

# RESILIENT WATERS PROGRAM BASELINE STUDY

## SIOMA

USAID's Resilient Waters Program aims to **build more resilient and water-secure communities** in the Okavango and Limpopo river basins. Resilient Waters focuses specifically on transboundary water security and resource management; safe, sustainable drinking water and sanitation services; climate change adaptation; and conserving biodiversity and ecosystems.

The purpose of this document is to:

- Provide the community of Sioma with feedback from our study;
- Highlight priority areas for Sioma to become more resilient; and
- Facilitate a planning session based on the information we have collected.

### SIOMA AT A GLANCE

We interviewed **76 people in Sioma**

The distribution of people interviewed was almost equally split between youth and non-youth.

\* Younger than 35 (47%) Older than 35 (51%)

Most of the people interviewed were female

\* Male (37%) Female (61%)

In Sioma, **farming** is the primary source of income.

### Understanding of resilience in Sioma



Sources of natural shocks and stressors in Sioma are **droughts, floods, fires and wild animals**.

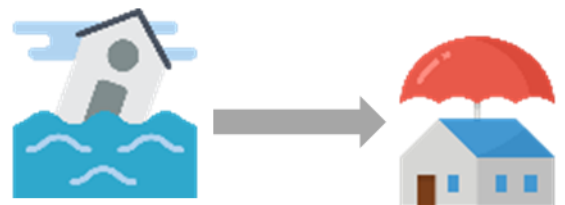


These shocks and stressors negatively impact households involved in agriculture; and result in there being **very limited food and water** for the community



In Sioma, resilience is seen as **social protection from the government**.

### What is resilience?



**Resilience** is the ability to respond to shocks and stressors. There are four dimensions of resilience.

### Absorptive Capacity



Can we **protect** ourselves and **cope** with events?



### Adaptive Capacity

Can we **adjust** the way we live after an event has happened?

### Anticipatory Capacity



Can we make a **plan** for other events that might happen to us?



### Transformative Capacity

Can we **change the way that we do things** based on what we have learned?

\*Age graph and gender graph: \*2% = No response



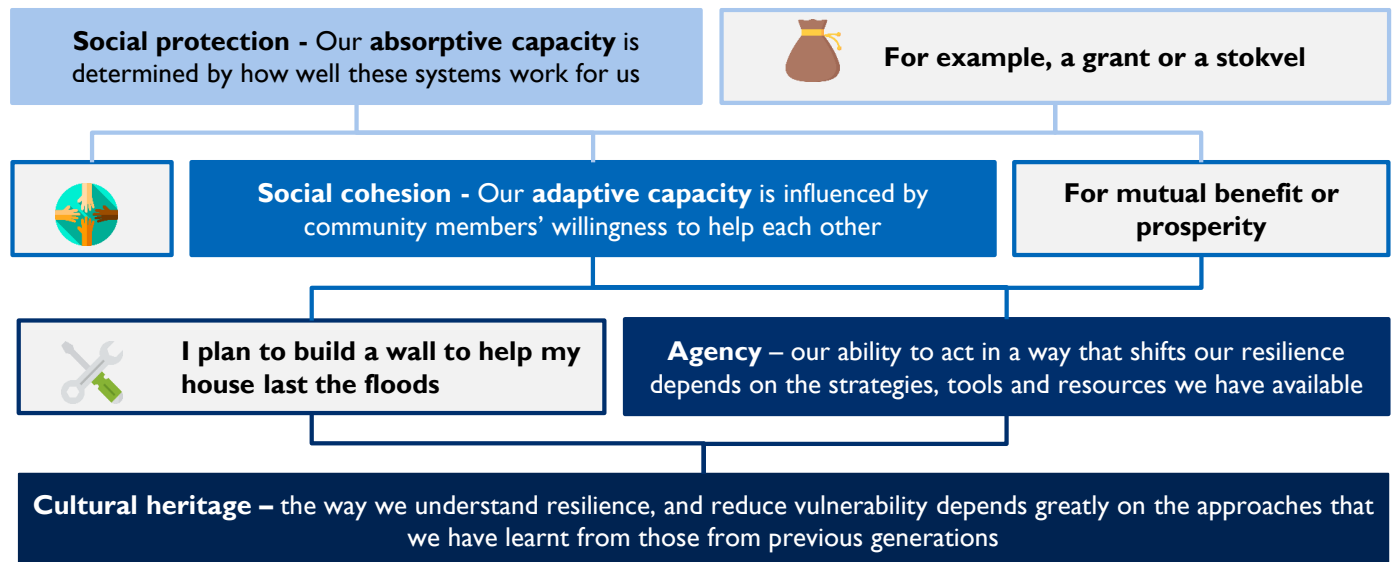
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## BASELINE STUDY

