FSDMo
INVESTINDO EM INCLUSÃO FINANCEIRA

fsd network

Mechanisms and Solutions to Address Poor Households' Climate Challenges

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About FSD Network

The FSD Network is an alliance of organisations or 'FSDs' that reduce poverty through financial sector development in sub-Saharan Africa. The Network believes that financial systems have the potential to play a major role in enabling inclusive growth and ensuring access to basic services while assuring a sustainable future for low-income people. Guided by the imperatives of the United Nations' Sustainable Development Goals (SDGs), the FSD Network seeks to mould sustainable financial systems, enabling them to work more inclusively across Africa. As part of this work, the Network has initiated the Gender programme to enable collaboration among FSD Network members to support the development of gender inclusive financial systems which promote gender equity. The Network is committed to ensuring not only that women have greater access to financial services, but that those services work for them in helping increase their incomes, access welfare services and economic opportunities, and increase agency in decision making both at home and in their communities and workplaces. The Gender Collaborative Programme is funded by the Bill and Melinda Gates Foundation.

FSD Moçambique

The Financial Sector Deepening Moçambique is a facility for financial sector development with a focus on expanding levels of inclusion. It direct investments and insights to address constraints in the financial market, helping the diversification of Mozambique's economy and bringing prosperity and economic resilience to Mozambique's people. At the core of its strategy, are women, youth and the rural low-income population, as well as small businesses.

Contents

Source of cover photos:
1. Damage house- Field Research of Present Study in Zambezia
2. Sample photo of Casa Real pilot houses in Beira after Cyclone Idaia, Gallery – Casa Real

Acronyms

AED	Annual Expected Damage
AFI	Alliance for Financial Inclusion
ATM	Automatic Teller Machine
CGAP	Consultative Group to Assist the Poor
COVID-19	Corona Virus - 2019
CSR	Corporate Social Responsibility
DFI	Development Finance Institution
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agricultural Organization
GBV	Gender-Based Violence
GCA	Global Center for Adaptation
GCF	Green Climate Fund
GDP	Gross Domestic Product
HA	Hectar
MMO	Mobile Money Operators
MZN	Mozambican Metical
NDC	Nationally Determined Contribution
NFW	Non-Financia Wealth
NGO	Non-Governmental Organizations
SUSTENTA	Ministry of Agriculture and Rural Development's National Agricultural Development Program
USD	United States Dollar

Executive Summary

The impacts of climate change are increasingly evident as people worldwide confront higher frequency and severity of water-related disasters, such as droughts, floods, tropical cyclones and storm surges, and heat-related disasters such as heat waves and wildfires. People are losing their homes and livelihoods in climate-related disasters or are forced to take the decision to leave their homes temporarily or permanently, due to climate-related threats to their physical security, food security or water security. Further, sudden onset climate events can cause health problems such as waterborne diseases[1] while slower events such as increasing temperatures and desertification can affect mental health, hunger, and malnutrition of affected populations[2].

Women are more vulnerable to the impacts of climate change and climate-related events. For example, more frequent deaths of women may be related to cultural norms (such as women not learning to swim or women not traveling on their own), as well as coping mechanisms (such as reduced calorie intake). Women also have less access to assets often used to cope with disasters such as land, savings accounts or knowledge of climate resilient cropping and agricultural practices and agency to implement these. As women more frequently work in informal economies, this also decreases access to employment-based insurances and pension which can help mitigate shocks.[3,4]

Climate change is therefore increasingly viewed as a threat to inclusive development, and research indicates that well-designed financial services (savings, credit, insurance, money transfers and new digital delivery channels) can help low-income populations strengthen their resilience to climate shocks[5].

Mozambique is among the mostly highly affected countries in the world in exposure to risks resulting from climate variability. In 2021, Mozambique was ranked the fifth most affected country in weather-related loss events by the Global Climate Risk Index. Over the past 30 years, climate shocks have been increasing in terms of frequency and severity. The most common shock is flooding, but other frequent shocks include storms (cyclones, high winds), drought and epidemics. Many households face numerous shocks within a short period of time. Over 5 million people have been affected in terms of loss, injury or death by climate shocks since 2016[6].

The present study spoke to 295 households in rural and urban areas in eight districts affected by climate shocks in the provinces of Sofala, Zambezia and Cabo Delgado. It found that climate shocks had a greater impact on households than any other type of political, financial, personal or business-related shocks. This was particularly true of women. Cyclones were cited more than 50% of the time as the most important climate shock. Households indicated that the trends in shocks were increasing over the past 10 years.

Climate shocks tend to bring other consequences to affected households including loss of assets and equipment, loss of crops, illness, injury and death. They also lose access to social services (health care, policing) while infrastructure such as roads and water is degraded. This situation tends to create secondary effects such as an increase in crime and gender-based violence (GBV), which make it more difficult for households to rebuild after the shocks. Interviewed households saw a spike in these types of shocks in 2019, following Cyclones Idai and Kenneth. Many, however, have not yet recovered because they have since suffered follow-on shocks such as drought, COVID-19, and more recent storms.

Most of the economic losses came in the form of housing. Many households have not been able to rebuild their houses since 2019. Some make use of the parts of their houses which remain habitable, while others have moved into rental housing. Of all segments, women headed households reported the highest relative monetary loss in terms of housing[7]. Loss of business income, business and agricultural assets, and crops were other commonly cited challenges. For most households, the number of hectares under cultivation is trending downwards, for crops traditionally cultivated by both men and women. The one place where households are showing some upward trends (though these have not returned to pre-cyclone levels) is regarding productive assets including agricultural equipment, tools, business premises and vehicles. This increase is likely due to the preference indicated by most study participants to invest first in rebuilding livelihoods and then use income to slowly rebuild their housing and other assets.

The general feeling is that support services from the government (such as health care and emergency support) are insufficient and trending downwards. Women and people with disabilities report relatively lower access to this service. This has increased the cost burden on some households, who need to use private pharmacies to acquire medicines where they are not available in health clinics. There is a (small) reference that religious organizations are becoming more important in some communities.

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[1] Water | Free Full-Text | Impact of Climate Change on Waterborne Diseases: Directions towards Sustainability (mdpi.com)
[2] Frontiers | The Impact of Climate Change on Mental Health: A Systematic Descriptive Review (frontiersin.org)
[3] Explainer: How gender inequality and climate change are interconnected | UN Women – Headquarters
[4] Climate change hurts women more than men – DW – 05/30/2022
[5] An Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique, FSDMoc, 2021
[6] See Table 5.
[7] See Tables 8 and 9.

Households use a variety of coping mechanisms during, when rebuilding, and in preparing for future climate shocks.

- At the time of the shock, the focus is on basic necessities - shelter, food, water and health care. For shelter, many study participants stayed with friends and family or in government shelters (such as schools.) About 50% of the groups said that some participants had access to food assistance from government or NGOs, though it was noted that the selection was not transparent. Others shared food with community members. Water and healthcare were serious problems and many people fell ill.
- In rebuilding, in addition to basic necessities, there is also a focus on reestablishing livelihoods (business, agriculture or other.) Houses are rebuilt slowly over time through income earned from business and/or materials gathered from the natural environment such as wood and sand. Women-headed households also have used the strategy of selling land to rebuild. Food, water and healthcare strategies do not change much, sometimes leading to hunger, illness and death. Many households indicated that they restarted their livelihoods by assessing what could be salvaged from their farms or businesses, and rebuilding from there. Others gathered materials from the natural environment which could be sold (e.g., wood for charcoal, sand, straw for roofing, wild greens) to restart. Farmers shared seeds within their community, and sometimes opened new fields from forests. Some coping strategies – such as robbery, early marriage and prostitution – appear to be having long-term effects on young people's ability to recover.
- As households look to become more resilient, there is more focus on paying attention to climate shock warnings and having a plan for what to do when they occur (e.g., preparing houses, leaving the danger zone.) Those households which are rebuilding their houses are making efforts to build more resilient homes, using sandbags or improved roofing. They also plan for secure places to store food. Some are digging wells to access clean water and preparing savings for healthcare. Farmers participate in agricultural development programs to access subsidized input or inputs on credit. For businesses, several groups used savings groups or xitiques to start to build their assets.

Financial services did play an important part in helping people survive and rebuild from the climate shocks that they have experienced. Participants noted an important increase over the past five years in the use of financial services – primarily mobile money and informal services, but also some opening of bank accounts. This was true of all age and gender segments.

Mobile money accounts were the most important services, enabling them to access savings, receive transfers from families and receive government or donor subsidies. Mobile accounts from banks were also cited in accessing savings. Informal savings groups ("xitiques" or more structure savings and loans groups) also permitted people to start to rebuild business and/or houses. Moneylenders were used rarely in urban areas to borrow for business. Also, some electronic vouchers permitted receipt of food assistance immediately following the shocks and agricultural inputs in the recovery phase. There is almost no borrowing from banks or microfinance institutions, and limited knowledge of insurance.

The focus groups revealed an important set of challenges faced by households for which creative solutions in financial services could help them adapt, including:

- Low-income populations – Many affected households are low income and geographically spread. Financial services need to be able to reach many people with small ticket sizes. Technology (mobile money and fintechs) is needed to reach them affordably.
- Pre-existing vulnerability - houses, equipment and assets are not resilient to climate shocks. Services that build resilience into physical assets, support innovative solutions that address this vulnerability, or support rebuilding are all required, and solutions need to be found to make them more affordable. This could include subsidies or linkages to carbon markets to help reduce costs.
- Multiple shocks – resilience means dealing with multiple shocks in succession.
- Gender – women prioritize housing, healthcare, security. Focus on creating a safe, resilient home and linkages to other services (for example programming addressing GBV) are important considerations in post-climate shock setting.
- Vulnerable groups – young women are particularly vulnerable to GBV, early marriage, prostitution, illness, leaving school. They may need subsidies in post-disaster settings, which could be distributed through mobile money or vouchers.
  Illness - households without housing, drinking water, and clean cooking are more vulnerable to illness.
- Addressing these issues in housing design can mitigate this vulnerability. Other considerations may include incorporating a social fund into savings groups methodologies to help members pay for unexpected healthcare costs.

