp	0778147247
First aid kits	2	Public	Msamba Fishing Camp	0778147247
Food		Private	Community members	0776801624
Emergency tools	15	Public	Community	0776801624 0778147247

6. What can affect our plan? This section identifies any limitation that must be taken into consideration regarding the content of this plan.

1. *Natural disasters e.g. Drought, outbreak of diseases*
2. *Political instability/civil strife*
3. *Lack of proper community structures*

7. Contingency Plan Approval

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: _____



CDRT HAZARD SPECIFIC SIMULATION REPORT (Activity 3.2.7)
“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

VENUE	CUTTY SARK HABOUR – KARIBA URBAN
& DATES:	16 DECEMBER 2016
	CHALALA HABOUR – KARIBA RURAL 18 DECEMBER 2016



OBJECTIVES:

- Check available resources needed for response.
- Identify skills and knowledge gaps in terms of disaster response.
- Understand the coordination process with other stakeholders when managing hazards.
- Check the feelings and attitudes of the fishing communities during hazard management.
- Ensure the affected communities and Community Disaster Response Teams (CDRTs) realise that they can deal with hazards in their localities with little resources they may have.
- Evaluate their disaster preparedness.

Introduction

Responding to disasters and hazards involve a lot of resources and skills that can reduce the negative impacts of disasters. The fishing communities lack recognition from the local authorities when it comes to DRR trainings and awareness. With this reasoning, the WB/GFDRR project was initiated in the Kariba Lakeshore communities in Ward 3 targeting the fishers in both rural and urban Kariba. These communities face various hazard effects ranging from strong winds, waves, animal attack, storms and other water related hazards. The most common hazard faced in Lake Kariba is waves as a result of strong winds, hence, the hazard specific simulation exercise was of a boat which capsized due to strong waves and injured the fisherman. The simulations were attended by the ZRCS Operations Manager and Disaster Management Officer(ZRCS HQ), the ZRCS Provincial Accountant and 2 District field staff, Zimbabwe National Army representative and Lake navigation representative. In Kariba urban a total of 26 participants attended with 4 females and 22 Males. In Kariba rural, a total of 23 participants attended with 9 females and 14 males.

The Simulation

The simulation exercise scenario was;

“A wave happened in the lake while fishermen were inside a boat in the lake. Their boat capsized and the fishermen were injured but managed to hang on the edges of the boat. These fishermen should be rescued and need to be assisted by the CDRT”

ACTION AND MANAGEMENT THAT WAS SUPPOSED TO BE FOLLOWED:

- Rescue – correct transportation of the casualties from the boat to the safe place
- Correct positioning of the casualties
- Diagnosis or identification of the injuries
- Correct management of the identified injuries/conditions
- Loading of the casualties on the stretchers
- Evacuation of the casualties to the hospital.
- Mope up/ Cleaning (Clearing of the area) and leaving the scene.

The simulation exercise was given 30 minutes and both the teams in urban and rural managed to assist the victims within the stipulated time. The casualties were transported from the boat to the side of the water where the first aid management was offered. The transportation of the casualties from the boat was done using stretchers and blankets. The CDRT members were showing urgency as they were helping the victims of the wave. Communication to the ambulance, police and other emergency organisations was done so that a multi-stakeholder approach can be done in order to save the victims. Diagnosis of injuries by the team was perfectly done as all the injuries were identified and managed.

One observation made was on the number of CDRT members against casualties, as CDRT members were too many against the number of casualties in Kariba rural. If the CDRT members are too many it is wise to allocate each other specific duties to avoid confusion during the management of the response. During the response management process the CDRT team leader was giving instructions and delegating duties to other team members and also monitoring the progress.

The CDRT team leader wrote a Flash Report on the help rendered to the casualties for sharing with the local Civil Protection structures. Reassurance of the casualties was done as this reduced stress and trauma. The CDRT was able to improvise first aid materials with available materials since there were limited first aid kit materials.



Figure 1: CDRT transporting the casualties on stretcher beds

After the management of injuries, casualties were placed according to the severity of their injuries so that those in need of urgent attention were given first priority of transportation to the hospital. This was followed by lifting and loading the casualties in the truck which was used as an ambulance. Later on all the CDRT members cleaned up the area to make sure there area is left clear of casualty belongings and used first aid materials.

Debriefing was carried out the same day: co-led by Civil Protection and ZRCS. The CDRT members expressed gratitude to the simulation and promised to continue practising in order to improve and prepare for disasters to come. The CDRT asked for more resources to be channelled towards response activities. The CDRT members were also encouraged to fully utilise locally available resources when disasters happen. The fishermen also asked for more trainings especially on first aid and lifesaving as this will boost their capacity during response time.



