

CRIDF 



# Zambezi River Basin Livelihood Response Programme

## Consolidated Report on Revised Hotspot Narratives & Initial Project Repositories

FINAL

September 2018



## Contents

<b>Preface</b>		<b>3</b>
<b>1</b>	<b>Introduction</b>	<b>4</b>
1.1	Background	4
1.2	Overview of national consultations	5
1.3	Participant Overview	5
<b>2</b>	<b>Hotspot Narrative Updates</b>	<b>6</b>
<b>3</b>	<b>Country Project Repositories / Typologies</b>	<b>13</b>
3.1	Angola	13
3.2	Botswana	14
3.3	Malawi	15
3.4	Mozambique	17
3.5	Namibia	18
3.6	Tanzania	19
3.7	Zambia	23
3.8	Zimbabwe	24
<b>4</b>	<b>Next steps</b>	<b>26</b>

## Preface

This report presents the updated hotspot narratives derived from national country consultations in all eight Member States. Tracked edits to the preliminary hotspot text (developed using desk-based analysis and mapped metadata) is indicated in individual Country Consultation Reports. The depth of project-level information differs from country-to-country based on the varying meeting agendas (and resultant opportunities to engage stakeholders).

The narratives include geographical coverage edits, which will inform the development of a revised hotspot map. This map will be updated and inserted in the final version of this report and presented at the Zambezi Stakeholder Forum on 9<sup>th</sup> October 2018; Lilongwe.

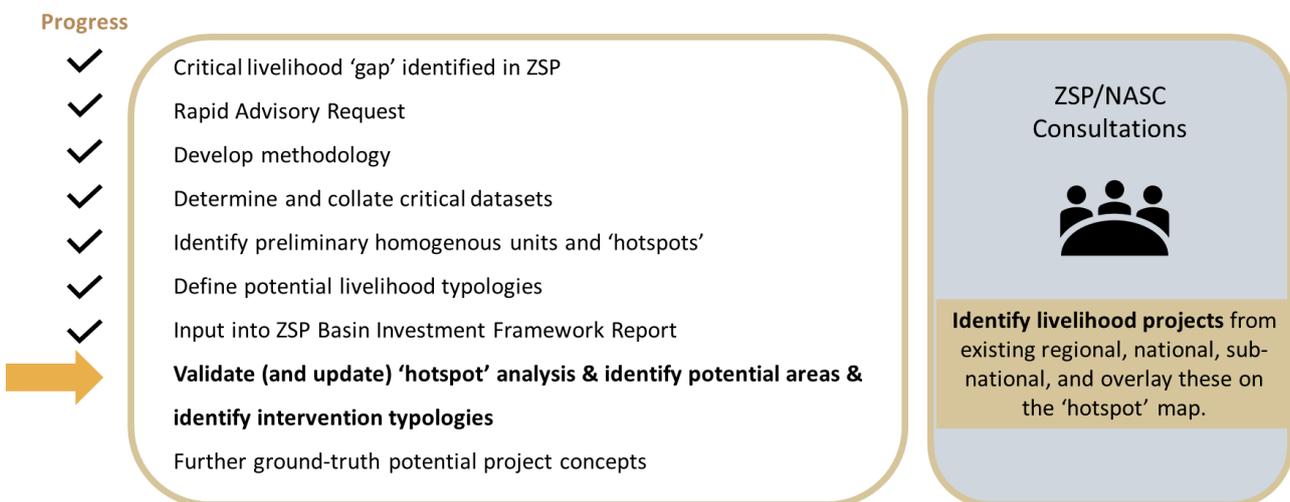
# 1 Introduction

## 1.1 Background

Zambezi Riparian States have collectively agreed to undertake a well-considered development path that contributes to economic growth and improved social welfare, whilst ensuring environmental integrity. Furthermore, the development priorities of each the member states explicitly emphasise the need to prioritise livelihoods and poverty eradication issues, with a view of ensuring that socio-economic benefits are realised even during periods of climate variability and stress.

The Zambezi River Basin Commission (ZAMCOM) has embarked on a process to develop the Zambezi Strategic Plan (ZSP), as noted in the ZAMCOM Agreement it is a key document to guide the management and development of water resources in the basin. The process started off with a Situational Analysis – which was taken to the basin stakeholders from consultation. The next step in the process was the ZSP Infrastructure Inventory of projects were member states identified these. The ZSP Infrastructure Inventory has taken an economic and hydropower-intensive lens, focussed primarily on large-scale hard infrastructure – resulting in a notable small to medium infrastructure gap in in the investment framework. Small-scale infrastructure is critical in addressing livelihood issues and vulnerabilities in the basin – thus contributing to improving the social and economic welfare.

Recognising this gap, ZAMCOM requested support from the Climate Resilient Infrastructure Development Facility (CRIDF) to undertake a basin-wide Vulnerability Hotspot Assessment, as a basis for identifying priority areas of intervention. The resultant output was a Livelihoods Hotspot Mapping and Analysis, submitted as an Annex to ZSP Investment Framework. The livelihoods component has since been identified as a programme area for the ZSP. Figure 1 below shows the process that has been used to identify findings that will contribute towards the development of a Zambezi River Basin Livelihood Response Programme – which would complement the larger scale infrastructure contained in the ZSP Investment Framework.



**Figure 1: Steps to Identifying Portfolios of Livelihoods Projects in the Zambezi River Basin**

After the development of the Hotspot Analysis, ZAMSEC indicated that a next critical step toward developing a basin-wide livelihood programme was engagement with national basin stakeholders. The engagement would focus on review and feedback on the desktop findings with the stakeholders. ZAMCOM has established National Stakeholder Committees as a platform for engaging in member states. The planned ZSP Consultations and Ordinary NASC Meetings scheduled from 30<sup>th</sup> August to 14<sup>th</sup> September (in all the 8 countries) were deemed an appropriate, and opportune forum to engage and validate the hotspot analysis.

The NASC Meetings were scheduled to ideally span two days in each country – with one day dedicated to presenting and reflecting on the ZSP (Investment Framework outputs and Strategic Plan discussion paper) and another day for the Ordinary Internal NASC Meeting, focussed on wider ZAMCOM operations and planning. The livelihood discussions facilitated by the CRIDF team presented progress and preliminary results, workshop in-country basin challenges, and identified existing and potential future projects/typologies.

The objectives of these sessions within the NASC meetings were to:

1. Ensure the final outputs of this analysis accurately reflect the nuanced, and differing, hazards and vulnerabilities in the basin,
2. Discuss the hotspot mapping and preliminary outputs and refine and validate with Riparian State basin stakeholders
3. Establish the role of the NASC's in driving the Zambezi River Basin Livelihood Response Programme, through the development of concept notes aimed at mobilising funding
4. Discuss the role of CRIDF in supporting the process, through capacity building on concept note development and application of economic, climate, poverty and gender assessment tools.

## 1.2 Overview of national consultations

ZSP Consultations and Ordinary Internal NASC Meetings were held in four of the countries – namely Botswana, Tanzania, Zimbabwe and Zambia. For the other four countries Angola, Malawi, Mozambique and Namibia presentations and groupwork sessions were adapted to ensure as much feedback and information would be gathered from participants within the ZSP Consultation session. The Angolan and Mozambican consultations were condensed to half day meetings, which limited the ability to elicit feedback on project typologies (including existing and planned livelihood projects). As a result, the depth of project-level information differs from country-to-country, and recommendations on how to fill these gaps is provided in the final section of this report.