Injury – disabilities can result from climate shocks.
- Coordination with associations for people with disabilities can ensure that this group is not left out of financial services after a crisis. Weather-indexed insurance products could consider covering injury.
- Pressure on the environment – environmental degradation results both from climate shocks and coping mechanisms (clearing forests, harvesting wood from mangroves, digging sand). A better understanding of the detrimental ways people use the natural environment to recover from climate shocks allows us to consider how financial services might alleviate this environmental stress. Climate funds may be a source of funds for financial service providers to offer financing to build resilience – both in terms of financial products, and in terms of reforestation, agroforestry projects supported by projects such as REDD+[8].
- Weak infrastructure – financial services alone may not help farmers overcome the loss of warehousing and destruction of roads. They also need help with market linkages to guarantee a quick sale of crops at harvest. Linking financial services to government and donor value chain development programs can help to address these needs.[9] Bundled services delivered through digital platforms could leverage mobile money outreach.
- Government/donor funds insufficient – active dialogue with insurance companies, banks could identify mechanisms for government funds to leverage the financial sector in order to make its money go further.
- Limited microfinance supply – traditional banks are lending to low-income communities and there are few microfinance institutions. Creative partnerships of banks, microfinance, mobile money, fintechs and NGOs will be required to offer credit to these populations.
- Climate shocks tend to drive out financing - insurance or other guarantee facilities are needed to keep banks and microfinance active and engaged in climate-affected markets. Understanding the opportunities is a key factor in this.
- Insurance not widely understood – insurance companies need support to build awareness and understanding of insurance by the wider population. Government could play a role in disseminating information through its local coordination platforms. Savings groups provide an important platform to build assets – they could be an important mechanism to link low-income populations to other financial services[10].

There are many lessons which can be learned from global experience designing and offering financial services for climate-affected communities. One important lesson is that financial institutions rarely act on their own. Governments and regulators need to assist in building an enabling environment and to support the attracting of climate finance to the country. Financial institutions often need to collaborate among themselves, with development projects or women's economic empowerment projects, and with the public sector, to offer affordable, adapted and timely financial services.

Emerging from a scan of lessons from other countries, the study presents some recommendations for financial products that could be considered in addressing the key challenges facing climate affected communities and strengthen existing coping mechanisms[11]. Women and men may be impacted differently by climate shocks with different financial and non-financial needs during the reconstruction period.

The recommendations below would need to be contextualized to local conditions and to men- and women-specific barriers and needs.
- Rent-to-own housing using climate-resilient materials. With creative linkages to clean cookstoves and/or renewable energy providers, costs could potentially be reduced through carbon credits. (high relevance, limited potential providers)
- Promotion of savings groups in all reconstruction efforts. Continued efforts to link groups to banks and mobile money, and inclusion of education on insurance and climate resilience in the methodology. (high relevance, likely providers available in market)
- Insurance against climate shocks for households. This could be offered standalone and/or bundled with credit, savings and transaction accounts. (medium relevance as demand would need to be built, likely providers available in market)
- Climate insurance for loan portfolio. This already exists but is not widely used, so an assessment to understand the challenges and make needed adjustments could keep lenders in the markets at the time when people most need them. (high relevance, likely providers available in market)
- Post-disaster enterprise loans. After a shock, households require small loan amounts on a large scale with favorable rates. This will require coordination among donors, DFIs and government (to help reduce costs and risks to lenders), microfinance institutions and banks, as well as fintechs and mobile money operators (MMOs) to help with identification and distribution. (high relevance, limited potential

[8] Reducing emissions from deforestation and forest degradation in developing countries plus additional forest-related activities that protect the climate, namely sustainable management of forests and the conservation and enhancement of forest carbon stocks – an initiative of the United Nations.
[9] Linkages of financial services into agricultural value chains represents are major challenge, and is the focus of multiple government, donor and private sector working groups and national and local levels. It is important to underline the climate shocks increase the challenge and the need for coordination, but are not the only cause.
[10] Similar to agriculture, there are different efforts promoted by the Fund to Support Economic Rehabilitation (FARE) and the German Cooperation. M-PESA and some commercial banks have indicated efforts to work on these linkages. Prioritizing this could be an important initiative.
[11] See Section 4.2.

providers.)
- Continued expansion of mobile money and diversification of its services. Mobile money could serve as a point of distribution of other proposed products, but also if cross-border transfers were facilitated, it could assist with international remittances after climate shocks. (high relevance, providers in market)
- Carbon credits. Building on work already being done, more deliberate efforts by the financial sector to understand and support access to carbon credits could help expand access. (mid relevance due to limited earning potential, nascent market of likely providers, need for greater inclusion of financial sector.)

For all of these interventions, there is an important need for a facilitator, and in some cases further research. This is presented in more detail in Section 5.

There are also a few related considerations, which are not retail financial services, but could potentially have an important impact on improving household coping mechanisms.

- Special subsidies for young women after natural disasters.
- Government insurance policy for climate affected households .
- Include financial sector and private sector in planning for disaster resilience and post-disaster recovery. Determine whether government funds could leverage financial or private sector investment or corporate social responsibility (CSR) resources to stretch further.
- Initiatives by the regulators to improve knowledge and understanding of climate finance among the financial sector, establish requirements or incentives to invest, support with risk mitigation through insurance or guarantees, ensure that environment and social risk management is designed to protect financial inclusion.

1 Context

Climate change refers to long-term shifts in temperatures and weather patterns. The impacts of these shifts are increasingly evident with higher frequency and severity of weather-related disasters, such as droughts, floods, tropical cyclones and storm surges, and heat-related disasters such as heat waves and wildfires. Today, such weather-related disasters occur nearly five times as frequently as in the 1970s.

These increasing disasters often translate into losses for affected communities.

Figure 1: Types of Losses from Weather-Related Disasters[12]

For households, these weather-related disasters (or "climate shocks") can result in loss of lives, houses and livelihoods or the need to move away from their homes. Given that the natural environment provides livelihoods to much of the world's population and half of the world's gross domestic product (GDP) depends on nature,[13] climate shocks are often highly disruptive to economic activities. Further, sudden onset climate events can cause health problems such as waterborne diseases[14] while slower events such as increasing temperatures and desertification can affect mental health, hunger, and malnutrition[15]. It is predicted that by 2030, an additional 100 million people will be pushed into poverty due to the effects of climate change[16].

Research shows that women are relatively more vulnerable to the impacts of climate change and climate-related events than men. For example, the higher frequency of deaths among women may be related to cultural norms (such as women not learning to swim or women not traveling on their own), as well as coping mechanisms (such as reduced calorie intake).

Source: ForAfrica. Cyclone Freddy uproots Maria's crops - ForAfrika

Women also have less access to those assets which are often used to cope with disasters such as land, savings accounts or knowledge of climate resilient cropping and agricultural practices, and agency to implement these. As women more frequently work in informal economies,

[12] Seizing the Moment: Targeting Transformative Disaster Risk Recovery. Asia Pacific Disaster Report 2023. United Nations: Bangkok, 2023, p 28
[13] Vanston, S. & Philipp, A. (2022). What biodiversity loss and COP15 mean for investors. https://www.msci.com/www/blog posts/what-biodiversity-loss-and/03659333489
[14] Water | Free Full-Text | Impact of Climate Change on Waterborne Diseases: Directions towards Sustainability (mdpi.com)
[15] Frontiers | The Impact of Climate Change on Mental Health: A Systematic Descriptive Review (frontiersin.org)
[16] Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 3

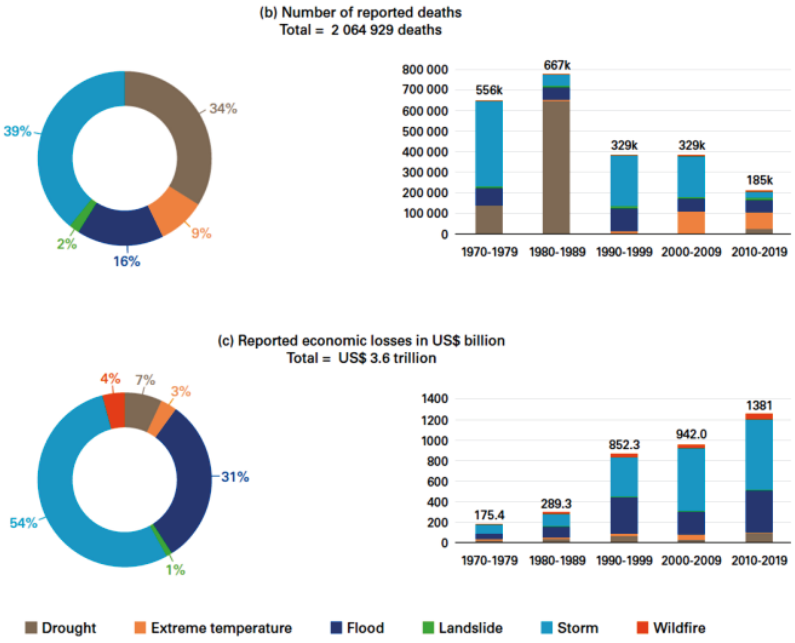
Source: Ayani, BV

this also decreases access to employment-based insurance and pensions which can help mitigate shocks[17,18].

Young people also face specific challenges in the event of climate shocks. For example, over the past 20 years more than 10 million people have been displaced in Africa by environmental degradation and desertification. For young people this can result in reduced educational opportunities and increased vulnerability to exploitation.

Children and young people are estimated to suffer more than 80% of the illnesses, injuries, and deaths attributable to climate change. Young women face specific vulnerabilities. For example, when families cannot support children to go to school, girls are more likely to stay home. Finally, climate shocks can lead to mental stress among young people, as they are still developing physically and psychologically[19].

Figure 2: Global death and economic losses from climate shocks (1970-2019)[20]



Globally, there have been improvements in early warning systems that permit households to prepare in advance for climate shocks.