Figure 2: Debriefing and discussions

Challenges

- ✓ Limited first aid kit materials.
- ✓ Lack of full knowledge and skills on first aid management.
- ✓ No CDRT members with lifesaving skills in the event of rescuing drowning casualties.
- ✓ Some owners of the fishing companies in urban lack understanding of the program hence they are resisting to let their workers to attend CDRT trainings.

Conclusion

- ✓ Training CDRT to learn to use locally available material during first aid management.
- ✓ Provision of first aid kits to CDRT.
- ✓ Conducting more trainings on Community Disaster Response, First Aid and Lifesaving.
- ✓ Conducting CDRT awareness meetings targeting fishing company owners.

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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LAKE KARIBA EMERGENCY RESPONSE SIMULATION 2017 REPORT

(Activity 3.2.7)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project



INTRODUCTION

Kariba district is prone to several hazards, risks and emergencies ranging from wind and wave, drought, diseases, human and animal conflict, road accidents and boat accidents. As such, stakeholders and communities at large need to be cognisant of hazards, disaster risks and emergencies prone in the area. There are several methods of achieving this, one being through simulations. Simulations are crucial in disaster management. They enable people to be risk conscious and proactive in terms of disaster prevention, preparedness, mitigation and response. The Kariba Civil Protection Unit is responsible for preventing, preparing, mitigating and responding to disasters and emergencies in the district. This is achieved through working collectively with local stakeholders and communities in Kariba district. The DCPU constantly check its response capacity through simulation exercises. Although the Lake Navigation Control took a lead in spearheading the simulation exercise by virtue of its responsibility in coordinating operations on the Lake, the whole Kariba District Civil Protection Committee took an active participation in the process at different levels. The simulation was held in Lake Kariba on 2nd November 2017. The simulation exercise was evaluated by 47 participants (34M: 13F). Female representation in many organisations remains very low as indicated by the statistics (13F vs. 34M).

Organisations which participated during the Simulation Exercise

Organisation/Institution	Responsibility
District Administrator	Coordinated the simulation exercise and resource mobilisation
Nyaminyami Rural District Council	Assisted the DA in coordinating and resource mobilisation
Municipality of Kariba	Provided an ambulance and skilled medical personnel
Tony Waite	Disseminated the information To District Aids Council and provided transport
Zimbabwe Red Cross Society	Organised the simulation with the LNC, CDRT rendered first Aid services, provided first aid kits, life jackets and life rings, and also provided financial support for the exercise
Ministry of Health	Provided health professionals to quickly attend the casualties, and an ambulance for transportation to the hospital
Zimbabwe Republic Police	Provided a boat, and chaired the simulation evaluation meeting
Lake Harvest	search and rescue personnel with a speed boat
Lake Navigation Control	Organised the simulation, relayed the distress call and led during rescue of the victims. Provided speed boat
Nyaminyami FM	provided coverage and disseminated the information on media
Boat Squadron	Search and Rescue and speed boats
Ministry of Information	Emergency information dissemination on all media platforms

OBJECTIVES

The main objective of the simulation was to test the District preparedness and response capacity. In addition, the simulation aimed at checking the following:

- Perception of risk
- Response time
- Responsibility for response
- Resource mobilisation Coordination & Collaboration.
- Communication mechanisms
- The district's capacity to response

The Simulation Scenario

- A boat with 2 passengers on board capsized near western end of Redcliff Island.
- A distress call was done to the Lake Navigation who then relayed it to the DCPC Chair, the District Administrator (DA).
- The DA alerts all the stakeholders and lead in stakeholder coordination and resource mobilisation for response. Stakeholders were commanded to go at Andora harbour and at Redcliff Island.
- Stakeholders responded naturally (like what they would do in real-life accident situation)

Disaster preparedness

Disaster Preparedness is vital in reducing disaster risk and loss of life. Preparedness was checked basing on the following:

- *Disaster – risk perception*
Organisations and individuals showed great understanding and appreciation of disaster risks. It was observed that many stakeholders including general community members have great understanding of disasters and risks and appropriate perception of disaster risks. The spreading of the news through social media made people to be unsettled with people communicating to find solutions on rescuing the victims.
- *Response time taken*
 - Time taken to reach the accident scene (western end of Redcliff Island)
 - Time taken in rendering first aid to the victims
 - Time taken for victims to get professional medical attention

People responded to the incident timeously with the first responder, reaching the accident scene (western end of Redcliff Island) within 18 minutes. Most stakeholders managed to respond within 30 minutes. First Aid was rendered and completed in the first 5 minutes of reaching the accident scene. The casualties were transported to the Hospital where nurses rushed to render professional help.