We did a baseline study in 13 communities in seven countries in the Limpopo and Okavango river basins. We did this to find out how households understand resilience, how communities are building resilience, and what this means for our work. One of the areas that we surveyed was Sioma, Zambia. Sioma falls into the Okavango River Basin. The Okavango River Basin covers Central Angola, Namibia and Botswana.

## WHAT DETERMINES RESILIENCE?

Our baseline study found that resilience is determined by four factors: **1. Social protection, 2. Social cohesion, 3. Agency, and 4. Cultural heritage.**



## WHAT DID WE FIND OUT IN SIOMA?

Water shortages caused by drought are the biggest challenge faced by communities in Sioma. Droughts have a widespread effect reducing crop yields and increasing food insecurity. The extreme drought conditions sometimes lead to wildfires causing further stress. Natural resources are seen as a source of food and income, but animals are also viewed as a threat, emphasising the issue of human-wildlife conflict in the region. The latter is likely to increase as competition for the remaining natural resources continues to grow.

## DROUGHT IS THE BIGGEST CHALLENGE IN SIOMA



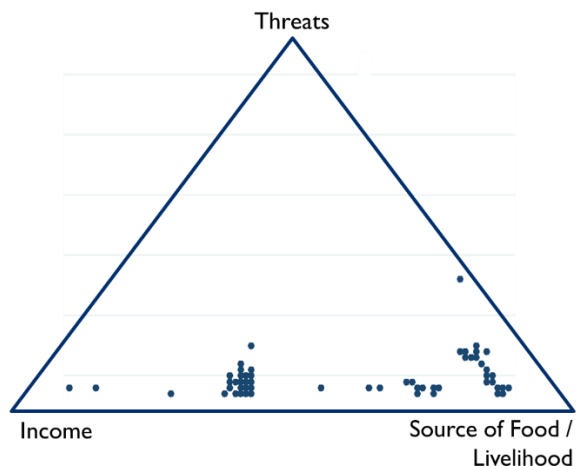
Water shortages caused by drought are the biggest source of stress for households in Sioma. These have damaging knock-on effects in terms of food security particularly in Sioma where many communities are dependent on subsistence farming for food and income generation. Worsening droughts reduce the crop yields resulting in widespread hunger in the communities around Sioma.

The poor rains have also contributed to the spread of wildfires devastating crops and homes. Community members also noted that the proximity of wild animals is a threat – both directly in terms of access water sources (e.g. crocodiles), but also their destruction of crops or homes (e.g. elephants) as well as livestock (e.g. leopards). The effects of the drought are widespread.

## SIOMA AND NATURAL RESOURCES

**Natural resources are a source of food and income, but also pose a threat for households in Sioma.**

The heatmap below shows that water is primarily a source of food / livelihood in Sioma. The lack of acknowledgement of water as a threat is most likely due to the scarcity of water in the area, and the community's interpretation of the question.

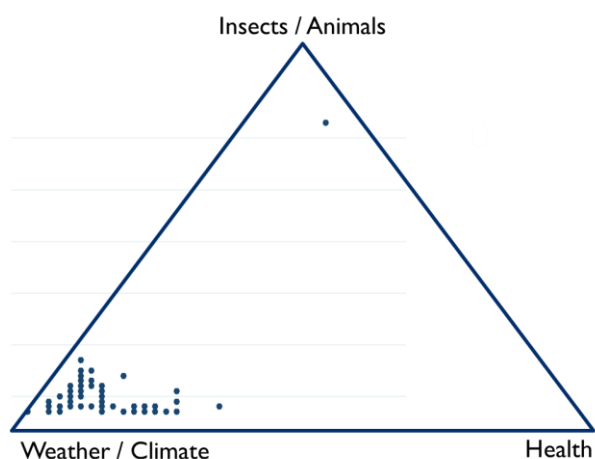


- Plants are primarily seen as a source of food, although they can also be a source of income.
- Animals are seen as both a source of income and food; and as a threat because of the human-wildlife conflict experienced in the area.