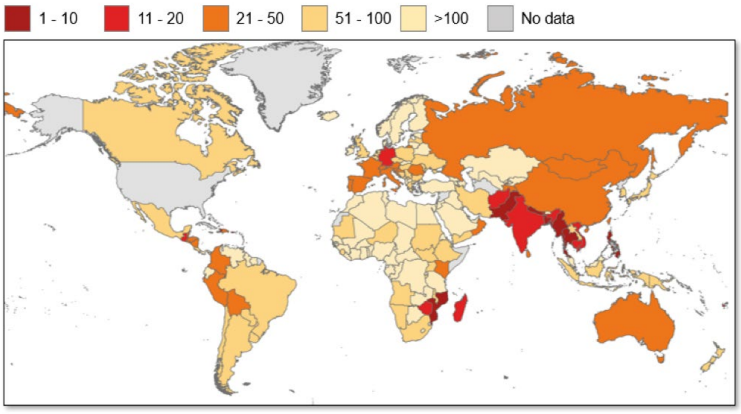
These have had an important impact on the reduction of deaths (which have fallen by 1/3 since the 1970s).

At the same time, however, the financial loss from climate shocks has risen seven times. [21]

Mozambique is among the most highly affected countries in the world in exposure to risks resulting from climate variability.

In 2021, Mozambique was ranked the fifth most affected country by weather-related loss events by the Global Climate Risk Index, considering events between 2000 and 2021.

Figure 3: Global Climate Risk Index Ranking 2021[22]



17 Explainer: How gender inequality and climate change are interconnected | UN Women – Headquarters
18 Climate change hurts women more than men – DW – 05/30/2022
19 Young People and Drivers and Barriers to Climate Adaptation Action, Global Center for Adaptation, 2021, p 11.
20 Climate Information and Early Warning Systems, Sectoral Guide Consultation v1, Green Climate Fund: 22 September, 2022. P 12.
21 Climate Information and Early Warning Systems, Sectoral Guide Consultation v1, Green Climate Fund: 22 September, 2022. P 12.
22 cri-2021_table_10_countries_most_affected_from_2000_to_2019.jpg (4267×2133) (germanwatch.org)

Losses are not only financial. The adjacent table shows losses in terms of non-financial wealth.

As can be seen, droughts are the most frequent disaster. They primarily affect the rural population who rely on rainfed agriculture for their livelihoods.

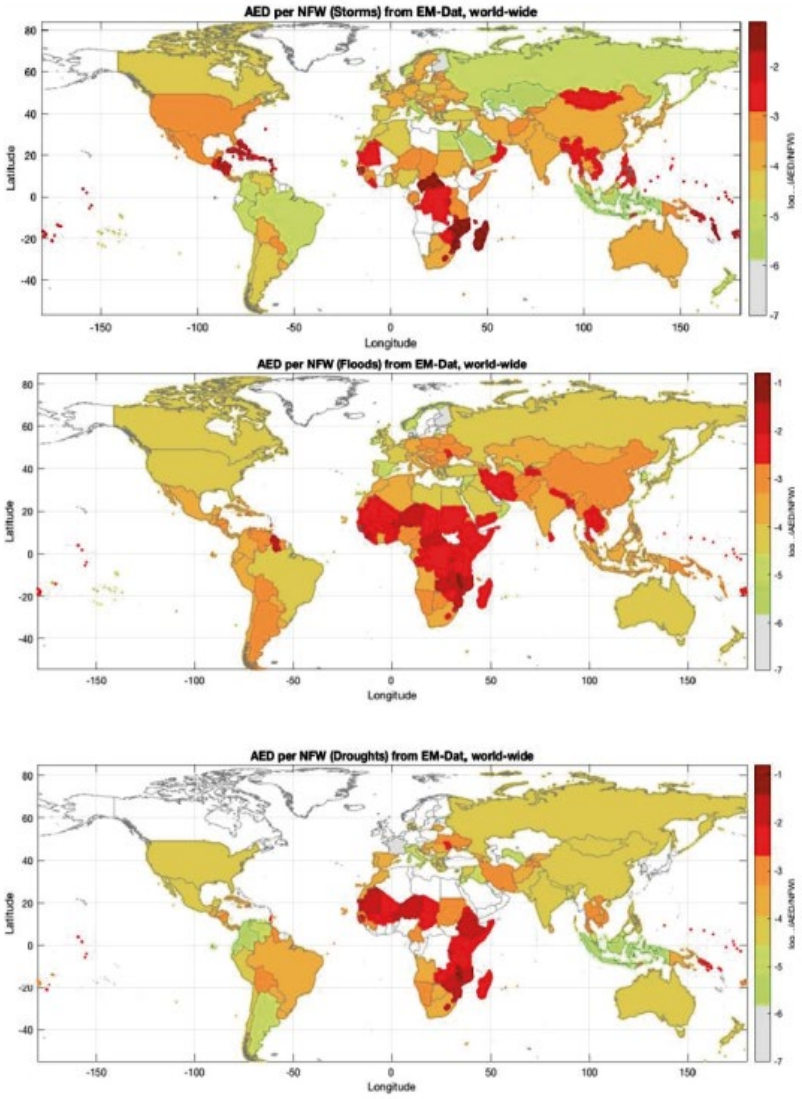
Storms, including cyclonic storm surges, however, cause the greatest damage.[23]

As Mozambique also lies at the end of numerous transnational river basins, flooding in its deltas is also a perennial threat.[24]

Despite this, Mozambique is not well prepared to handle the impacts of climate change. The risk of rainfed harvest loss exceeds 50% in most areas. Potential water resources to irrigate 3 million ha supply only 100,000 ha. Limited recording of land-use rights leaves tenure ambiguous, limiting people's ability to leverage land as an asset.[25,26]

One major challenge in Mozambique is that these climate shocks affect already vulnerable populations with limited resources to cope. Mozambique's poverty rate is approximately 64%.[27] In the aftermath of cyclones Idai and Kenneth in 2019, the World Bank's analysis noted that poverty is concentrated in rural areas, and the gap is widening between rural and urban areas. Challenges exist in access to

Figure 4: Annual Expected Damage (AED) for non-financial wealth (NFW) from storms, floods, droughts



electricity, food security and stunting. In this context, it found that the cyclones compounded an already serious food insecurity situation in Mozambique.

Cyclone Idai affected more than 1.5 million people. Cyclone Kenneth affected 250,000 people. Both events destroyed and damaged houses, businesses and core infrastructure.[28] Following Cyclone Idai's landfall, more than 715,000 hectares of crops were destroyed, while Cyclone Kenneth affected nearly 55,500 hectares of crops and caused loss of livelihoods, including fishing. Both cyclones made landfall during the critical harvest period, effectively wiping out the food of thousands of families. Both caused significant displacement and protection concerns. Many children, elderly and people with disabilities were unable to flee to safety, and more than half of the affected people were children. Health concerns included cholera and longer-term impacts of nutritional deficits for vulnerable populations. Further, population displacement and insecure living conditions exacerbated Gender Based Violence (GBV) in a country where 22% women reported facing GBV and rate of child marriage stood at 48% . Given that in Mozambique an estimated 70% of perpetrators of GBV against their partners never face charges, these factors add to further vulnerability for women. Homeless women and women-headed households are also particularly vulnerable to such assaults as crime increases in disaster-affected communities. About 300,000 people estimated to be living in informal settlements lacked proper infrastructure, sanitation, drainage, and basic services. [29]

23 Climate Information and Early Warning Systems, Sectoral Guide Consultation v1, Green Climate Fund: 22 September, 2022. P 13.
24 CIF Countries | Climate Investment Funds
25 documents1.worldbank.org/curated/en/690511544238091029/pdf/Mozambique-PAD-P164551-for-Board-11132018-636798168819424015.pdf;
26 World Bank Document
27 data-moz.pdf (worldbank.org)
28 Project Appraisal Document, Mozambique: Cyclone Idai & Kenneth Emergency Recovery and Resilience Project, World Bank, 2019, page 3.
29 Project Appraisal Document, Mozambique: Cyclone Idai & Kenneth Emergency Recovery and Resilience Project, World Bank, 2019, page 3 - 4

In its Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique. FSDMoç identified vulnerability to climate shocks and weak capacity to recover as the main threat to Mozambique's development. It notes that the increasingly frequent droughts, floods, and cyclones affect an already vulnerable population.[30]

Globally, it has been found that climate change can result in risks for households and private sector, which financial services can to some degree mitigate[31]. Examples include:

Table 1: Climate Risks and Mitigating Potential of Financial Services[32]

Type of Risk	Description		Financial Services to Mitigate	Rationale
Physical Risks	Direct economic impacts, such as loss of assets.	→	Savings Insurance	Create a buffer against cost increases and/or ability to replace lost asset or rebuild.
Transition Risks	Potential costs related to climate policy changes, and/or reduced value of certain assets	→	Credit	Can provide opportunity to invest in low-carbon technologies, energy efficieies, resilience housing, climate-friendly agriculture
Liability Risks	Related to need to compensate people for physical or transition losses- more relevant to businesses	→	Insurance	Can mitigate financial losses related to physical and transition risks.
Digital Financial Service Challenges can help permit the spread and use of these services, as well as humanitarian assistance after extreme weather events.				

To date, global, investments in disaster risk reduction and efforts to de-risk investments are not yet able to respond to growing need.[33] Both public and private sector actors have a role to play in helping the financial sector respond to these needs.

Mozambique is party to the Paris Agreement on climate change and the Global Deal for Nature. It has developed strategies and policies which indicate a recognition of the country's growing climate vulnerability. Some key components include considerations for how investments and financial services can help in realizing the strategy. Examples are presented in the following table.