- *Availability of resources (Human & material)*
Kariba district has highly professional and competent human resource in the form of first aiders (CDRT), nurses, ambulance drivers, boat captains and inland controllers. Other resources that were available and made use of were cars, bicycles, cell phones and boats. However, some boats are not designed for emergency response, hence there is need to invest more in emergency speed boats.

Responsibility for response

All DCP stakeholders including community members and the private sector felt that it was their collective responsibility to respond to any disaster or emergency. This was shown by active participation of everyone in an effort to rescue the victims.

Resource mobilisation & coordination

The DCP chairperson managed to command the stakeholders to release available resources for rescuing and saving lives. There was noticeable coordination and collaboration between stakeholders. Kariba municipality coordinated with Kariba Hospital nurses and Tony Waite providing transport to DAAC so that they both can respond to the incident. ZRP did not follow its bureaucratic protocol in releasing their boat. The ZRP boat which was docked near Andorra harbour was released for response.

Communication capacity

Availability of reliable communication network plays a crucial role in disaster information dissemination and disaster response. Good communication is a characteristic of a resilient community and Kariba urban is characterised by good communication network, however, on the day of the simulation Landline communication which is the most used when the DA coordinates and commands stakeholders in times of disasters and emergencies was not functional. This resulted in people reverting to cell phone communication and the use of social media (*WhatsApp Kariba updates group*) to disseminate information. The incident was also broadcasted on ZBC.

The district's capacity to respond

In terms of human resources, the district is well capacitated with professional divers, boat captains, nurses, doctors, first aiders and people with life saving skills. Material resources in the form of speed boats and fire brigade need refurbishment.

OBSERVATIONS

- DCP stakeholders, private sector and communities at large have shown great improvement in understanding disaster risk as indicated by their quick response and dissemination of the incident information.
- Greater disaster risk understanding has increased among stakeholders as they did not hesitate to release the resources at their disposal when needed for response.
- Unlike in the previous years, the role of the private sector in disaster management has been prominent especially in 2017 were they managed to be the first responders to reach the accident scene in less than 23 minutes. This is attributed to on-going DRR workshops, well managed and increased coordination and collaboration between public and private sector.
- The role of media in information dissemination cannot be underestimated. With the information reaching many in Kariba and Zimbabwe at large, people believed it was a real situation which made people outside Kariba to continue inquiring on whether the victims were rescued.

CHALLENGES

- Resource material e.g. speed boats, fire brigade, ambulances are inadequate and some needs to be restored.
- Poor or unstable network coverage at times.

RECOMMENDATIONS

- Increase VHF radios to ensure reliable communication between stakeholders during response time
- There is need for a 4x4 off-road motor vehicle for the local DCP with the primary function of responding to disasters and emergencies.
- Emergency response materials need to be safely kept at an accessible central place which is the Hospital or Nyamhunga clinic. One participant at the DCP workshop submitted that the hospital is less accessible during disasters since it located on a hill (with potential rolling stones) and suggested Nyamhunga as a viable place for prepositioning emergency stocks. Fundraising activities should be carried out to sustain and for replenishment of the materials.
- The ZRCS will include some DCP stakeholders in Basic Industrial First Aid trainings for effective and appropriate first aid services to the victims as a way of stimulating interest for others to subscribe for these trainings.
- The focus should be on both inland accidents and road accidents when conducting simulation exercises as road accidents are also claiming many lives.



The rescue team travelling to Redcliff Island to rescue the victims



Professional nurses attending the casualties at Kariba Hospital

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR

WB/GFDRR: A02-3.2.7 Lake Kariba Emergency Response Simulation 2017 Report (Nov 2017)



LAKE KARIBA EMERGENCY RESPONSE SIMULATION 2018 REPORT

(ACTIVITY 3.2.7)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

INTRODUCTION

Responding to disasters and hazards involve a lot of resources and skills that can reduce the negative impact of the disasters. The fishing communities lack recognition from the local authorities when it comes to DRR trainings and awareness. These communities face various hazards effects from waves, animal attack, storms and other water related hazards. But the most common hazards they face in Lake Kariba are strong winds/wave, and hippo and crocodile attacks. On the 25th April 2018 the ZRCS together with other disaster response partners took part in emergence response mock exercise at Msamba fishing camp. The simulation exercise was coordinated and led by the district civil protection sub-committee chairperson. The objectives of the simulation were:

- check and understand the call out system during emergencies
- have knowledge of the capacities and resources available
- check the risk perception and attitudes
- identify skills and knowledge gaps in terms of disaster response.
- Disaster simulations are part of disaster preparedness
- Understand the coordination process with other stakeholders when managing hazards.
- check the feelings and attitudes of the fishing communities during hazard management.
- Make affected communities know they can deal with hazards in their localities with little resources that they may have.