## 1.3 Participant Overview

Throughout the eight consultations, CRIDF and ZAMSEC presented and engaged with over 200 national stakeholders – including an array of government ministries (Water, Agriculture, Finance, ICT, Transport, Planning, Energy, Environment and Fisheries), as well as academia, local district and catchment councils, water utilities and user associations, conservation/wildlife organisations and international organisations including GIZ, WaterAid, UNDP and ZSP consultants (COWI, AECOM and independent).

Notably, no Gender Focal Points for the Water Ministries nor Gender Machinery representatives were in attendance. This indicates that the NASCs and/or ZAMSEC did not include them on their list of key national stakeholders and should be flagged for future events.

While several government representatives were aware of CRIDF (given our participation at the recent Joint Study Project Committee Meeting in Harare) interactions were made with new organisations beyond the water sector. This gave CRIDF an opportunity to share its work and respond to several questions on how the programme works. Presentations were also made in all the sessions giving an overview of the CRIDF mandate.

## 2 Hotspot Narrative Updates

The Figure 2 below indicates the hotspots identified by the project team prior to the national consultations. Through in-country stakeholder engagement and interactive groupwork mapping exercises, feedback and additional insights regarding the vulnerability zones and hotspots were collected. This process not only validated CRIDF's desk-based findings - where broad consensus of the hotspots was reached in each country - but importantly, provided more detailed information on localised issues experienced by the basin stakeholders.

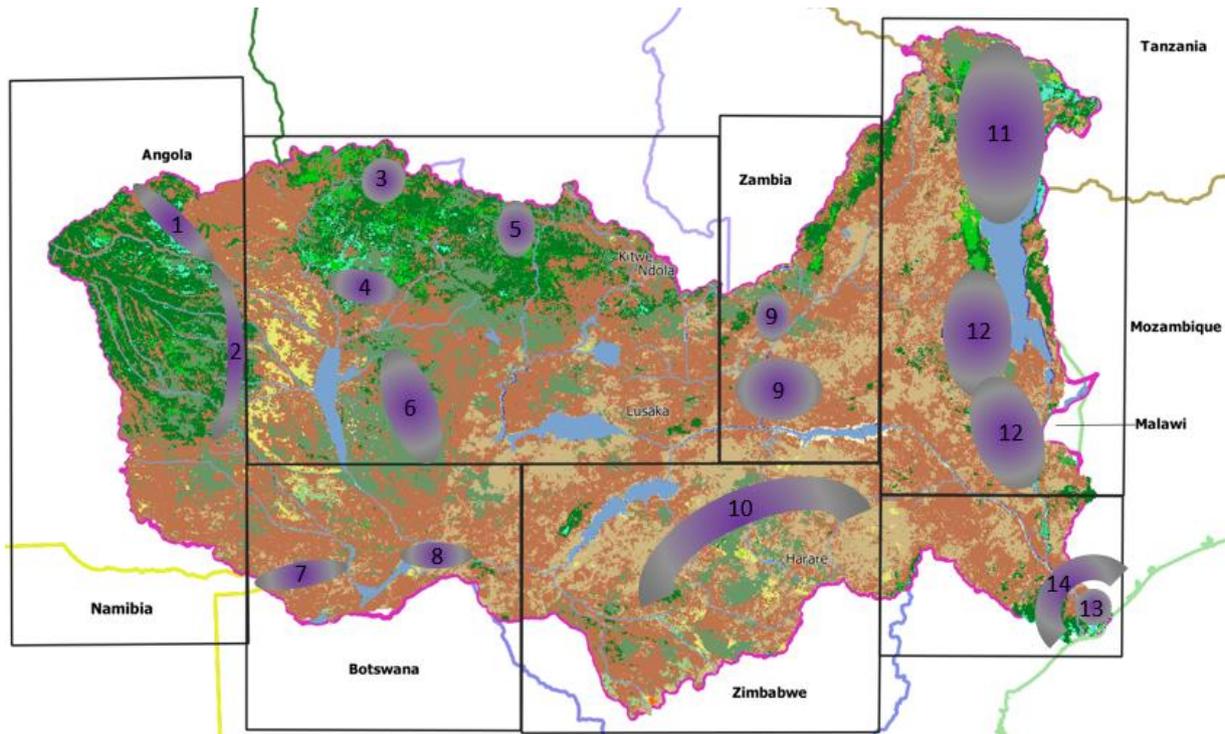


Figure 2: Initial [landcover] Zambezi Hotspot Map

As a result, the updated hotspot narratives and recommended geographical coverages are as follows:

### Hotspot 1:

The hotspot runs from the settlement of Luena south along the main road, where most villages and populations are located. The region is exposed to natural and man-made hazards and presents high level of social, economic and environmental vulnerability. Specifically, this hotspot area is subject to floods; floods can be destructive and increase the levels of isolation of villages, as there is no physical infrastructure such as bridges to connect villages to services/market access. In the region, ravines (deep, narrow gorges) present another hazard to the population.

The hotspot includes forested areas where the sustainability of the deciduous broad leaf, evergreen and mixed tree species is of key concern. Deforestation, practiced to supply wood as cooking fuel, is a significant concern. The loss of vegetation also increases sedimentation downstream. The relatively steep slopes in the area indicate potential increase in erosion and mudslides along with the deforestation trend. In addition, in the northeast part of the hotspot (east of Luena), poaching presents a challenge to biodiversity. This impacts tourism and tourism-related economic activities. Rainfed agriculture is a livelihood activity in the region. To

protect natural resources, there is a need to balance forested areas with agricultural land and soil-preserving low till, low-fertilisation agriculture.

### **Hotspot 2:**

Hotspot 2 is another relatively isolated area of Angola. The environmental characteristics of this hotspot are similar to that of Hotspot 1, with the forest edge rapidly retracting towards the West, and rivers overflowing regularly. As with Hotspot 1, the area follows the linear road infrastructure. In this hotspot, water-related health concerns are more prevalent than in Hotspot 1; currently, malaria prevalence rates are relatively low, but future risk of cholera and malaria prevalence is likely to be high (especially where standing water is present). It would therefore be opportune to consider interventions that maintain (or improve) these levels, to avoid the severity of outbreaks experienced towards the eastern area of the basin.

Any intervention in this hotspot must consider the safety risks associated with operating in the southern (specifically southwest) area of the hotspot, where landmines are a significant concern, reducing access and infrastructure development.

### **Hotspot 3:**

This area, situated between the cross-border settlements of Cazombu and Mwinilunga, is difficult to access, with relatively poor electricity and transport infrastructure, leading to long travel times to markets. Just to its North, is a prominent hydropower facility. While the facility creates limited employment opportunities, the energy produced does not reach the Hotspot area, as it is off the electricity grid. Therefore, the local communities do not benefit from the infrastructure.

Waterborne health challenges are prevalent in the region, mainly due to poor water supply infrastructure and traditional means of sanitation (despite the relatively proximity to bulk water supply infrastructure). As a result, communities are reliant on the natural resources, and depend on the sustainability of the nature conservation areas towards the southeast of the hotspot. With relatively higher rainfall (compared to southern areas of the vulnerability zone), improved rainfed agricultural activities (along with improved market access) stand to improve communities' adaptive capacity and also strengthen the natural resource – provided climate smart practices are employed to maintain the integrity of the soils.

In the North-East of Angola's Zambezi region, floods occur regularly; this natural hazard is coupled with social, economic and environmental vulnerability, heightened by man-made impact on natural ecosystems, through deforestation and poaching. The region also lacks infrastructure and is difficult of access.