30 An Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique, FSDMoc, 2021, p 17.
31 An Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique, FSDMoc, 2021
32 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 4-5
33 Seizing the Moment: Targeting Transformative Disaster Risk Recovery. Asia Pacific Disaster Report 2023. United Nations: Bangkok, 2023, p 28

Table 2: Examples of Strategic Areas for Financial Services in Addressing Climate Change in Mozambique[34]

Green Economic Roadmap - GER (2012)	Sets overall goals for sustainability, economic growth, equitable distribution of benefits of natural capital and the ecosystem, development opportunities leading to decent green jobs, restoration of the environment, clean technologies by 2030.
Green Economy Action Plan and Integrated Implementation Framework (2013)	To implement GER. It includes plans to develop sustainable infrastructure (energy, transport, water, irrigation, sanitation, human settlements, cities); efficient and sustainable use of natural resources (land, agriculture, forestry, tourism, conservation areas, fisheries, mineral resources); as well as to strengthen resilience and adaptability (disaster risk reduction, education, employment, health, WEE.) It envisages financial tools such as i) linkages between MFIs and small-scale commercial producers; ii) innovative climate-indexed micro-insurance product launched in partnership with local agricultural training institutions; and iii) tax incentives for mining companies to implement environmental and social safeguards.
National Development Strategy (2015-2035)	Creation of a development bank to serve the business sector with task of securing funds for green initiatives/activities + creation of sovereign fund from megaprojects and would help financing sustainable development projects.
National Climate Change Adaptation and Mitigation Strategy (2013-2025)	Establishes guidelines to increase resilience for communities and national economy, as well as move toward low-carbon development

In this context, FSDMoc launched a Roadmap for the Green Finance Ecosystem in Mozambique, which provides an understanding of the status and potential of "green finance" in the country. As one of the activities planned in the Roadmap, the present study on the poor households' mechanisms to address climate change challenges aims to inform FSPs and relevant players' decision-making processes during product design and implementation of green finance interventions. It researches the mechanisms and proposes solutions to address poor households' climate adaptation and resilience challenges faced by poor households in the selected areas of Sofala, Zambezia and Cabo Delgado.

[34] An Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique, FSDMoc, 2021, p 30.

2 Methodology

The study applied a mix of qualitative and quantitative approaches to gather and analyze data. Research was guided by a set of questions and information sources laid out in a research framework, presented in Annex 4. It primarily relied on four sources of information:

1. **Literature review** – considered global experiences as well as national data. It considered current knowledge of how households plan for and recover from natural disasters, emerging knowledge on how financial inclusion can mitigate the effects of climate shocks and emerging good practices. It further leveraged information available in Mozambique, national and global data and statistics showing trends in climate shocks. A bibliography is in Annex 1.

2. **Key informant interviews** – a total of 21 semi-structured interviews stakeholders working directly on climate finance or other related questions of climate resilience and/or environmental risk management for the financial sector deepened the understanding of information learned in the literature review. Key informants also included a sample of financial institutions to gather information on climate finance initiatives, products and the results to date. The list is in Annex 2.

3. **Focus Group Discussions** – used interactive discussion techniques, largely based on the MicroSave Tools, Time Series of Crisis and Time Series of Assets. Focus Groups Guides are presented in Annex 3. A total of 32 focus groups with 295 participants were held in 8 districts in Sofala, Zambezia and Cabo Delgado, selected due to their vulnerability to climate shocks. The profile of group participants is presented in the table below.

Table 3: Profile and Location of Focus Group Participants

District	Female HH Heads	Women aged > 35	Men aged > 35	Youth aged 18-35 Mixed	Youth aged 18-35 Women	People with impairment/ disability
Beira	X	X	X	X	X	X
Búzi	X	X	X	X	X	X
Dondo	X	X	X	X	X	X
Nhamatanda	X	X	X	X	X	X
Milange	X	X	X	X	X	X
Mocuba	X	X	X	X	X	X
Nicoadala	X	X	X	X	X	X
Pemba	X	X	X	X	X	X

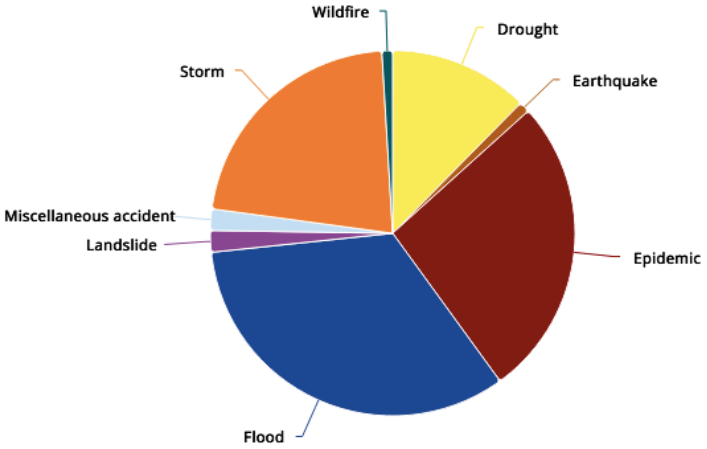
4. **Workshop** – A workshop was held on August 23, 2023 in Maputo to test the initial concepts emerging from the research. The workshop brought together representatives of the banking sector, microfinance institutions, mobile money platforms, government agencies and non-governmental organizations (NGOs), and donors which work on climate and gender issues. The initial findings of the field research were presented, and a discussion was held as to the feasibility of the proposed financial services. The feedback received was incorporated into the recommendations (Section 5.)

3 Findings

3.1 Trends in Climate Events Affecting Mozambican Households

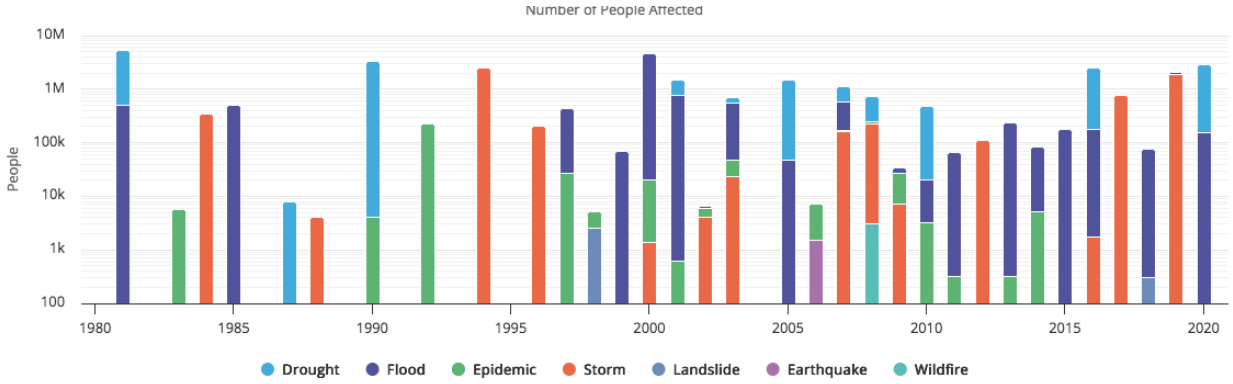
Mozambique faces different types of climate shocks. According to World Bank data, between 1980 and 2020, floods were the most common type of shock followed by epidemics and storms.

Figure 5: Types of Climate Shocks in Mozambique (1980-2020)[35]



The data shows that during that period, the frequency of shocks continually increased. Between 2015 and 2020, out of a population of 32 million[36], climate shocks affected over one million people per year in three out of the five years.

Figure 6: Trends in Climate Shocks in Mozambique[37]

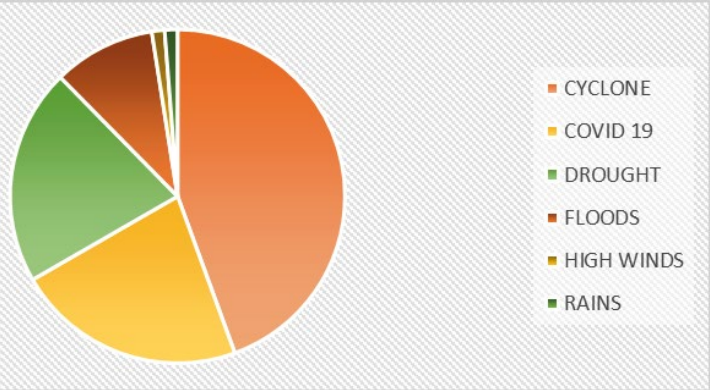


Since 2020, the number of climate shocks has not reduced. For example, there were a number of storms which hit the country (Chalane, Eloise, Guambe, Ana, Dumalo, Freddy), several locations which suffered from droughts or floods, and the COVID-19 pandemic.

In terms of regions, the Southern Provinces - in particular Gaza and Inhambane – frequently suffer from droughts while Maputo Province has suffered from multiple floods due to heavy rains. The provinces and the Center and Northern regions also experience droughts (to a lesser extent) and floods, but the coastal regions have become increasingly vulnerable to cyclones and other storms.

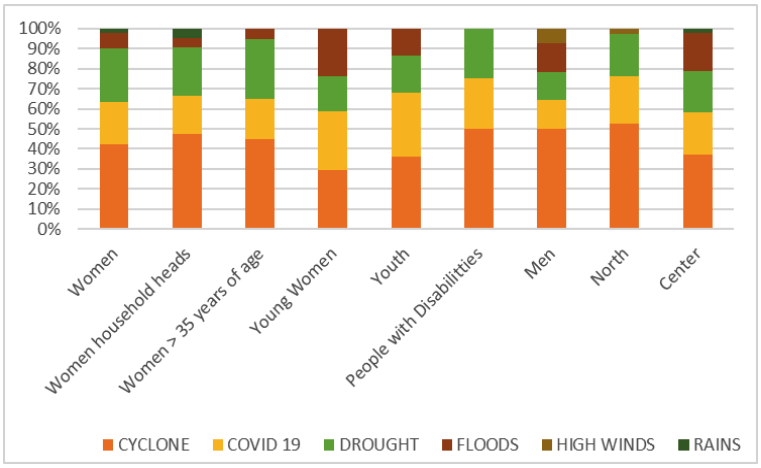
35 Mozambique - Vulnerability | Climate Change Knowledge Portal (worldbank.org)
36 World Bank data, 2022: Mozambique | Data (worldbank.org)
37 Mozambique - Vulnerability | Climate Change Knowledge Portal (worldbank.org)

Figure 7: Relative Importance of Different Shocks Affecting Participating Communities



The households who participated in the focus groups confirmed that they are experiencing a multitude of different climate shocks. In these communities, cyclones were cited most often, followed by the COVID-19 epidemic and droughts. Other shocks (floods, rains and high winds unrelated to cyclones) were also identified. While this differs from the national-level data in terms of relative importance of different types of shocks, it should be noted that all of these communities are located in areas affected by at least one cyclone over the past five years.