The simulation exercise scenario was:

“A boat with three fishermen was hit by a hippo while they were carrying out their fishing activities as usual. Their boat capsized, and fishermen were injured in the process but one managed swim to the lake side while others hang on the edges of the boat. These fishermen should be rescued and need to be assisted and taken to the hospital.”

Action and management that was supposed to be followed:

- Safety – taking safety precautions first before rescue
- Call-out – inform all lake emergency rescue teams (e.g. lake navigation, boat squadron, police, national parks)
- Rescue – correct rescue boats used and transportation of casualties from lake to safe place
- Correct lifting and offloading of casualties from the boat
- Diagnosis or identification of the injuries
- Correct management of the identified injuries/conditions
- Loading of the casualties on the stretchers;
- Evacuation of the casualties to the hospital
- Mop up (clearing of the area) and leaving the scene.



REVIEW OF COMMUNITY EARLY WARNING SYSTEM (CEWS)

(Activity 3.2.8)

“Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe” Project

LOCATION	KARIBA URBAN & KARIBA RURAL
& DATES:	23 – 27 MAY 2017



Introduction

A Community early warning system was established and became operational in October 2016 with the aim of linking fishing communities in Mola ward 3, with an established EW system through improving dissemination of weather forecasts and adverse weather alerts. Eight months later in week 23 to 27 May 2017, a review was conducted to ascertain relevance, efficiency, progress, challenges and recommend appropriate action. Review team comprised of: Lake Navigation x 2, MSD x 3, ZRCS X3.

A review programme and framework were developed for this purpose with the following components; **The SMS Platform, The Message, Recipient Database, Warning Communication, Coordination and Response and Beneficiary satisfaction.**

Review Discussions

A technical review meeting was held at Lake Navigation office and two focus group with CDRTs in Kariba Urban and fishermen at Msampa fishing communities.

SMS Platform

Both the MSD & LNC host the bulk SMS platform. The platform is owned by e-Manyz (Pvt) Ltd. The company provided training to MSD & LNC before commencement and the operation of the system is well understood.

E-Manyz sell bulk SMS credit at the rate of \$0.025 per message. One messages takes 120 characters and in most cases, each weather forecast uses two messages.

Message

The messages are currently being sent in English once every week-day at 3 pm. MSD generates the message on weather forecast and send to LNC who then records the message on a form before inputting into the system for dissemination to lake users.

MSD have also disseminated the 2016 -2017 seasonal forecast to farmers (in word version/pamphlets) in Siakobvu which were presented in local languages (Shona & Tonga).

Recipients

The database of warning messages currently have 100 people (70 – males & 30 – females) of which 70% are from the fishing communities and 30% from the local Civil Protection structure.

Coordination and Response (Early Action)

The LNC coordinates search and rescue efforts on the lake. They take part in District Joint Operations Command and Civil Protection meetings. Emergency numbers are displayed and readily available at the offices and in the case of accidents on the lake, the LNC activates other members of the local Civil Protection such as the DA, Police, Army, Hospital, MSD etc. to provide other emergency services.

Community Voices (Knowledge, Attitude, Perception & Satisfaction).

CDRTs in Kariba Urban are now known to local Civil Protection structures and they have provided support to victims of crocodile attacks. One of the CDRTs narrated their experience during the period under review;

'On 4 April 2017, 3 fishermen were attacked by crocodiles while working on the lake. When we were advised about the incident, we rushed to scene and rescued two of them, administered first aid and helped them to reach the nearest health facility. One of them lost his life and we as CDRTs, working with the local branch attended the funeral and provided psychological counselling to the family.'

At Msampa fishing camps, 70% of the people own phones and 3/5 have registered to receive messages. All registered people were receiving warning messages. 15 EW champions who received

the messages helped in disseminating adverse weather warning to other fishermen who didn't have phones. Some fishermen reported that they own only 1 phone in their HH which they leave with the wife when going to work, another one reported that he lost his phone in the lake during a mild wind storm and was having challenges getting messages. Others reported that the meetings they have been attending facilitated through the project (such as EW dissemination sessions, PHHE roll out meetings, RC branch meetings and stakeholder meetings) was bringing the community together which has heightened the propensity to share information and to be there for each other during times of crisis and disaster prevention. Community members reported that they now 'feel for each other' more than before.