**Geographical coverage edit:** *As a result of the workshop, it is suggested that hotspot 3 is expanded deeper into Angola, to cover Angola's territories close to the North-East border, to include the regions of Lago Dilolo and Lumbala, almost all the way to Hotspot 1.*

### **Hotspot 4:**

This hotspot is a cross-border area between Cavuma and Manyinga; the primary reason for its identification being poor sanitation infrastructure and a high prevalence of waterborne disease, which is related to the low levels of water and electricity supply, and poor, if any, health care services. Improved fresh produce availability could support the general health and wellbeing of the subsistence communities and would support food security in the area.

### **Hotspot 5:**

Deforestation at this hotspot is becoming a critical issue. This hotspot is an emerging hotspot requiring preventative action to mitigate increased risk of vulnerability. There is significant opportunity for reforestation and a restoration of forest around the settlement of Solwezi, through agricultural and wood harvesting practices that promote sustainable forest management. This needs to be coordinated with pollution control measures from the mines to minimise contamination of water sources and the environment. The area is relatively close

to the Copperbelt, making it attractive for households to migrate to; however, the natural resource base may not be able to sustain the growing communities unless forest management practices and improved agricultural production are promoted.

**Geographical coverage edit:** *The hotspot area should be expanded slightly to the west and south, to fully encompass the vulnerable area – as identified by stakeholders.*

### Hotspot 6:

The hotspot south of Kaoma is characterised by particularly poor services availability in rural villages (including particularly vulnerable road infrastructure) – with virtually no electrical power, poor water and sanitation, and no formalised health care services. Communities are almost entirely reliant on subsistence farming and significantly exposed to changes in rainfall regime given this area receives on average less rainfall than the northern area of the zone. There is also poaching within the hotspot especially around the Sioma, Liuwa and Ngwezi areas.

**Geographical edit:** *The hotspot should extend to the West, encompassing the Barotse floodplains. In addition, two smaller ('satellite') hotspots reflecting the same characteristics of deforestation and degradation to the east of the hotspot were identified and should also be mapped.*

*Through the consultations, the Lusaka urban and peri-urban area was identified as another key hotspot, described below:*

### Hotspot 15

Ground water contamination leading to water borne diseases such as cholera, was noted as a significant issue in Lusaka and surrounding peri-urban settlements. The area is characterised by very poor services (especially in peri-urban areas) whose supply is largely dependent on groundwater, which has led to the mushrooming of boreholes, often poorly equipped and maintained. The challenges here are similar to those indicated and identified in the hotspots covering Harare, Lilongwe and Blantyre where urban flooding, water contamination, and waste discharge (owing to untreated sewer intrusion and other contaminants from industries) are prevalent. This is further compounded by poor service delivery in water supply and sanitation.

### Hotspot 7:

The Caprivi strip has notoriously low service delivery levels, being a somewhat 'disregarded area' far away from Namibia and Botswana's primary service delivery areas. Given the relative remoteness of these communities, they largely subsist off the natural resources in the area - typically following the availability of water resources (i.e. with permanent settlements situated away from wildlife dispersal zones during the wet season, and seasonal homes near the river during the dry season).

Using wood for cooking and heating, the bush for sanitation, and natural water sources for water supply make them highly vulnerable to external shocks. Droughts and veld fires across all areas (close to as well as away from rivers) and flooding along the river courses – especially downstream and towards hotspot 8), is a major concern for human and livestock safety.

There is also very little formal schooling and healthcare available: severe poverty and in some cases illiteracy within entire villages is of great concern. Malaria is also reported as a major cause of illness (and thus reduced productivity) and death in the area.

A dual economy exists in the hotspot that presents opportunities to improve livelihoods and support localised development. Currently, thriving tourism hubs operate alongside these vulnerable communities, where benefits are largely limited to employment opportunities and conservancy concessions. Opportunities for local communities to intercept the tourism value chain through more impactful, formal mechanisms should be explored. Previously this was readily covered through the participation of community trusts under the rubric of

CBNRM, where they shared income from proceeds of trophy hunting. The dilemma is that trophy hunting was banned in Botswana, especially elephant trophies which were the main source of income for the local communities. Although Namibia's hunting regulations differ, the challenge should be considered a shared one across international borders between Botswana and Namibia.

Tourism in the hotspot has taken a step backwards, with many facilities (other than internationally-supported/run concessions) being unable to maintain a high standard of service to its customers. That is, locally run investments have seen declining numbers and a decline in service delivery, with quality of especially restaurant/food services potentially contributing to a large extent to the situation. Such decline has an overall negative effect in returning customers and may cause ever-escalating localised economic downturn. Localised interventions focussed on improved quality and quantity of local produce for the tourism industry, as well as the provision of hospitality training for local communities, would contribute to improved socio-economic growth in the hotspot.

### **Hotspot 8:**

This hotspot around Kasane is characterised by intense and frequent flooding. It is expected that the flood risk for communities in this area will increase as climate variations in the basin increase. Although the population density is relatively low, the close proximity of villages to each other and high numbers of child-headed households enables the potential for interventions to have high and potentially long-lasting impacts. Kasane is also a key regional tourism hub, with a substantial wildlife population (including functioning elephant corridors in the hotspot). The banning of ivory trade has largely impacted on community trusts that relied on proceeds from safari hunting. This has led to the increase in poaching in both hotspots 7 and 8 and is a clear need for interventions that address high levels of poverty in this region. The communities in this area therefore face similar challenges to those in Hotspot 7, and opportunities to support local communities enter into, and benefit from, formal markets must be explored. As a primary and niche tourism hub for Botswana where poverty and human wildlife conflict persist, the whole Kasane and Chobe enclave is dotted with inter-connected vulnerable areas requiring intervention.

The construction of a new major bridge near Kasane to link Zambia with the region south of the border, holds potential for hotspots 7 and 8 to achieve improved road/transport connection which will enable accessibility to share regional improvements in economic opportunities.

*Interventions for hotspot 7 and 8 must be of a cross-border nature given the land-use and human-wildlife-conflict (HWC) issues concentrated along and across the Chobe River affect both countries.*

### **Hotspot 9:**

This cross-boundary hotspot, although indicated in two separate areas (to the north in Zambia, and towards the south in Mozambique), have the same characteristics. In many ways, the hotspot has similar characteristics in terms of community and subsistence agriculture vulnerability as hotspot 10 (Zimbabwe), although with a lesser water resources contamination character. There two distinct areas within the hotspot houses significantly vulnerable communities who have little or no water supply and sanitation, and very poor transport routing, in addition to the same low-income levels, land degradation and related challenges as discussed in hotspot 10. As in hotspot 10, communities rely to some degree on harvesting of natural wildlife resources that migrate in the area.

The hotspot reflects a much drier savannah landscape than towards the west of the region, where higher levels of vegetation cover and lower levels of evapotranspiration provide a buffer against systemic shocks which villages face, –The hotspot is characterised by higher than average potential for crop failure in drought years or when excessive heat days are experienced. The high dependence of communities on natural resources and a lack of access to basic services are what identified this hotspot as one of the priority areas for intervention.