Figure 8: Relative Importance of Shocks by Segment



Groups from the North placed relatively higher focus on cyclones than the center, likely because the cyclones are more recent (Ana, Freddy.) Youth were the only segment who did not like cyclones as the most important shock, and tended to focus more on COVID-19 than other groups, as they found the economic shocks and time missed in school to be harder to recover. Other shocks are specific to the community.

Participants also indicate an increased number of shocks. Shocks were weighted on a scale of 0 to 5, with 5 being the greatest. As can be seen from the graph, drought is viewed as a steadily increasing problem. Cyclones are viewed as having the highest impact, and a trend which has been occurring with more regularity over the past five years. COVID was a specific event, which for many of the affected communities immediately followed a cyclone.

Figure 8: Focus Groups Assessment of Importance of Climate Shocks over 10 years

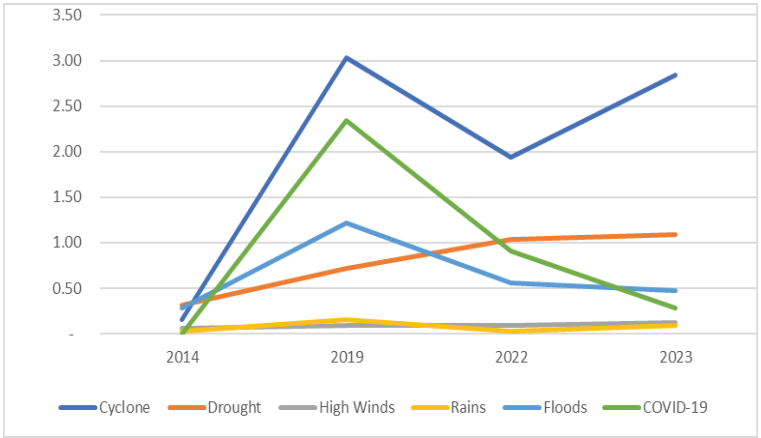
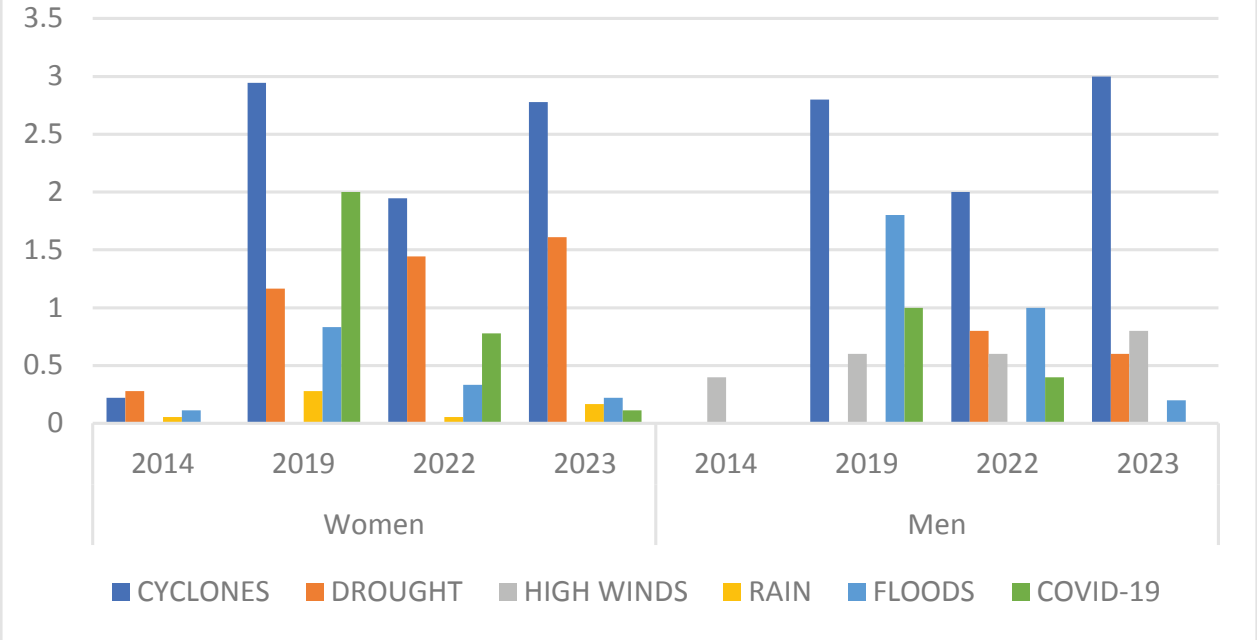
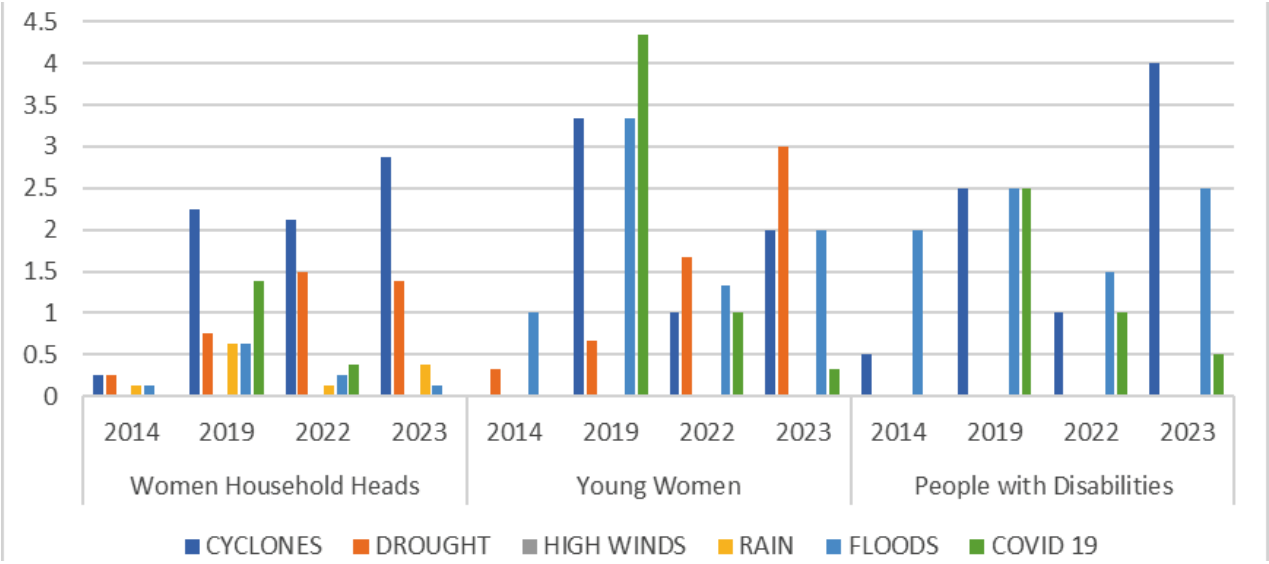


Figure 9: Climate Trends by Gender



Both women and men cite cyclones as the type of climate shock which has had the greatest impact on their households. The importance of this shock coincides with the timing of the cyclones but is perceived to be higher than it was 10 years ago. Women felt a relatively higher impact of drought, which appears to be increasing over time. They tended to emphasize the subsistence nature of agricultural practices and the fact that drought often follows other shocks, increasing hunger. Men cited floods more frequently, especially in areas prone to flooding after infrastructure damage caused by cyclone Idai, as they struggled to travel to markets due to flooded roads, but this appears to be decreasing over time as infrastructure is repaired. High winds were only cited by men in the north, in which they noted damage to houses and falling trees.

Figure 10: Climate Trends among Vulnerable Groups



Cyclone trends also emerged as dominant and trending upward for women household and people with disabilities. Young women also cited cyclones as important, but focused more on the second and third shocks that hit their households and making it harder to recover.

In addition to cyclones, women household heads also cited droughts as increasing hunger after cyclones and COVID 19 as decreasing non-agricultural incomes. They referred to government restrictions on mobility and informal businesses as having a major impact on their ability to earn non-agricultural income.

Young women expressed a relatively greater impact of all shocks- but especially the second and third shocks (droughts, COVID, flooding due to damaged infrastructure) which affected their communities. They also highlighted that droughts and COVID exacerbated the conditions of sickness and hunger following the cyclones.

People with disabilities focused on difficulties in cyclones, floods and COVID. For cyclones and floods they noted that they rarely received any support, and often felt passed over "as if they were not there." In the North, fishing communities were affected by crocodile attaches and illnesses which resulted in their disabilities following floods. Like other groups COVID was highlighted as exacerbating previous shocks due to inability to earn income.

3.2 Impact of Climate Events on Mozambican Households

Climate shocks impact the country in a number of ways. According to Mozambique's Nationally Determined Contribution (NDC), the "following sectors and/or areas are considered vulnerable to the impacts of climate change: water resources; agriculture, fisheries, food security and nutrition; social protection; health; biodiversity; forests; and infrastructure, urban areas, other settlements and tourist and coastal zones." [38]

It should be noted that which sectors are most affected differs from year to year depending on the type of climate shock. For example, in 2020, the most affected sectors were hotel and restaurant services (-35.8%), extractive industries (-25.6%), trade (-5.7%), manufacturing (-5.3%), transport and communications (-4.7%), primarily due to COVID-19, but also drought in some areas as cyclones in others.[39]

Source: The Guardian. Drought and rising temperatures 'leaves 36m people across Africa facing hunger' | Drought | The Guardian

Given the importance of agriculture, which employes approximately 70% of the population,[40] climate impacts on agriculture are of particular importance to the country. According to the most recent update of the NDC, of 5.65 million ha of arable land[41], in 2020-1, a total of 370,382 ha was affected by natural disasters of which 89,411 ha were completely lost. This impacted over 300,000 families.[42] An additional 198 families lost equipment, buildings and animals.

Coastal communities reported losses of boats and other fishing equipment. Affected infrastructure in the same year included water systems, electrical grid and related infrastructure, aqueducts and schools.