One thing that came out of the review was the recognition and appreciation for the role played by external stakeholders who are participating in the project such as NRDC, MSD, LNC, Environmental department and the private sector (such as Padenga) who have remained at the disposal. Fishing community reported that the visits and interactions with a number of technical, regulatory and benevolent organisations/departments have increased since the project began and a creative relationship is emerging. The community is now more risk-informed and even during the review itself, the LNC took time to educate the fishermen about the importance of safety gear on the lake and the MSD emphasised that it was responsibility for all to receive and react to warning messages to safeguard life and assets for the lake dependant population.

A female DRR & EW champion and team leader, Penitah Makanuka who was selected and tasked to collect local monitoring signs and parameters made interesting observations. In her summarized report, she noted:

'We have been receiving weather forecasts from LNC since late October 2016. I was part of the team who received training on CEWS in November 2016 and now I am aware of the key components of the CEWS which would ensure that we will keep practising what we were taught even after the project has ended. We were also trained by MSD on how to interpret weather information such as strength and direction of the winds. I also learnt the importance of recording local signs for purposeful comparison with forecasts sent through LNC. Before this useful intervention, no warning communication came our way, except the lucky few who had connections with big boating companies who have direct communications with the Lake captain or when one happens to meet a house boat on their way. But now, we receive daily forecasts and this has brought us closer to issues which affect our life and our work and how to deal with them. We are not only risk-aware but we are active participants in our 'own' CEWS. Just as an example, we used to receive 'general forecasts' covering the whole country or Kariba. In February 2017, when Cyclone Dineo affected several parts of the country, we requested MSD to provide 'an area forecast', one which is closer home. Since then, we have been receiving forecasts disaggregated by name of basin and this improved accuracy of the forecasts.'

Regarding our own monitoring of local weather parameters, we started on the 8 November 2016 and on 16 December 2016, there was a heavy wind which we locally call Matusadonha but this was somehow missing from the weather report we got through our phones. However they were heavy winds between 20 and 25 December 2016 which were accurately predicted through warning messages and fishing activities were suspended. On 21 January 2017, there was a violent wind storm which reportedly destroyed houses in Zambia, but this period we were not getting messages perhaps due to a communication breakdown with LNC. Between 2 and 3 February 2017, we saw a familiar type of birds linked to heavy winds and rains, warning messages confirmed the same and indeed we experienced thunderstorms the same night. As CDRTs, we have also responded to cases of crocodile attacks through provision of first aid and facilitating transportation of victims to a health facility.'

Recommendations and Way Forward

From the discussions, it was noted that there is excitement and ownership of the CEWS and indeed it was a successful pilot in its first 8 months. The following is a summary of the issues discussed;

Some urban CDRTs asked to be added to the database of recipients of warning communication and be active participants of the CEWS.

There is a new team at LNC which has received orientation and are carrying on with the use of the system. However, close support and refresher training is needed to strengthen implementation of the system going forward.

There is consensus that warning messages have been quite useful and this has resulted in a marginal decline in the number of fishermen affected by wind storms.

One significant challenge encountered was the localisation of weather terminology and how it applies in small scale fishing community. E.g classification of wind strength as Force 1 -2 would normally not affect operations on the lake, but the size and quality of some of the boats used by fishermen makes it difficult to work on the lake even during the so called normal winds.

There is still need to continue to explore the use of VHF/HF radio system to improve communication between the fishing communication and an existing EW system.

There is need to strengthen the link between CDRTs and local civil protection for effective response mechanism taking into consideration the available capacities and resources.

There are overlaps in the dissemination of severe adverse weather alerts between the national and sub national. These warnings are normally sent through the national DCP in collaboration with MSD.

There has been significant improvement in the recording of rainfall information by MSD. Extension workers in the project wards where rain gauges were installed have been sending rainfall measurements to MSD.

There is still room to improve weather forecast; e.g. a forecast that include 'gusting of winds in addition to force, maximum gusts. MSD have intentions to develop models to be used for lake monitoring

The AWS procured under the project is at advanced stage of delivery and there is anticipation and hope that its installation near Bumi will improve local forecasting.