**Hotspot 10:**

This hotspot is a large band widely spaced between the nature reserves towards Zimbabwe's northern border, and Harare in the southeast (recognising that the areas closer to protected areas and Harare have slightly improved income opportunities). There is huge pollution of water sources due to poor waste water management disposal by major cities and mines as well as illegal gold panners. The urban portion of hotspot is largely around the peri-urban settlements and urbanised areas of Harare and immediate surrounds. The water pollution from Harare is traced along one of the major rivers through Chinhoyi town all the way to the Zambezi Valley rural areas and finally into the Zambezi River. Along the way, the water has been so polluted that it is no longer suitable for irrigating tobacco and other crops, leading to investments in groundwater by the farmers. The rural area of the hotspot band has high levels of poverty and food insecurity. Subsistence agriculture is insufficient to feed communities year-round especially along the valley areas of Muzarabani, Mbire, Chitsungo, Kanyemba, resulting in a high reliance on food imports from other areas. The border stretches from Mukumbura in the East, Mbire in the North, Makuti, and Siyabuwa along the Zambezi Valley and the border with Mozambique; it is characterised by vulnerable, degraded ecosystems exposed to tsetsefly and malaria as well as flooding and drought. The cost of the imported food makes households with limited income (and in some cases, no income) highly vulnerable. With rainfall being variable, droughts frequent, water pollution along the Manyame and Mazoe rivers endemic, soils leached and evapotranspiration high, the potential for land being agriculturally viable is reducing rapidly. Critical interventions in this hotspot include agricultural interventions that not only maintain but improve the degraded nature of both the land and water bodies.

**Geographical coverage edit:** *It is recommended that rural and peri-urban/urban areas within Hotspot 10 be delineated (based on the coverages described in the narrative), given the urban-rural issues differ significantly (and thus require different project responses). Linked to this, it is also recommended that the original hotspot band be extended north, to fully encompass the rural hotspot areas.*

### Hotspot 11:

The area indicated by the hotspot runs along the banks of the lake (the name and boundary/ownership of which is contested between Tanzania and Malawi). This hotspot is indicated as only slightly lower population density than that of Hotspot 12 below, but settlements are of a more rural, remote nature. The density of population alone asks for critical intervention, given the associated levels of poverty and high prevalence of waterborne disease outbreak that communities in this hotspot face.

With poor road accessibility and a lack of reliable energy sources, communities have limited adaptive capacity to respond to the impacts of hazards such as floods and earthquakes. At a household level, reliance on poor farming practices outside large commercial crop planting areas puts significant strain on communities to be self-reliant. Improved agriculture, even hydroponics, as well as a focus on sustainable fisheries would enhance the ability of the natural resources in the hotspot to support the livelihood needs of communities. Capacity building around improved community-based natural resource management and monitoring should accompany these interventions to avoid catchment degradation and preserve the integrity of soils.

Given the transboundary nature of this hotspot, similar interventions in both Malawi and Tanzania will be required to ensure socio-economic development occurs equitably – avoiding cross-border conflict or illegal migration. However, the uncertainty about rights to the Lake's water resources is contentious and the area may benefit if clarity can be found at a governance level, especially with regard to investment in aquaculture.

### Hotspot 12:

The cities of Lilongwe and Blantyre draw significant numbers of migrants, creating almost seamless urban edges from north to south along the hotspot. This hotspot has the highest population density in the basin, and with urban capacities and poverty rates growing rapidly (especially in the peri-urban areas surrounding the cities), existing infrastructure and services are unable to support the population as they face issues of urban flooding, increasingly strong winds, and waterborne disease outbreak. Interventions in this area could focus on improved, climate resilient water and sanitation services (a lack of which puts pressure on the health care services), sustainable urban drainage systems, and urban agriculture (including vertical agriculture), to support food security. If the identified issues in these vulnerable areas are not addressed, there is a high risk of secondary impacts (linked to poverty and disease outbreak) spreading more widely both within Malawi and across the Mozambican border.

The proposed interventions are also applicable to other regional hubs in the Zambezi, where similar socio-economic and physical issues persist. The proposed approaches to improved sanitation, waterworks and food security in this dense (peri-)urban hotspot will therefore serve as demonstration pilots, with the aim of motivating for wider investment and replication elsewhere in the basin (e.g. hotspot 10).

**Geographical coverage edits:** *It is recommended that Hotspot 12's radii be reduced to just cover the urban and peri-urbans areas around Lilongwe and Blantyre and another hotspot be introduced along the banks of the Shire, given the urban-rural issues in the south differ significantly (and thus require different project responses). Furthermore, the issues identified along the Shire in Malawi correlate with those identified on the Mozambican side (i.e. the original narratives for hotspot 13 and 14).*

*Based on further discussion between the GIS team and CRIDF's Mozambique and Malawi Workshop Facilitators, it has therefore been recommended to merge and reorient hotspots 13 and 14 to cover the riverine area alongside the Shire (including the area between Moatize to the Shire) and extending into southern Malawi. The revised narrative for the \*new\* Hotspot 13 is:*

### Hotspot 13

Settlements<sup>1</sup> located along the Shire River in Malawi and Mozambique are exposed to severe, and increasingly prevalent, floods – requiring significant support from the governments’ disaster response ministries. People have died, fields damaged, property lost, and in some cases, infrastructure has been destroyed. Siltation issues (resulting from severe deforestation and erosion in hotspot 14) have further affected ecosystem services (including flood mitigation) and increased the region’s environmental vulnerability to flooding. The region is also affected by strong winds, and at times storms. With accessibility to some of these areas also posing a major challenge, services and links to markets are limited – which exacerbates widespread poverty and risk of disease outbreak.

Given groundwater in many parts of this area is saline, communities remain reliant on the river as source for domestic and livelihood needs. However, they currently lack the infrastructure to pump and reticulate water to areas of land above the flood line. Priority interventions in the area should therefore focus on improved, climate resilient run-off-river supply schemes – including suitable water storage facilities to account for extended / unexpected drought period.

Given the intrinsic links between challenges in hotspots 13 and 14, it must be noted that the issues in these hotspots cannot be tackled in isolation; that is, interventions to address deforestation and restore the integrity of soils and catchments in hotspot 14 are a critical starting point toward addressing risk of flooding in hotspot 13.

*In addition, the area to the west of the \*new\* hotspot 13 was identified as another distinct hotspot, where the challenges and resultant vulnerabilities in this area have a direct knock-on effect on the \*new\* hotspot 13. This area is renumbered hotspot 14 – with the following narrative:*

### Hotspot 14

This hotspot covers dry lands, where local communities are affected by droughts. Without proper irrigation facilities, this vulnerability to droughts makes agriculture an unreliable practice, affecting food security. Further, there is a lack of economic opportunities in the region. An important livelihood activity is wood cutting, wood being used for fuel and as construction material. As a result, deforestation and erosion in the hotspot is at a critical level. This increases the prevalence and intensity of floods in downstream areas. In a vicious cycle, food insecurity and poverty trigger migration flow towards riverbeds where the population is vulnerable to floods (see Hotspot 13 above).

**Geographical coverage note:** *hotspot 14 should include regions of Cataxa, Changara, Mungari, Guro, Macossa and Maringuaco (stretching between the Zimbabwe border to a few kilometres away from the Zambezi and Shire rivers).*

---

<sup>1</sup> Such as Murraca and Caia (Mozambique) and Bangula (Malawi)

### 3 Country Project Repositories / Typologies

As noted in the Background section, the agendas and durations of engagement in each country differed. As a result, the level of detail gathered from the project typology and repository (i.e. existing and planned/proposed projects) discussions differs. The last section of this report on Next Steps recommends follow-up actions required to populate and refine each country’s project information to the same level of detail.