38 NDC_EN_Final.pdf (unfccc.int), p 14.
39 NDC_EN_Final.pdf (unfccc.int), p 12.
40 Employment in agriculture (% of total employment) (modeled ILO estimate) - Mozambique | Data (worldbank.org)
41 Mozambique - Arable Land (hectares) - 2023 Data 2024 Forecast 1961-2020 Historical (tradingeconomics.com)
42 Balanço da Implementação da Contribuição Nacionalmente Determinada de Moçambique 2020 – 2021 - MTA

Table 4: Losses in the Year 2020-2021[43]

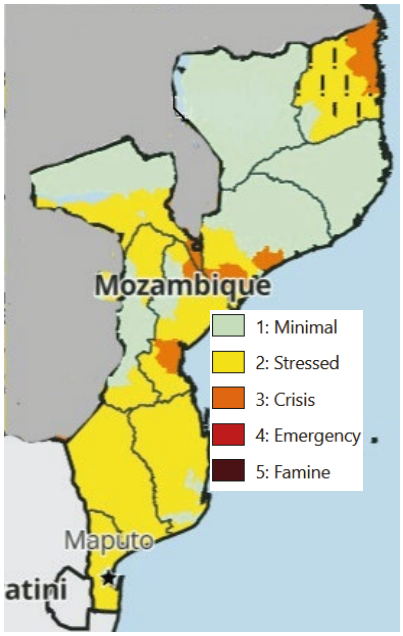
	Affected[44]	Lost
Agriculture	370,382 ha	89,411 ha
Animals		8,143
Water source		319
Water supply system		11
Boats		57
Other fishing infrastructure		168
Electrical grid		587 km
Electrical poles		6,133
Transformers	6	
Aqueducts		155
Bridges		15
Drainage ditches		34
Schools	1,200	

The NDC also tracks losses in terms of housing and other important community infrastructures such as locations of worship and health units. As can be seen, over the past six years, the number of houses impacted exceeds 500,000.

Table 4: Trends in Housing and Community Buildings[45]

Rainy Season	Partially Destroyed Houses	Totally Destroyed Houses	Flooded Houses	Worship Locations Destroyed	Health Units Destroyed
2016-17	83,500	43,781	89,078	28	108
2017-18	14.461	7,313	9,099	44	18
2018-19	153,274	146,482	30,125	1,114	138
2019-20	11,864	6,221	44,809	89	8
2020-21	61,047	37,816	37,420	0	0
2021-22	28,748	14,270	18,712	388	34
Total	254,947	212,102	140,165	1635	198

Figure 12: Food Insecurity Classification (June 2023)[46]



These impacts on livelihoods, infrastructure and housing have a direct impact on the food security of households.

Since FewsNet started to post data on Mozambique in 2016, there have been some pockets of food insecurity in the country every year.

As of June 2023, the adjacent map shows areas of food insecurity as minimal, stressed or crisis in different geographies.

By October 2022, several parts of the Southern Provinces were facing drought. This was compounded by Cyclone Freddy, which hit the Southern and Central provinces in March 2023, displacing 184,000 people, destroying 129,000 homes, and leaving more than 640,000 people homeless, Maputo Province also experienced heavy rains and flooding[47]. (Other causes of food insecurity are related to conflict in the North.)

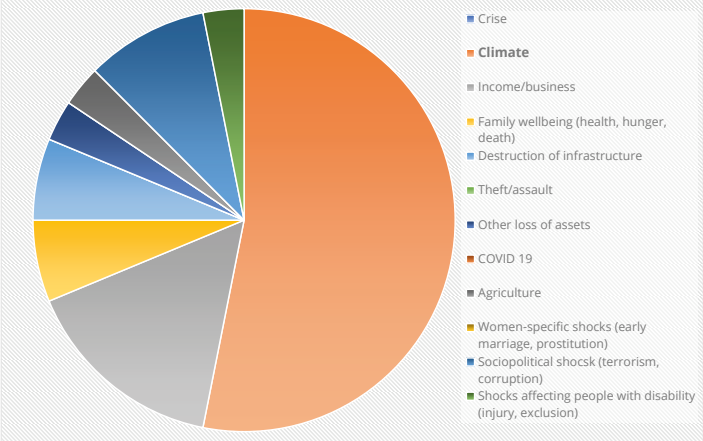
While the data from 2023, the data from the previous six years demonstrates that climate is a regular detrimental impact on Mozambican Households, having impacted over 1 million households during that period.

43 It is difficult to find year-on-year data with regards to losses, but the National Direction for Climate Change within the Ministry of Land and Environment was able to provide an update on the NDC as of 2021. This gives us the sense of the magnitude of losses in a given year.
44 Affected = partial loss (agriculture), partial damage (equipment, buildings)
45 NDC_EN_Final.pdf (unfccc.int)
46 Mozambique | FEWS NET
47 Mozambique: Mid-year 2023 Food Security Cluster Bulletin (July 2023) - Mozambique | ReliefWeb

Table 6: Trends in Population Affected by Climate Shocks

Rainy Season	People Affected	Households Affected	Injuries	Deaths
2016-17	83,500	43,781	89,078	28
2017-18	14.461	7,313	9,099	44
2018-19	153,274	146,482	30,125	1,114
2019-20	11,864	6,221	44,809	89
2020-21	61,047	37,816	37,420	0
2021-22	28,748	14,270	18,712	388
Total	254,947	212,102	140,165	1635

Figure 13: Types of Household Shocks



The households who participated in the study indicated cited climate shocks more frequently than any other type of shock affecting their household.

The adjacent figure shows that more than half of the shocks indicated by the participants were climate related.

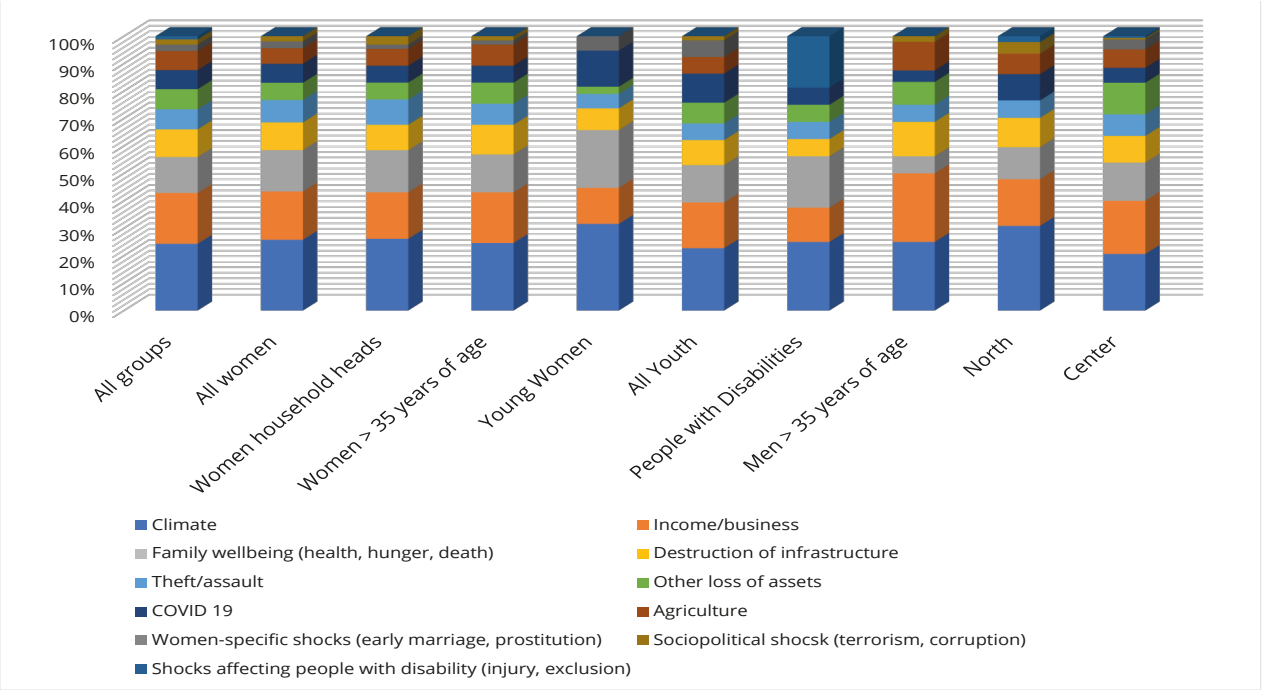
Not only are climate shocks the most commonly cited type of shock which affects the participating households, but they are also viewed as having the greatest impact on the households.

The adjacent figure shows the responses of the different focus groups (32 in total) in terms of which type of shock had the greatest affect on the household's wellbeing. More than 50% of the groups cited climate shocks. Figure 14: Most impactful type of household shock

Almost all groups interviewed cited shocks related to climate, income/business and household wellbeing (health, hunger, death) more frequently than other types of shocks. For most groups, these three types of shocks represented 50% and 60% of the shocks identified as having a major impact on household wellbeing. The following figure presents the responses from the different segments.

Figure 14: Most impactful type of household shock

Figure 15: Types of Household Shocks by Segment



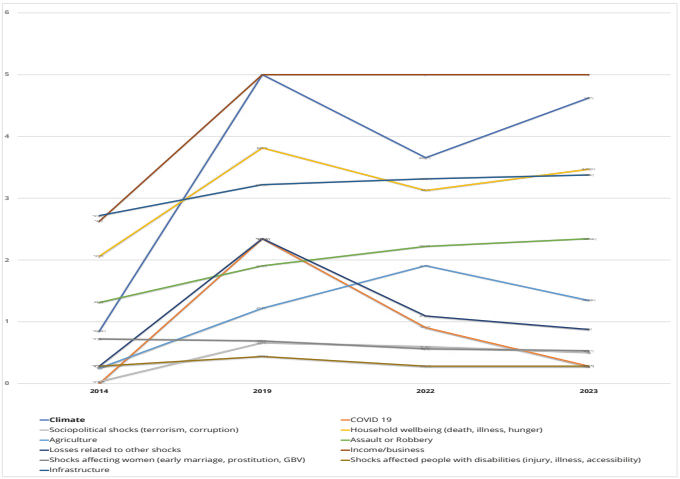
There is a lot of similarity in the types of shocks faced by different segments. Women – including women household heads - tend to identify climate with the greatest frequency, followed by income/business shocks. Men (circled in grey) cite climate shocks with similar frequency to women but place greater emphasis on income/business-related shocks.