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR



Figure 01: Msamba CDRT lifting a casualty from the boat

OBSERVATIONS

There was no specific time set for the simulation, instead the checking was on how much time is taken by the first responders to reach the accident scene. Communication to the ambulance, police and other emergency organisations was done so that a multi-stakeholder approach can be done in order to save the victims. Due to poor communication network in the area, major rescue teams failed to receive the emergence information. The rescue was only done by the Msamba fishing camp CDRT and community members. The CDRT used a small boat without engine to rescue the victims as there are no engine boats at the fishing camp. The casualties were transported from the boat to the side of the lake where the first aid management was offered. The transportation of the casualties from the boat was done using stretchers. Community members were also assisting the CDRT team and that showed togetherness of the community when the emergencies happen. Diagnosis of injuries by the team was perfectly done as all the injuries were identified and managed. During the management process the team leader was giving instructions and delegating duties to other team members and also monitoring the progress. Later on all the CDRT members mop up the area to make sure there area is left clear of casualty belongings and used first aid materials. After the simulation a discussion was done and the CDRT members expressed gratitude to the simulation and promised to continue practise so that they are well prepare for disasters to come. The CDRT asked for more resources to be channelled towards DRR especially rescue boats as they are taking much time to rescue the lake accidents victims. The CDRT members were encouraged to fully utilise locally available resources to use when disasters happen. The fishermen also asked for more trainings especially on lifesaving saying this will boost their capacity during disaster response.



Figure 02: Chairperson for district sub-committee leading a discussion during debriefing

CHALLENGES

- Poor communication network
- Lack of rescue transport
- Poor coordination among emergence response teams
- Poor road network – this may affect evacuation of the casualties for medical treatment

RECOMMENDATIONS

- Training CDRT to learn to use locally available material during first aid management.
- Networking with other stakeholders during before, during and after disasters or emergencies
- Conducting more trainings on Community Disaster Response, First Aid and Lifesaving.
- Continuous mock simulation exercises

This activity was co-financed by the EU-funded ACP-EU Natural Disaster Risk Reduction Program, managed by the Global Facility for Disaster Reduction and Recovery



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All correspondences should be addressed to the Director

Minimizing Risks through Science

File ref: 532 / Mash West.

Date: 11. 06. 2018.

**REPORT ON A VISIT TO KARIBA DISTRICT DURING THE PERIOD
04. 06. 2018 - 08. 06. 2018.**

PROJECT TITLE:

**MAINSTREAMING DISASTER RISK REDUCTION AND CLIMATE CHANGE
ADAPTATION INTO LOCAL DEVELOPMENT PLANNING (MDRR & CCA into LDP)
IN ZIMBABWE.**

DISTRICT: KARIBA. PROJECT STARTED: 01. 01. 2018. ENDS: 30. 06. 2018.

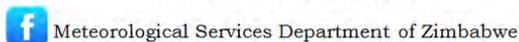
INTRODUCTION

The main objective of this report is to highlight what came out from meetings held with stakeholders at Bumi Hills Foundation, Msampa Fishing Camp and in Kariba Urban. The agenda for the meetings were:

- Review Communities Disaster Response Teams. (CDRTs)
- Installation of a VHF radio at Msampa Fishing Camp.
- Maintenance of Bumi Hills Automatic Weather station
- The main item on agenda; - mapping the way forward after the project's life span and
- Early Warning Early Action Review (EWEA).
- Agree on site for a Radio Repeater.

The overall objective of the project is to enhance capacity of vulnerable rural communities to prepare for, mitigate and respond to recurrent disasters and the impact of climate change. One of the key pillars of the project is that fishing community has access to early warning system (EWS) in

Kariba before they go into the lake. Meteorological Services Department (MSD) sends out early warning messages every day at 1500hours local time to the fishing community.



BACKGROUND INFORMATION

Zimbabwe Red Cross Society, in partnership with Danish Red Cross received funding under the World Bank Global Facility for Disaster Risk Reduction grant to implement a 30-month period Disaster Risk Reduction and Climate Change Adaptation project in rural Kariba. The goal of the project is to mainstream disaster risk reduction and climate change adaptation into local development planning in Zimbabwe.

A steering committee at national level was set up comprising:

1. The Zimbabwe Red Cross Society (ZRCS)
2. Meteorological Services Department (MSD)
3. Department of Civil Protection (DCP)
4. Department of Rural and Local Authorities (DRLA)
5. Climate Change Management Department (CCMD) and
6. Department of Inland Waters Control (Lake Navigation Control). (LNC)

An automated weather (AWS) was purchased by ZRCS and installed at Bumi Hills Foundation to improve weather forecasts in and around the lake, and rural areas surrounding the lake utilizing real time data. Transmission of data from the AWS to Kariba Airport where the MSD forecaster is based is by way of GSM through ECONET with payments of the required bundles done by ZRCS. However, this is proving unsustainable – in particular when the project ends.