## THE CAUSES OF SHOCKS AND STRESSORS

**Weather and climate are the main forms of shocks and stressors, with some concern related to the threat of human-wildlife conflict.**

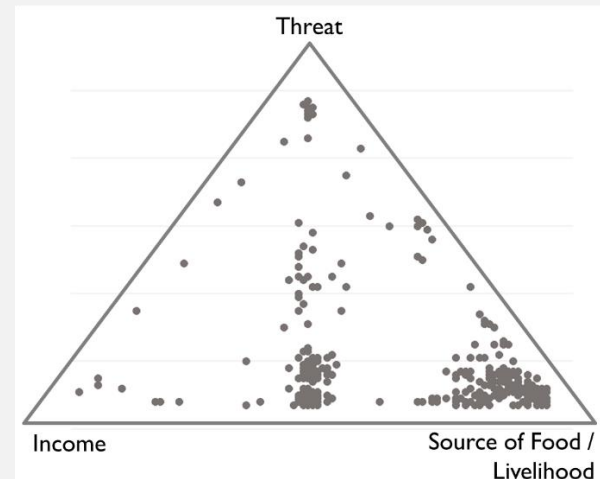
Sioma is heavily affected by drought conditions



## SIOMA COMPARED TO THE OKAVANGO RIVER BASIN

**As with Sioma, national resources are seen as a source of food or livelihood but can also be threats.**

In contrast to Sioma, water (or the lack thereof) is acknowledged as a threat in the Okavango River Basin.

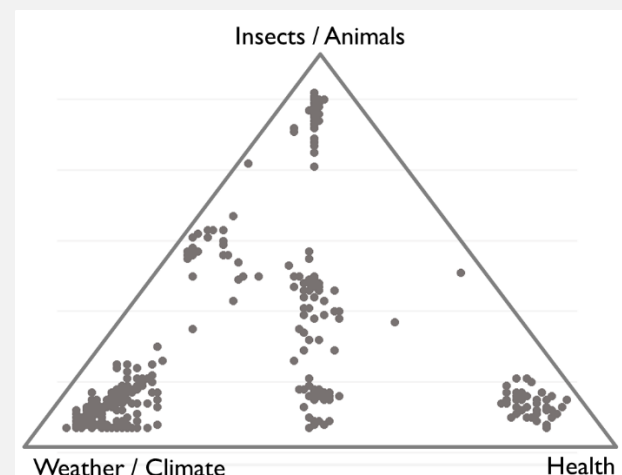


- As in Sioma, plants are primarily seen as a source of food although they can also be a source of income.
- As in Sioma, animals are seen as both a source of income, food and as a threat.

## THE CAUSES OF SHOCKS AND STRESSORS

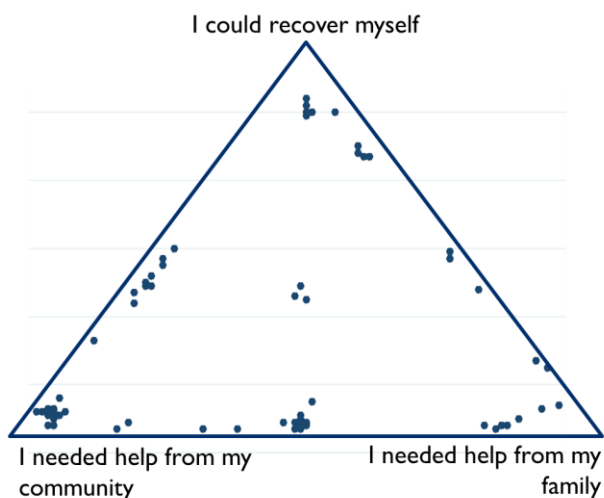
**As in Sioma, water and climate are the main forms of shocks and stressors in the Okavango River Basin.**

The threats presented by insects / animals and health are acknowledged much more acutely in the basin, as is health which is not viewed as a threat in Sioma



## RECOVERY FROM SHOCKS AND STRESSORS

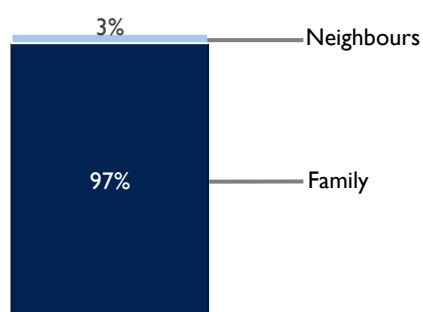
Households in Sioma were either able to recover themselves, or needed help from either their community or their family.