#### 3.1 Angola

Due to the consultation planned for half-day participants were able to briefly discuss appropriate project typologies relative to the hotspot issues identified from the groupwork mapping exercise. These included:

- Construction of bridges and roads
- Construction of infrastructure for water management (management of rivers)
- Construction of green infrastructure
- Mobilisation and awareness raising among communities
- Modernization of traditional techniques for honey production (“smart apiculture”). Production of honey in the Lucusse, Lumbala, Nuimbo (another group indicated the production all the way to Naeguimbo)
- Construction of a bridge near Lumbala and between Lumbala Naeguimbo and Mainha (mid-distance)

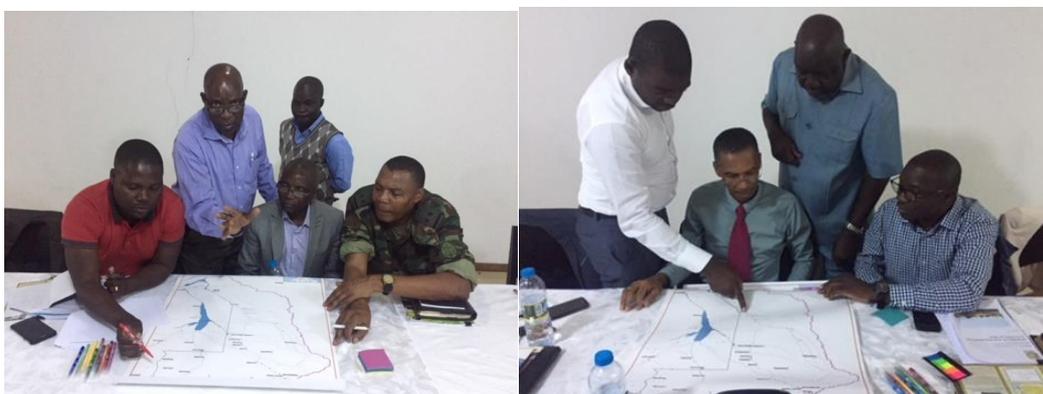
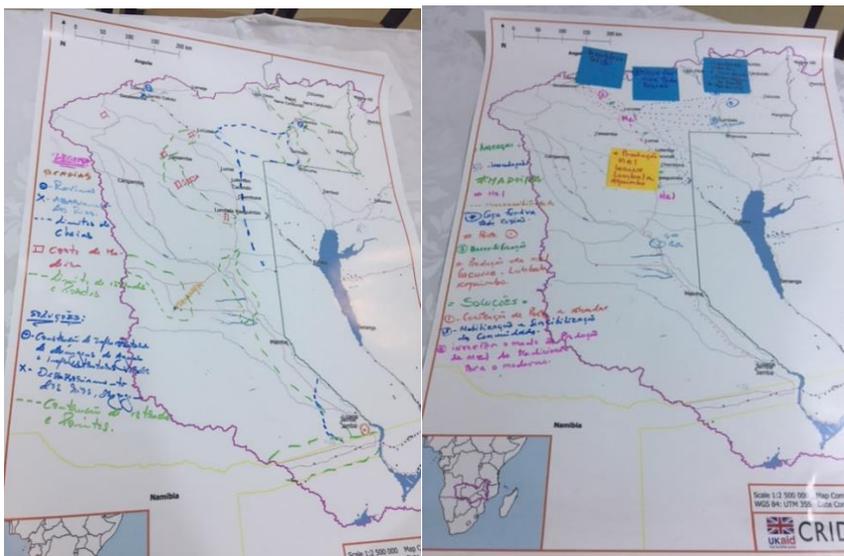


Figure 3: Angola group work discussions and participants

## 3.2 Botswana

**Table 1: Existing & on-going projects in Botswana**

Project Name / Location	Typology	Additional information
Fish farming near Parakarunga	Fisheries/aquaculture	Funded by government and donors
Lesoma cluster fencing (to avoid HWC)	Improved HWC managed and reduction of HWC incidences	Government funded in collaboration with KAZA
Agro-tourism projects for youth	Increased awareness in nature conservation as an economic good and livelihood support mechanism	No details available on funding arrangement.
Road construction	Improved infrastructure for ease access to and linkages with other areas and markets	
CBNRM project	To address HWC and improve cooperation of communities in nature conservation	KAZA initiative in collaboration with Karakal and Kalepa Trust
Kasane Weaving Project for women	Improved access to markets and a source of income especially for vulnerable community members particularly women	No details available on funding arrangement.
Conservation agriculture	Improved production and conservation of the environment	No details available on funding arrangement.

**Table 2: Planned projects in Botswana**

Project Name / Location	Typology	Additional information
Slaughter facility/Abattoir	Improved and accessible market and livestock processing	No details available on funding arrangement.
Road construction	Improved access to the area and markets	
Boreholes for water supply and small gardens	Improved access to clean water supply and for irrigating gardens	No details available on funding arrangement.
Joint anti-poaching initiative	Improved cooperation and coordination in addressing HWC	KAZA, Department of wildlife and National Parks, Police and community trusts
Horticulture project in Mabele	Increased production and improved access to markets	No details available on funding arrangement.

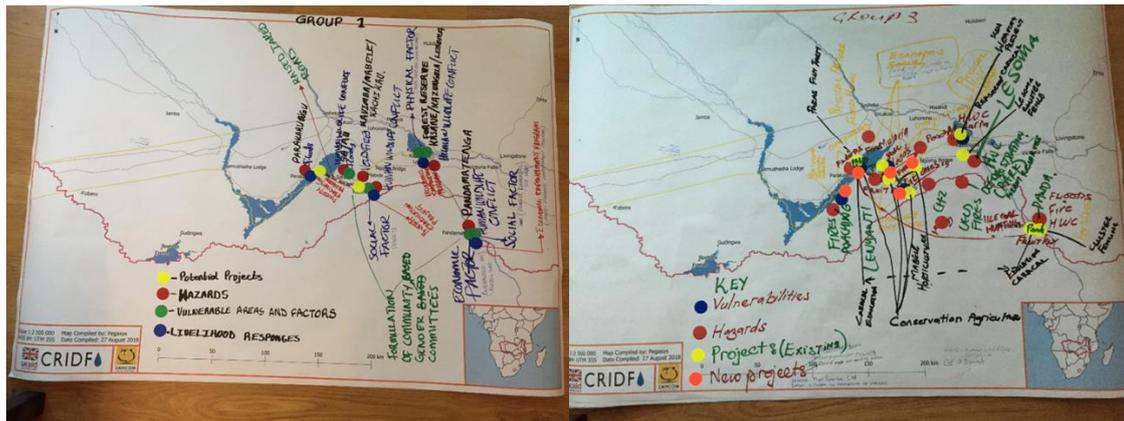


Figure 4: Botswana participants and group work discussions

### 3.3 Malawi

Table 3: Existing & on-going projects in Malawi

Project Name / Location	Typology	Additional information
Drought Recovery and Resilience Project	Improved food security and livelihoods restoration interventions	World Bank funded countrywide programme
Lake Chilwa Basin Climate Change Adaptation Programme <sup>2</sup>	Afforestation, capacity building for agribusiness and livelihood activities (including aquaculture), community based natural resource monitoring.	Funded by Royal Norwegian Embassy (RNE). Programme ended in 2017. A hotspot approach was used to determine the most vulnerable areas requiring intervention.
Shire River Basin Management Programme	Catchment restoration for reduced erosion and improved livelihoods; provision of water related infrastructure	World Bank funded
Shire Valley Transformation Project	Improved agricultural productivity and sustainable management and utilization of natural resources.	World Bank funded
Malawi Disaster Risk Reduction Programme	Improved water supply component: drilling boreholes that will be solar powered	No details available on funding arrangement.
Malawi Flood Emergency Recovery Plan	Country wide restoration of agricultural livelihoods, reconstruction of critical public infrastructure to improved standards in the flood-affected districts.	World Bank funded
M-CLIMES (Modernized Climate Information and Early Warning Systems)	Improved climate information for planning agricultural and on-farm activities, providing warnings of severe weather for fishers on Lake Malawi, improving flood forecasting and monitoring, and fostering information exchanges through mobile platforms. Intervention typology based on specific hazards in target areas of Kalonga, Salima and Mangochi	GCF and UNDP funded. Implemented by Department of Water and Department of Disaster Management Affairs