BUMI HILLS FOUNDATION

Representation on the trip to Bumi Hills Foundation on the 6th June 2018 was as follows:

Mr. Mabumbo	Project Coordinator (ZRCS)
Mr. Mlambo	Officer (ZRCS)
Mr. Madhaure	Engineer (MSD)
Mr. Bingandadi	OIC Kariba airport Met (MSD)
Mr. Kusada	Provincial Chief Meteorological Officer (Mash West) (MSD) and
Mr. Nyekete	Lake Captain (LNC).

The AWS was serviced on the 6th June and checked on the 7th June 2018. The data bundle for the AWS was topped up for 1 (one) month. The AWS is now working properly, efficiently and proficiently – with data now being sent to the server at MSD HQ and uploaded and also updated every 15(fifteen) minutes. The data is now readily accessible at Kariba Airport Meteorological Office with same frequency as just mentioned.

After servicing the AWS on the 6th June, a meeting was held at Bumi Hills Foundation Anti-Poaching Unit Office which is situated at a distance of about 150m from the AWS. In the meeting that ensued we were joined in by **Mr. Nick Milne, The Trust Manager for Bumi Hills Foundation**. The meeting was prompted by the fact that the project's lifespan is coming to a close. The stakeholders are now looking at continuity of the project after ZRCS is gone. The equipment will ultimately be officially commissioned and handed over to MSD in due course, around the end of June 2018. MSD will adopt it as one of its own equipment and therefore periodically render repair and preventive maintenance as necessary. **NB:** the road from Magunje to Bumi Hills via Siakobvu is gravel and in a horrible state – and will only do with a reliable four-wheel drive vehicle, which MSD may not be able to afford. Secondly, the cost of hiring a boat may not be sustainable.

Two of the items on agenda for this crucial meeting were therefore:

- Security of the AWS and
- Transport for the MSD technicians / engineers to and fro Bumi Hills by boat.
- Installation of a transmission Radio Repeater on either Spurwing island, Kings Camp or at Bumi Hills – to ease cost of transmitting data by using radio system. The one that came with the AWS can broadcast up to a radius of 40km solely hence the need for a
- Radio - repeater. It was agreed that the Repeater would be installed at Bumi Hills with Kings Camp as the next option if there are any challenges.

While discussing issues relating to security and transport, Mr. Nick Milne chipped in by stating that as an aside he will be relocating to Vic. Falls in due course and would be visiting Bumi Hills Foundation occasionally. His colleague Mark Brightman would however continue activities of Anti-Poaching Unit at Bumi Hills. He indicated that Mark Brightman would be more than willing to provide security to the AWS while at the same time pursuing his daily chores, that of Anti-poaching. Nick said that security of the AWS would be granted when making their routine patrols. It was reported that no one will be permitted to go direct to AWS station for whatever reason without first reporting to security personnel at the Anti-Poaching Office from now onwards.

Further to that he revealed that Bumi Hills Hotel was bought by Africa Bush Foundation with the main share holder being a businessman by the name Obert Munyeza. The guy is based in Vic. Falls and has also similar projects / businesses running in Botswana. Africa Bush Camp transports its clients using boats and small aircrafts to and from Bumi Hills Hotel which all need accurate weather information / forecasts. Africa Bush Camp is also carrying out some community projects in Mola wards 3 and 4 – hence Nick promised to introduce MSD to Mr. Obert Munyeza with a view that the project moves on after 30th June 2018. He promised to make talking to the guys at Bumi Hills Hotel his task.

On maintenance of AWS the engineer resolved to do it quarterly. Transport can be arranged if we give them (at Bumi Hills) one-week advance notice. Nick has no doubt about that. During the official handover and takeover of the AWS, all such stakeholders should be invited.

Bumi Hills Hotel has got a boat that plies the Kariba to the Bumi Hills route twice weekly and the arrangements to provide transport can easily be made.

Contact details for Mr. O. Munyeza are:

Phone: 072 936 861

Email: obert@africanbushcamp.com

MSAMPA FISHING CAMP

A VHF radio communication system was installed on 7th of June 2018 at Msampa fishing camp by Mr. Mlambo, Mr. Madhaure and Nyekete. The purpose of the radio is to receive and transmit early warning messages between LNC and other stakeholders. The Community Early Warning Champions were trained on how to use the VHF radio by Mr. Nyekete, the Lake Captain. The small-scale fishermen are now excited that they now have a direct radio communication with LNC. They can now also request / access weather forecasts from MSD via the radio which is a lot cheaper than a phone.

After installation of the radio a meeting was held with 25 fishermen at M'sampa who were off-duty. The agenda for the meeting was to map a way forward after the end of the project on 30.06.2018. The fishing community said that the weather forecasting they are receiving from MSD is very helpful like the weather forecast on 5-6 June 2018 which predicted wind gusting to force 4. They said all fishing activities were suspended due the expected strength of the wind – and it saved lives. A District Development Fund (DDF) boat which carries passengers from Kariba Rural to Kariba Urban did not ply the route during the above-mentioned dates and that also saved lives. It was universally agreed that these forecasts should continue for the benefit of the vulnerable community at Msampa and others.