The most vulnerable groups - young women (green circle) and people with disabilities (yellow circle), place greater emphasis on COVID-19 than other segments. They found it more difficult to recover from this shock as it exacerbated economic challenges from previous cyclones and droughts. Young women did not cite shocks related to agriculture, but other shocks such as early marriage and prostitution. People with disabilities referred to injuries which caused their disabilities (e.g., crocodile attacks during floods in the North) as well as a higher degree of difficulty in accessing to assistance after climate shocks.

Theft affects women-headed households and people with disabilities relatively more than other groups. Theft is often accompanied by violence and, for women, can include sexual assault. Violence is typically related to household or business break-ins for men. For women, it also extends to assaults while in transit, resulting in less willingness to travel for business or after dark. In the resettlement area after cyclone Idai in Dondo, GBV is reported as a known problem.

Participants from the Northern Provinces of Zambezia and Cabo Delgado cited climate with greater frequency than in central province of Sofala (blue circle). This may in part reflect the more recent cyclones experienced in these areas (Freddy and Ana).

Figure 16: Trends in Impact of Shocks



Participants were asked to rate the intensity of the shocks on a scale of 0 to 5, with 5 being the shock which had the greatest impact on household wellbeing.

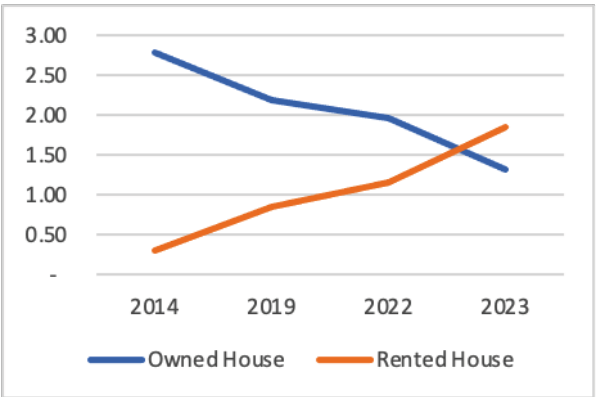
As can be seen from the chart above, in 2014, households were already struggling with challenges related in income/business, agriculture and other issues related to household wellbeing (hunger, health, death), which were scored on average between 2 and 3. Some communities were suffering from political instability or insecurity.

In 2019, at the time of Cyclones Idai and Kenneth, climate introduced a major shock (with an average score of 5 for that year). The events caused a variety of other household-level shocks, which also saw sharp increases from 2014, indicated by the increase in every category of household shock that year. It should be noted that the COVID-19 pandemic followed in 2020, so it was often

associated with the same period during group discussions.

Over the past five years, there has been some reduction in the impact of shocks related to COVID, loss of assets and to some degree agriculture, but all other areas have recovered to the level of before these cyclones. It should be noted that "economic shock" continues to remain at a level 5 since the time of the cyclone, indicating clearly that many households have not been able to recover their livelihoods since the climate shocks in 2019. Throughout the entire 10-year period, pressures related to crime (robbery, assault and gender-based violence) as well as weakening infrastructure (both physical and social services) have steadily increased on households.

Figure 17: Trends in Housing

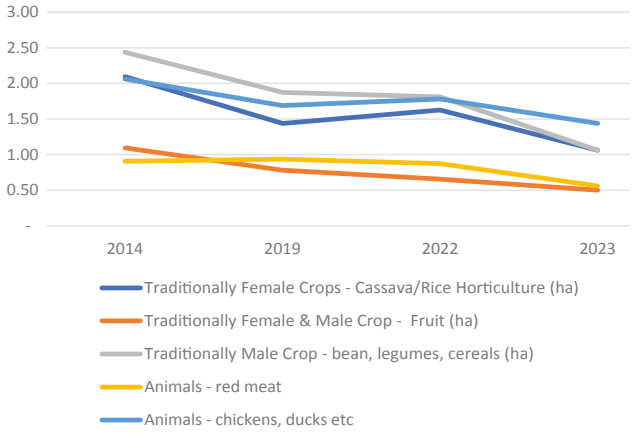


Prior to the 2019 cyclones, communities reported that the average number of bedrooms in a house was approximately 3. Most lived in homes that they owned. During the cyclones, some rooms were destroyed and others degraded, becoming unusable over time, as they were not able to finalize repairs. As such, the trends in owned housing have consistently declined such that those people who own their own homes on average have closer to one bedroom.

By comparison, rental housing is increasingly viewed as a permanent solution. At first, affected households tended to rent small locations (single rooms or one-bedroom homes) which they assumed were temporary, but over time, they are moving to larger rental houses, indicating a longer-term shift from ownership.

Participants reported a relatively steady downward trend in both the area under cultivation and farm animals. Crops which are traditionally dominated by men (beans, legumes and cereal) have continually decreased in land under cultivation. Female dominated crops (cassava, rice, horticulture) did appear to make some improvements, but were affected again in 2023 by cyclone Freddy and some drought conditions. Farm animals have shown similar trends.

Figure 18: Trends in Agriculture

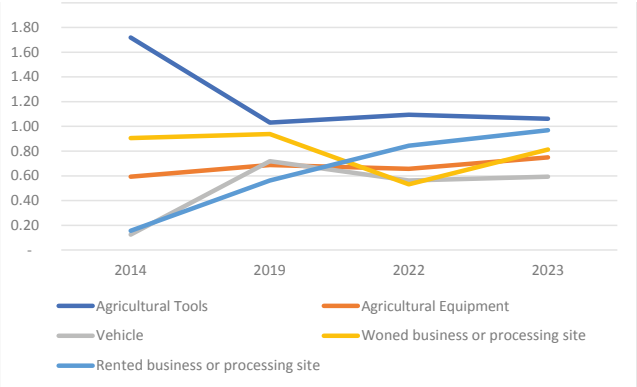


Young women in particular indicated having more difficult in recovering both lost animals and agricultural production, likely due to lower access to resources.

Some of the specific challenges related to the recovery of agriculture include:

- Youth spoke about decreased soil fertility. The loss of agricultural equipment makes it difficult to cultivate many crops, but horticulture is possible. They have experienced a mouse infestation (in Mocuba) which affected production. Roads damaged in storms have not been fixed, making market access more difficult.
- Men indicated that high winds – becoming almost annual- has resulted in the destruction of crops and trees.
- Women indicate that many are subsistence farmers with limited resources and have difficulty overcoming the losses. They also noted droughts which followed cyclones, destroying the little that they were able to plant or save.

Figure 19: Trends in Productive Assets

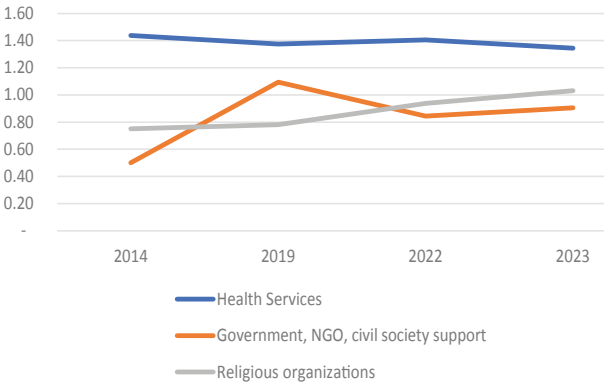


Most productive assets experienced a decrease in 2019 with cyclones Idai and Kenneth and took some time to start recuperating. By 2023, a slight upward trend in ownership of agricultural equipment and tools as well as

owned business premises can be seen. Some business owners moved to rentals, sparking an upward trend in rented business sites. Vehicles increased over the past 10 years, as the cost declined, but have not returned to pre-cyclone levels..

Women and people with disabilities have a harder time recovering the loss of commercial assets than men.

Figure 20: Trends in Support Services

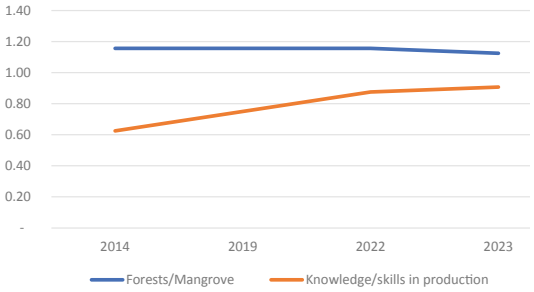


Participants generally viewed the availability of support services as low (averaging less than 1.5 on a scale of 5). They have not seen distinctively downward trends, but their absence was felt more after climate shocks, when injuries due to shocks or aftermath (such as mudslides after cyclone Freddy) and diseases such as cholera, malaria and others - resulting from contaminated water and lack of food - resulted in a higher demand on an already struggling healthcare system. Access to medicines in public pharmacies is seen as declining.

Women headed households and people with disabilities reported relatively lower access to needed health services than other groups. Several groups of women have reported difficulty in affording hospital births, as women choose to have babies at home, but this has resulted in increased maternal deaths. As a result, those who can afford to are seeking medicine at private pharmacies, and those who cannot have lost family members to illness.

Some households did receive support after major shocks (such as cyclones) and some youth indicated receiving social support during COVID, but most did not receive access and there were reports of unfairness or lack of transparency in distribution in some services (such as food aid) after cyclones. All groups note a downward trend in support from governments and NGOs since the 2019 cyclones, but women household heads and people with disabilities noted this sooner, indicating a relatively lower access to such resources. The importance of religious groups in supporting households facing major shocks has not traditionally been viewed as very high but is showing a steady increase over time.