<sup>2</sup> <https://cepa.rmportal.net/Library/climate-change/lake-chilwa-basin-climate-change-adaptation-programme-impact-report-2010-2017>

Project Name / Location	Typology	Additional information
Malawi Disaster Risk Management Support	Building centres to house communities during and after disasters	Department of Disaster Management Affairs
ASWAp (Agriculture Sector Wide Approach)	Food security, agribusiness and market development, and sustainable land and water management	NEPAD & Government funded
MASAF (Malawi Social Action Fund)	Livelihood support (employment and improved services) to poor and vulnerable households in the urban, peri-urban and rural areas through implementation of productive public works programme.	World Bank funded

**Table 4: Planned projects in Malawi**

Project Name / Location	Typology	Additional information
Linthipe River Basin Programme (central region)	Four components proposed for both programmes: infrastructure, water resource management, environmental protection and livelihoods support.	
Rukuru River Basin Programme (norther region)		
Salima Water Project	Water Supply (large scale)	World Bank appears to have pulled out of this project – to be investigated further
Diamphwe Multipurpose Dam	Water supply to Lilongwe and irrigation development in surrounding areas	Already under review by CRIDF's IP & MF team
Blantyre Water Project	Water Supply (from Likhubula river to Blantyre – large scale)	Financing secured in 2017 from Bank of India – more information required to determine current status
Mwanza Ground Water Management Project		No additional information given
Mini Grid Projects	Solar-wind hybrid or hydro	Suggested locations: Rumpi, Mchinji and Nkhata Bay
Songwe River Basin Development Programme	Irrigation and water supply components specifically	CRIDF already working with SRB Exec Sec and other financiers on mobilising finance and providing TA support.
FARMSE (Facility to Assist Rural Markets, Smallholders, and Enterprise) <sup>3</sup>	Aims to reduce poverty, improve livelihoods and enhance the resilience of rural households on a sustainable basis – specific interventions TBD. Supports poor households' access to credit (focussing on women and youth). North and Central Malawi focus.	More information required on status of project, and level of support for its implementation from IFAD and GIZ.

<sup>3</sup> <https://webapps.ifad.org/members/eb/122/docs/EB-2017-122-R-12-Project-Design-Report.pdf>

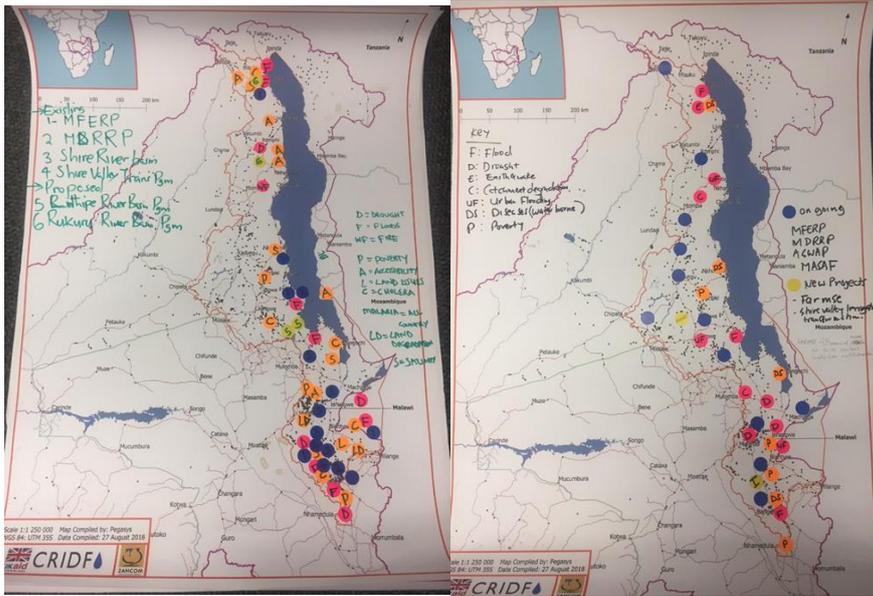


Figure 5: Malawi group work discussions

### 3.4 Mozambique

Limited time resulted in participants only being able to briefly discuss appropriate project typologies relative to the hotspot issues identified from the groupwork mapping exercise. These included:

- Strengthening the exchange of information with upstream countries
- Mitigation infrastructure: regulation of the effluents; protection interventions
- Sensitization of communities