## SUPPORT AND PLANNING FOR SHOCKS AND STRESSORS IN SIOMA

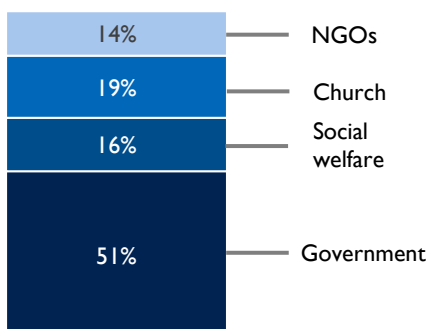
**39% of households have people that they can turn to for support**

There are therefore very low levels of support in Sioma. Of those that **do have people to turn to**, most could turn to family.



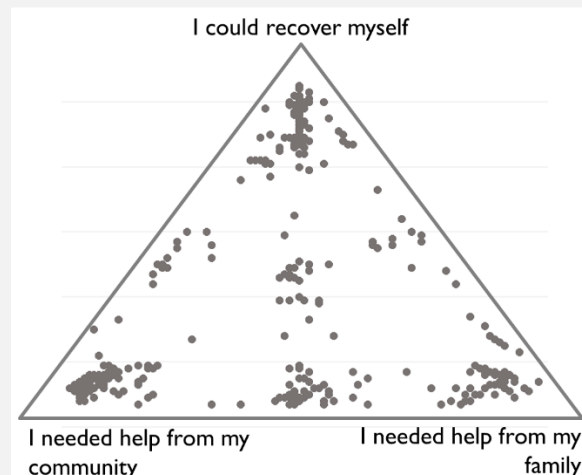
**49% of households have organizations that they can turn to for support**

Of the 49% who have people to turn, the majority depend on government.



## SIOMA COMPARED TO THE OKAVANGO RIVER BASIN

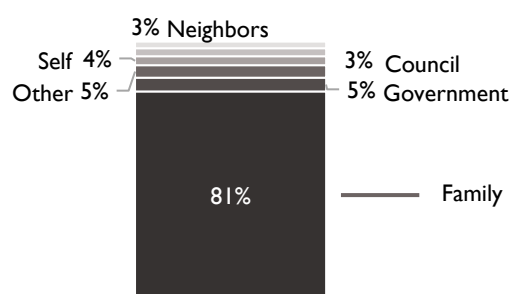
As in Sioma, households in the Okavango River Basin can draw on themselves, their community or their family to recover from shocks.



## SUPPORT AND PLANNING FOR SHOCKS AND STRESSORS IN THE OKAVANGO BASIN

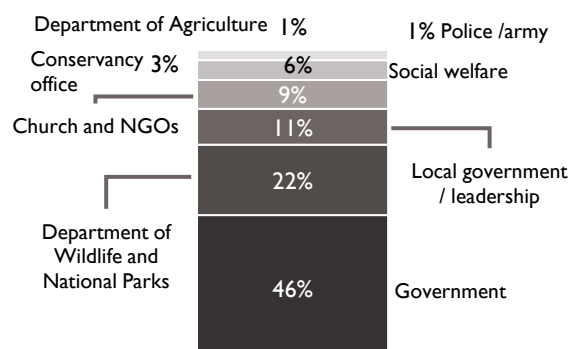
**48% of households in the Okavango River Basin have people that they can turn to for support.**

A greater proportion of households in the Okavango River Basin have someone to turn to compared to Sioma. Of those in the basin who do have people to turn to, the vast majority (81%) turn to family – consistent with Sioma.



**54% of households in the Okavango River Basin have organizations that they can turn to for support**

Of the 54% who have organizations to turn to, the majority, as in Sioma, rely on government.



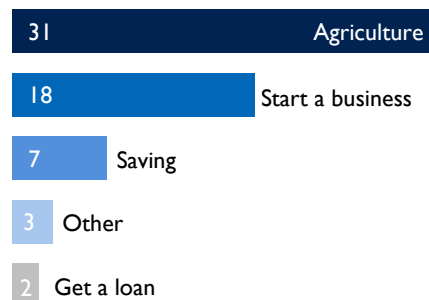
## PLANNING FOR THE FUTURE

Overall, households in Sioma felt **that more resources and to lesser extent more information would help them to respond better** to shocks and stressors in the future.