The fishing community at Msampa has a population of 53 fishermen in the data base who are receiving weather 'SMS' on their phones. After receiving the messages they also resend on text or whatsapp to other fishermen who are not on the main SMS database weather. The fishermen said they would like to continue receiving the messages after 30 June 2018 and that they are quite willing to contribute towards the cost of transmitting the 'sms' to them which is currently \$9/day or \$300/month.

KARIBA URBAN

In Kariba Urban we held meetings with Office of the District Administrator (DA), Surveyor of Lake Navigation and Chairman of the small-scale fishing community. The chairman of the small-scale fishermen said there are more than 100 fishermen who are using the early warning forecast messages. After receiving they retransmit / relay it to other fishermen who are not in the data base. These 'others' also include some established fishing companies within the Kariba fishing industry who are / maybe, benefitting indirectly. The bottom line is that they are all interested in the weather forecasts prior to venturing into the lake. The chairman and others concede that there has been a reduction in the number of weather-related disasters within the lake as most of the times the fishermen are warned in time and therefore make informed decisions - during the period the project has been running. Normally when bad weather is forecast boat owners offer their workers time off and the workers themselves may request to be released based on the lake weather forecasts provided by MSD.

As an example, the chairman said that the forecast given on 2nd and 3rd of June was very helpful and the workers were given 3 days off as they could not go into the lake. The chairman of the small-scale fishermen said as the project is coming to an end he was going to call for a meeting with other stakeholders and advise our Kariba office accordingly so that there is continuity in the receipt of 'SMS' for the lake with respect to weather information.

The DA showed appreciation for the work done in Kariba District during the project's lifespan. The DA's office showed appreciation in particular to ZRCS and the other stakeholders for the project 'Mainstreaming Disaster Risk Reduction and Climate Change Adaptation into Local Development Planning in Zimbabwe - and in particular also Kariba. A number of lessons were learnt which makes it easier for the same project to be cascaded down to other districts of Mashonaland West Province or other parts of the country. The DA said such good projects which save life should not be allowed to end just because of lack of funds amounting to \$300 monthly to pay for 'sms'.

The DA's office promised to call for a meeting with other stakeholders such as Lake Harvest, Padenga Holdings and other house-boat operators among others and see how they can be partnered so that activities started by ZRCS do not end abruptly after 30 June 2018.

CONCLUSION

- There is now safety on the lake and there must be continuity weather-wise.
- Source \$300 per month for payment of ‘sms’ early warning messages’ (weather forecasts for the lake).
- Routine maintenance of the AWS must be done at all cost.
- The fishing community is now able to receive weather and early warning messages, then monitor weather hazards and integrate their indigenous knowledge with science.
- Informed decisions and appropriate action can now be taken by the fishermen.
- Logistics for enabling continuation of broadcast of lake weather forecasts has partially begun. Mr. Bingandadi has come up with a list (23 so far) of fishermen who have already volunteered to pay for the services on a monthly basis. More names will be posted to him in due course.
- The AWS is working efficiently at the moment after it was serviced by the engineers.

RECOMMENDATIONS

1. A radio repeater should be installed at Bumi Hills so that the AWS radio communication with Kariba is established – to cut down on costs.
2. If funds permitted the project would have been complete with 2 other AWSs, one at Siakobvu and the second one in Kariba urban.
3. We recommend that every fishing camp must have a VHF radio for early warning and early action. Radios are available from ZRCS as part of the project. The batteries and solar panels are needed in places where there is no power.
4. MSD and other stakeholders must look for resources to enable continuation of the good work started by ZRCS and make payments for the ‘sms’.
5. The fishermen / the fishing industry since they have shown interest in use of the weather forecasts for the lake must pay something, a token – to show ownership and appreciation of the ‘sms’.
6. Direct official communication with the new owner of Bumi Hills Hotel must be made – for him to render assistance to MSD when required.
7. Quarterly maintenance of the AWS must be undertaken.
8. The government departments (DA, MSD and LNC) who are stakeholders should find ways to put this item on agenda in their weekly / monthly meetings – where possible set aside a budget for continuation of this noble cause / work(s) started by ZRCS.
9. The MSD engineers will continue to explore new, cheaper ways of transmitting the data.
10. During commissioning and handing over of equipment all stakeholders must be invited.

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GFDRR
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