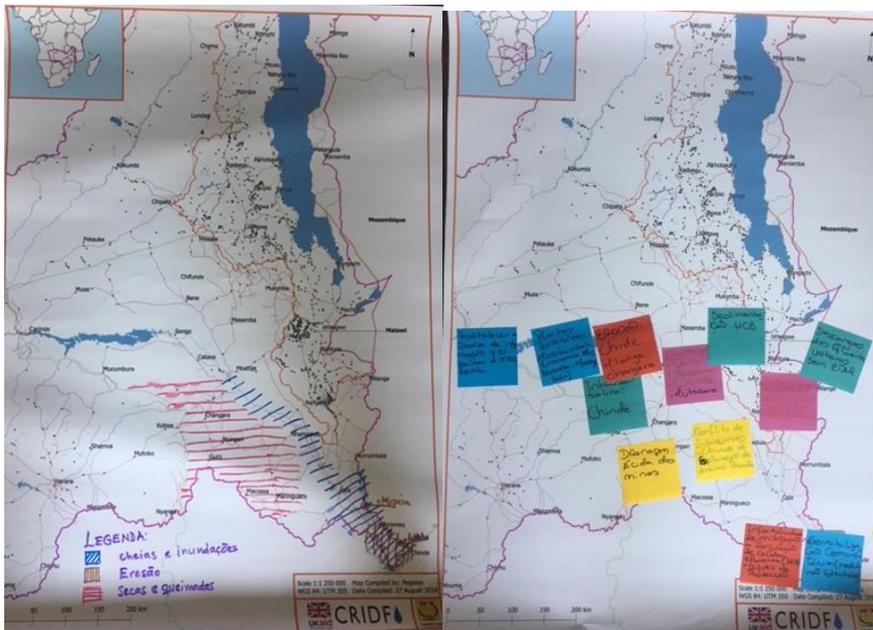




Figure 6: Mozambique group discussions and participants

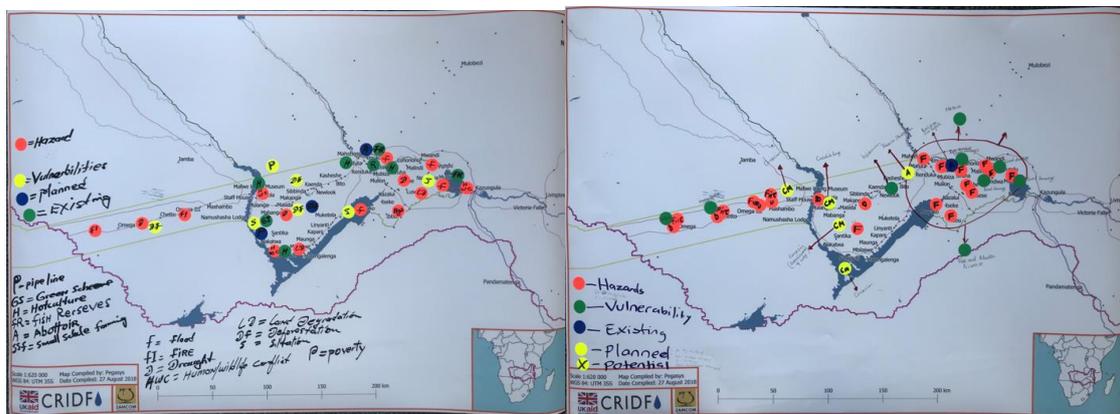
### 3.5 Namibia

Table 5: Existing projects in Namibia

Project Name / Location	Typology	Additional information
Concession Management	Environmental/Ecological: Various types of concessions, from crocodile farming to Lodge establishment/tourism, are in place. This provide economic incentive for the local participants; however, the concessions do not always seem to provide maximum benefit to the local economy and there is opportunity to enhance the benefits that can be gained	Concessions managed often via Namibia Government processes.
Conservancies	These are seen to be promoting environmental protection, however with food security concerns the future of the conservancies in terms of biodiversity strength may be in danger.	Private/public partnerships and private land owner efforts
Tobacco plantation	Agriculture: Crop production primarily for export	Small in nature – there may be opportunity to expand the impact by reproducing the intervention elsewhere in the area – since the local skill have now been cultivated and local farmers can therefore benefit directly.
Fish farming	Agriculture: food security – mainly providing local supply	Same comment as above
Rice farming	Agriculture: Crop production for regional food security and supply	Same comment as above
Chicken farming	Agriculture: Livestock – medium sized	Same comment as above
Horticulture	Agriculture: Crop production	Same comment as above
Orchard	Agriculture: Crop production: fruit	Same comment as above
Auction kraal	Agriculture: Livestock. There may be opportunity for another of the same type, towards the west of the area – currently livestock sales take place on small scale only, locally, towards the west.	Details unknown
Pipeline - water supply	Infrastructure: Water reticulation	Details unknown
Village Electrification	Infrastructure: significantly limited. The electrification is being done in the villages that are considered some of the poorest, thus supporting the very rural poor communities to alleviate some of their dire situations	Details unknown
Green Schemes	Agriculture: commercial schemes typically using pivot irrigation and run-of-river water supply. The schemes provide some employment opportunities for local communities but are owned and managed by government.	Government

**Table 6: Planned projects in Namibia**

Project Name / Location	Typology	Additional information
Forestry restoration/afforestation	Environmental/Ecological: small scale only – need to be multiplied	No additional details available – the potential is recognised to exist, however not much is in place to move the potential towards reality
Small scale farming initiatives	Few and far between. Existing successes should be capitalised on to duplicate and multiply food security options in the region.	As above
Abattoir	Planned, in relative proximity to the existing auction kraal	Details not available
Electrification	Planned, in relation to road/bridge infrastructure construction	Very selective in terms of location – projects such as these should be more widespread.



**Figure 7: Namibia work group discussions**

### 3.6 Tanzania

**Table 7: Existing projects in Tanzania**

Area	District	Existing / Proposed	Typology	Additional information
Luwumbu	Makete	Implementation	Irrigation	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Kisinga	Makete	Implementation	Water supply	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Lupalilo	Makete	Implementation	Water Supply	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Iwaiwa	Makete	Implementation	Water supply	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b>

Area	District	Existing / Proposed	Typology	Additional information
				<a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Rumakali	Makete	Implementation	Hydropower	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Kigulu	Makete	Implementation	Water supply	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Iniho	Makete	Implementation	Siltation management	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Mbambo	Busekold	Implementation	Irrigation	
Songwe (lower, middle and upper)	Kyela / ikeje	Implementation	Multipurpose dam, including hydropower, irrigation and water supply	
Suma	Rungwe	Implementation	Hydropower	
Kiwira	Rungwe	Implementation	Hydropower	
Lituli	Nyasa	Implementation	Water supply	
Lundu	Nyasa	Implementation	Water supply	
Ndumbi	Nyasa	Implementation	Water supply	
Ndumbi / Liweta	Nyasa	Implementation	Water supply	
Mkili	Nyasa	Implementation	Water supply	
Njambe	Nyasa	Implementation	Water supply	
Liuli	Nyasa	Implementation	Irrigation and Water supply (bee keeping proposed)	
Lundo	Nyasa	Implementation	Irrigation and water supply	
Mbamba Bay	Nyasa	Implementation	Water supply	
Madunda	Ludewa	Implementation	Hydropower	
Madope	Ludewa	Implementation	Hydropower	

In terms of water supply projects, these were all household water supply projects.

**Table 8: Proposed interventions for selected areas in Tanzania**

Area	District	Existing / Proposed	Typology	Additional information
Iwawa	Makete	Proposed	Forestry – establishment of indigenous tree nurseries	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Mbalatse, Lupila, Mkwama, Ipepo, Mango'oto, tandala, Lupalilo, Iwawa, Isalana, Ipelele, Kipagalo, Bulongwa, Iniho, Luwumbu	Makete	Proposed	Identification and demarcation of water sources and water source conservation	For further details on these project ideas please contact <b>Raphael Kaloingola (district official from Makete)</b> <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977

Area	District	Existing / Proposed	Typology	Additional information
Lupila, Ukwama, Luwumbu, Kipagao, Ipelele	Makete	Proposed	Beekeeping	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Maliwa	Makete	Proposed	Water supply	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Makangalawe	Makete	Proposed	Water supply	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Lihuli	Nyasa	Proposed	<ul style="list-style-type: none"> <li>Rehabilitation of mango group water supply</li> <li>Water source protection</li> <li>Bee keeping</li> </ul>	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Lundu	Nyasa	Proposed	Water supply project at Lumbi & Iwete	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Rundo	Nyasa	Proposed	Expansion of irrigation schemes	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Mkili	Nyasa	Proposed	Water supply and protection of water sources	For further details on these project ideas please contact Raphael Kaloingola (district official from Makete) <a href="mailto:kalongolaraphael@gmail.com">kalongolaraphael@gmail.com</a> and +255755678977
Muhalo and Mbamba		Proposed	Health awareness and early warning flood system	Please refer to Group 2 map for the locations of these projects. For more details on these project ideas please contact <b>Emmanuel (Tanzania Water Partnership)</b> and member of the NASC
Mkili, Mjambe, Maguu, Liull		Proposed	Infrastructure and health awareness	
Lundu		Proposed	<ul style="list-style-type: none"> <li>Health awareness and Climate smart agriculture</li> </ul>	
Nkomang'ombe		Scaling-up	<ul style="list-style-type: none"> <li>Scaling up of water supply</li> <li>Climate smart agriculture</li> <li>Health awareness and services</li> <li>Water and road infrastructure</li> </ul>	
Iwela		Scaling-up	Water supply	
Lupingu		Proposed	Water supply	