**What others in the community do was identified as the most influential factor for people's decision-making.** Therefore, there is a need to ensure that there is clear communication within the community to allow for collaborative actions.

**80%** of households in Sioma **have a plan** for future natural shocks and stressors. Of the 80% of households in Sioma that have a plan, many are related to agriculture, or the need for assistance. Examples of the plans that people reported include:

- **Agriculture:** Planting more crops, planting earlier in the season, pivoting to more climate appropriate crops, expanding stock and starting vegetable gardens.
- **Starting a business:** This would require money and materials to help them.
- **Saving:** Save funds during 'good' years.
- **Other:** Variety of initiatives which ranged from saving charcoal to buying maize as a food alternative when yields are poor.
- **Accessing loans:** Reverting to government representatives or others for financial support.



### Number of people

**A lack of resources and support prevents people in Sioma from implementing their plans.**

## HOW COULD SIOMA BECOME MORE RESILIENT?

Our research has found that communities that are resilient to natural shocks and stressors can 1. Protect themselves from events and adjust their way of living after an event has happened; 2. Make a plan for other events; and 3. Change the way that they do things. More specifically:

**Communities that can protect themselves from events and adjust their way of living after an event have:**

- Strong communication channels

- Strong social networks
- Access to functional institutions

**Communities that can plan for other events that might happen have:**

- A plan for shocks and stressors

**Communities that can change the way they do things:**

- Manage ecosystems well
- Manage water systems well
- Adapt agricultural practices to climate change
- Adapt livelihoods strategies

Communities in Sioma felt that the lack of resources and lack of social support prevented them from making decisions in response to natural shocks and stressors. This weakens these communities' resilience given the harsh climate conditions and human-wildlife conflict.

Residents may benefit from some actions which have been developed understanding the context of the communities in the region, the climate conditions and initiative feasibility:

- **Adaptive farming:** given the increasing human-wildlife conflict and severe drought, many farming methods are unlikely to bring forth the same yields. As such, prioritising drought-resistant crops is of paramount importance, and ensuring that cattle strengthen, rather than deplete the farmland, through high intensity rotational grazing.
- **Collective seed purchasing:** a collaborative approach to purchasing seeds may provide additional opportunities for funding through government or non-profit organizations. Such an approach also allows for a wide variety of seeds to be shared between residents thus broadening the types of crops grown, and thus nutrients available from which all residents can benefit. This type of approach reduces individual risk thus increasing overall resilience of the community – particularly in Sioma where food security is threatened.

However, community adaptation actions cannot replace robust services, and institutional presence in Sioma is relatively weak. **Outreach** by key government departments and national organisations could be strengthened to make people more aware of the services that are available to them.

Based on the findings of our research, the effects of shocks and stressors were experienced in the form of reduced food and water, social support and income / resources. The initiatives highlighted above seek to enable the communities in Sioma to improve their preparation for future shocks, and to recover from these shocks quicker. This is enabled by creating primarily through adaptive farming methods and collective seed purchasing to minimize individual risk.

## OVERVIEW OF USAID'S RESILIENT WATERS PROGRAMME

USAID's Resilient Waters Programme aims to build **more resilient and water-secure communities** in the Okavango and Limpopo river basins. We have four goals:

- 1** To improve **transboundary water security and resource management** in the Okavango and Limpopo river basins
- 2** To increase **access to safe, sustainable drinking water and sanitation** services
- 3** To strengthen the **ability of communities and key institutions to adapt to change**, especially the impact of climate change
- 4** To conserve **biodiversity and ecosystems**

In order to do this we will build:



### RESILIENT INSTITUTIONS

- Institutions are central to managing resources and building resilience
- We are supporting institutions in building capacity to plan, building strong networks, enhancing an enabling environment and meeting their objectives.
- Institutional ownership is important for sustainability.



### ROBUST INFORMATION SYSTEMS

- To manage resources better and build resilience, we need information that is accessible and that can be used to make decisions.
- We are working on filling information gaps, synthesising information and integrating it into decision-making.



### INNOVATIVE PRACTICES

- We need to consider new ways to live to adapt to climate change. To this, we need to understand what these practices are and how we can use them.
- We will support the innovation and systems of dynamic adaptation.