Area	District	Existing / Proposed	Typology	Additional information
Ludema		Proposed	Health awareness	
Mahenye (and surrounding areas)		Proposed	<ul style="list-style-type: none"> <li>Land-use management</li> <li>Soil conservation</li> <li>Climate smart agriculture</li> </ul>	
Madope		Proposed	Climate smart agriculture	
Lupalilo		Proposed	Health awareness	
Ipelele and surrounding areas		Proposed	<ul style="list-style-type: none"> <li>Climate smart agriculture</li> <li>Health awareness</li> <li>Land-use management</li> </ul>	
Kiwira, Ilolo, Kyimo areas		Proposed	<ul style="list-style-type: none"> <li>Climate smart agriculture</li> <li>Soil conservation</li> <li>Land-use management planning</li> </ul>	
Kasumulu, Kyela and surrounding areas			Early warning system in Songwe catchment area	
Ileje, Isongolo and surrounding areas			<ul style="list-style-type: none"> <li>Health awareness</li> <li>Climate smart agriculture</li> </ul>	

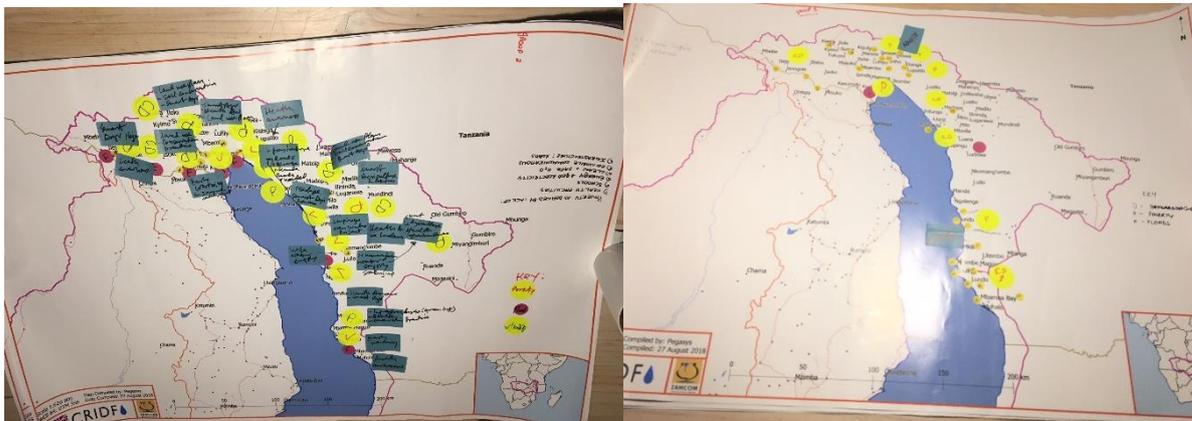


Figure 8: Tanzania work group discussions

### 3.7 Zambia

**Table 9: Existing & on-going projects**

Project Name / Location	Typology	Additional information
Reforestation	Improved land use and catchment management practices	No information
Green infrastructure		No information
Water supply and sanitation	Improved supply for domestic use and productive uses	World Bank and government
Pre-position of relief support	Improved resilience of vulnerable households through social safety nets	Government and donors
Water Stewardship near Lake/dam	Improved catchment and environmental management and benefit sharing	WWF, government and donors
Conservation farming	Improved farming practices and environmental management practices	No information
Rain water harvesting	Increased storage and assurance of supply	Government and donors

**Table 10: Planned projects**

Project Name / Location	Typology	Additional information
Enforcement of environmental regulations	Stricter compliance monitoring and enforcement of regulations for catchment protection	No information
Climate smart agriculture	Improved farming practices and increased water supply through boreholes and dams	No information
Cluster fencing and chilli planting in Rufunsa and Mfuwe	Improved conservation management and awareness creation through protection of infrastructure from HWC	No information
Water harvesting (dams and boreholes)	Improved storage and assurance of supply	No information
Flood and erosion mapping (early warning systems)	Catchment management and land use practices improvement	No information
Drainage refurbishment and planning in urban areas	Improved waste and water management techniques and practices	No information



Figure 9: Zambia work group discussions

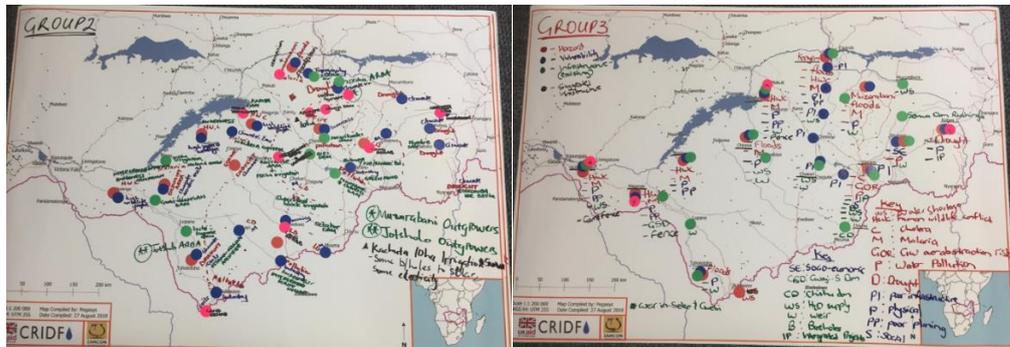
### 3.8 Zimbabwe

Table 11: Existing & on-going projects in Zimbabwe

Project Name / Location	Typology	Additional information
SADC Hycos project	Climate and information	Funded by donors
Irrigation rehabilitation	Resuscitation of dysfunctional irrigation schemes	Government and donors
Integrated projects such as water harvesting projects including weirs, boreholes and small dams (e.g. Semwa Dam)	Increased and improved water supply for domestic use and productive uses	NGOs and government (e.g. ECHO and World Vision in Muzarabani/Mbire)
Groundwater supply	Improved infrastructure for ease access to and supply of water to vulnerable communities	
Malaria control	Malaria control measures through seasonal fumigation of households in the Zambezi valley	Government and donors
CAMPFIRE CBNRM initiative	Improved conservation of nature and awareness for sustainable use	CAMPFIRE and District Councils
Conservation agriculture and drought relief	Improved production and conservation of the environment through subsidies by providing relief to vulnerable communities	No details available on funding arrangement (possibly WFP, government and others)

**Table 12: Planned projects in Zimbabwe**

Project Name / Location	Typology	Additional information
Flood early warning systems and platforms	Improved preparedness and response mechanisms for communities and other stakeholders	Donors and government.
Reforestation, land rehabilitation and gully reclamation	Improved land cover to ward off degradation	Government and donors
Boreholes for water supply and small gardens	Improved access to clean water supply and for irrigating gardens	Government and donors
Smallholder farmer irrigation support	Improved efficiency and production by vulnerable communities through adoption of technologies	Donors and government
Game fence	Decrease HWC in areas neighbouring national parks and along wildlife corridors	No details available on funding arrangement.



**Figure 10: Zimbabwe work group discussions and participants**

## 4 Next steps

CRIDF will present the updated findings at the 3<sup>rd</sup> Zambezi Stakeholder Forum in October 2018.

Most immediately, this work will be incorporated into the core livelihood component of the ZSP. CRIDF and ZAMSEC will reengage national contacts to further populate and expand the initial project repository tables. The intention of this is to build up an exhaustive list of potential basin-wide livelihood projects that respond to critical hotspot issues, which can be clustered into portfolios for concept note development. Specific modalities on how and when this should be taken forward will be discussed and agreed upon with ZAMSEC and NASC representatives.