Figure 21: Trends in other Resources

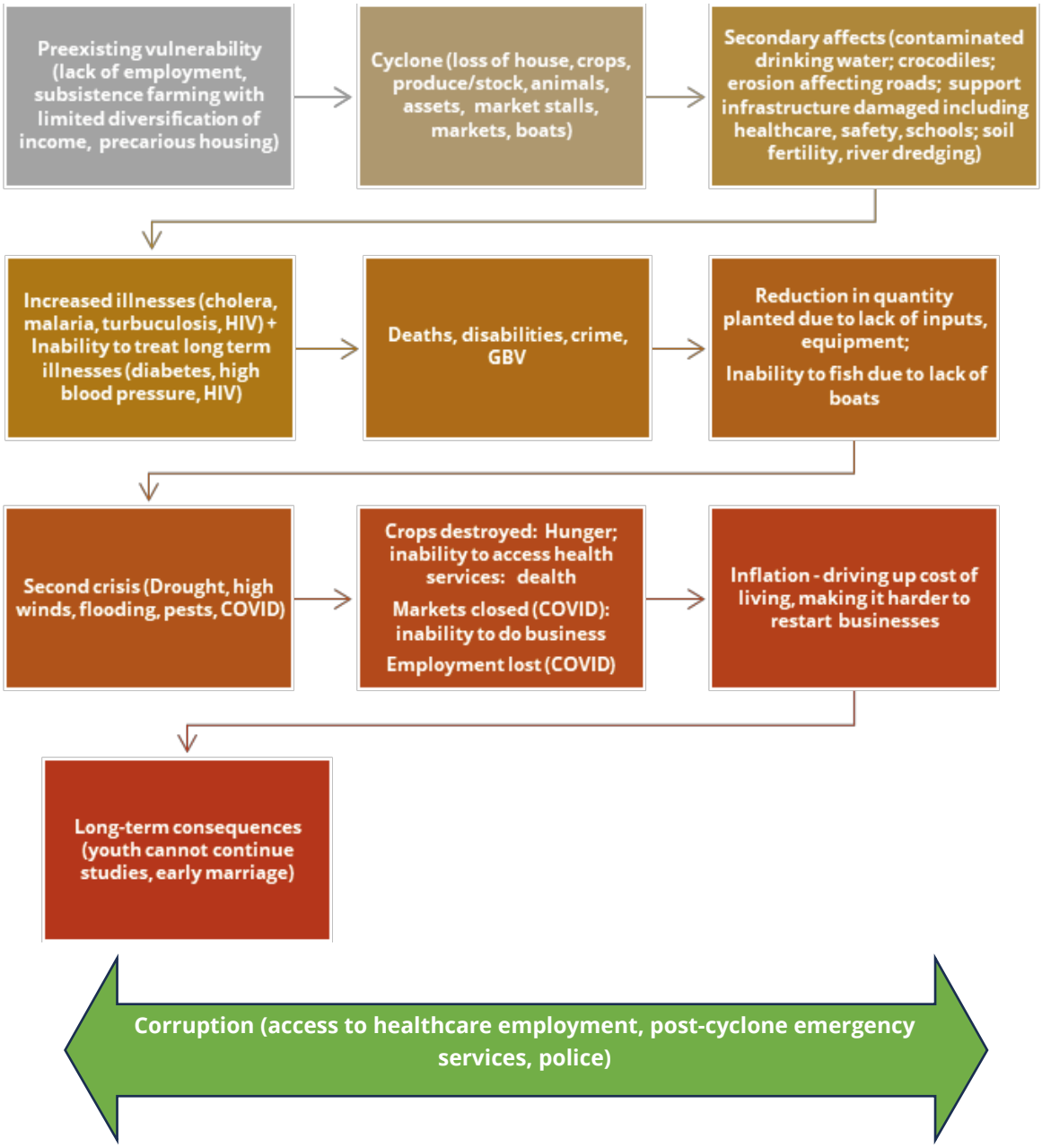


Households indicate that they rely on their own knowledge and skills- in business or agriculture – to assist in their recovery. In fact, for most the main focus in rebuilding after disasters was re-establishing livelihoods. The local forests and mangroves provide an important resource, but which is being negatively impacted as natural disasters result in increased pressure (described further in Section 3.4.) Figure 21: Trends in other Resources

The overall picture in terms of assets is one of loss from which many households have not been able to recover. There is an effort to restart, as seen in improvements in productive assets, but households face continued shocks. Many groups spoke about "stress on top of stress" resulting in hunger, illness and death. Women and youth spoke more frequently about hunger, but it was an underlying theme in particular in rural areas. Increasing security concerns make it hard to rebuilt, as those who are able to start to accumulate an asset base are often the victims of theft and assault.

The following map summarizes trends frequently emerging from the focus group discussions. It shows why it has been so challenging for many households to rebuild their asset base almost five years after the major cyclones of Idai and Kenneth.

Figure 22: Summary of Repeated Shocks Reported by Participating Households Over the Past Five Years



"Cyclone Idai was the beginning of all the problems in our community"

Group of men, Sofala

Households do not view external sources of support- including public health services – as sufficient to support them in their needs, placing the burden of recovery primarily on the households themselves. The recurrence of shocks makes it very hard for households to return to pre-cyclone levels of wealth and wellbeing.

Participants attempted to estimate the losses that they suffered in the wake of natural disasters. All groups used the losses incurred during the cyclones as their point of reference for this discussion. The table below shows the results during this discussion. While there was a wide range of estimates, there are some notable trends:

- The most valuable asset lost is the house
- Business stock and assets were also significant losses
- Monthly income ranges between 5 and 10% of the loss of housing assets
- Public healthcare, and in particular medicines, is increasingly seen as insufficient, and families sometimes need to seek private clinics or pharmacies for their health needs.

Table 7: Estimated Household Losses

MZN	High	Low	Average	Median
Losses				
Business stock	200,000	1,000	26,786	4,500
Business assets	500,000	2,500	57,926	18,000
House	850,000	10,000	200,679	100,000
Agriculture	25,000	2,000	15,500	17,500
Other assets	600,000	2,000	44,370	14,000
Income				
Monthly income	85,000	500	16,188	9,375
Unusual expenses				
Health	15,000	500	3,520	2,000

There were substantial differences in the amounts estimated be different segments of the population and regionally. The table below shows the averages by segments in the Central province of Sofala. Men tended to estimate their business losses higher than other groups and women tended to estimate the value of their losses in housing as higher. Women household heads and People with Disabilities estimated relatively high loss of housing, which may be a result of lack of knowledge of the value or – in some cases – that the loss was higher and was also associated with injury or death of a spouse.

Table 8: Average losses and income by Segment – Center

	Women	Women HH Heads	Youth	Men	People w Disabilities	Urban	Rural	All
Losses								
Business stock	33,625	5,333	83,333	50,000	200,000	42,750	33,375	50,750
Business assets	28,714	14,000	57,500	100,000	500,000	91,333	16,000	87,818
House	331,250	400,000	150,000	325,000	600,000	290,909	81,818	341,667
Agriculture	25,000							25,000
Other assets	20,600	20,500	9,500	41,000	-	12,083	4,583	25,000
Income								
Monthly income	17,000	16,333	10,000	63,500		10,900	13,000	26,556
Unusual expenses								
Health	1,300	1,000	1,500	3,000	15,000	1,750	357	3,278

In the Northern provinces of Zambezia and Cabo Delgado, the average income and estimated losses were substantially lower than the central provinces. The trends were similar in that men estimated relatively greater business losses, women greater losses in housing assets, and women household heads estimated the greatest losses in term of housing loss. People with disabilities in the North had the lowest estimates in all categories, which is aligned with the overall discussions in these groups, indicating deeper levels of poverty. Notably, young people and women household heads show a very large gap between income and losses, indicating a greater difficulty in recovering without support.

Table 9: Average losses and income by Segment- North

	Women	Women HH Heads	Youth	Men	People w Disabilities	Urban	Rural	All
Losses								
Business stock	4,944	1,375	7,500	31,667	1,500	14,500	5,625	8,813
Business assets	9,333	12,125	63,000	90,000	7,000	64,375	35,375	37,375
House	107,889	207,500	100,000	54,333	35,000	159,375	68,000	94,938
Agriculture	20000	NA	8500	NA	NA	4,375	2,125	12,333
Other assets	8,813	24,000	25,000	220,000	14,000	105,429	89,384	54,700
Income								
Monthly income	12,563	5,000	5,000	10,000	4,000	10,071	17,429	9,967
Unusual expenses								
Health	2,500	500	4,125	6,000	2,000	6,571	6,491	3,656

3.3 Coping Mechanisms

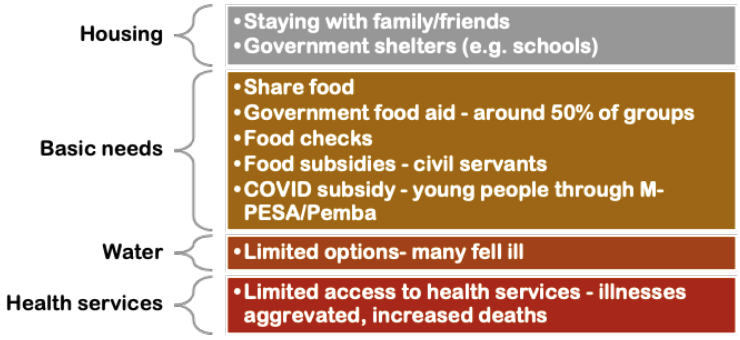
All groups report having had access to information about climate shocks prior to their occurrence. Radio and television were the most frequently cited sources of information. Youth also learned about impending shocks from social media. Community leaders and local authorities were also cited by women in both urban and rural areas, while rural women also sometimes learned from neighbors or other members of the community. Phone calls from associations were also identified as a source for people with disabilities and some urban women.

Unfortunately, for many households, knowledge did not translate into any preparations prior to the shocks. It appears that the information campaigns were able to get the information to populations in time, but the communications strategies were not sufficiently effective to convince the populations to prepare.

Given this, despite prior information, most households appear to be almost completely unprepared to ensure their physical security, health and assets. This section takes a look at how households coped during the events, what efforts they made to recuperate and what they are doing to prepare for future shocks.

> We learned about the crisis one week before, but no one prepared because we didn't believe it – Women, Pemba
>
> We knew about Cyclone Idai one week before but not everyone prepared themselves, though some were able to reinforce their houses. – Men, Beira
>
> Most of us found out about the crisis from the news on television, radio, neighbors and the local government, which carried out an awareness campaign to get people out of the risk zones. So, we had time to prepare, but not everyone took the warning seriously, and as a result most of us suffered. –Women, Nhamantanda,
>
> We heard about the Idai from the television and radio reports, but we didn't take the potential impact seriously, so we didn't take any precautions. Almost all of us were taken by surprise by the winds and waters of the Buzi River. – Youth, Buzi

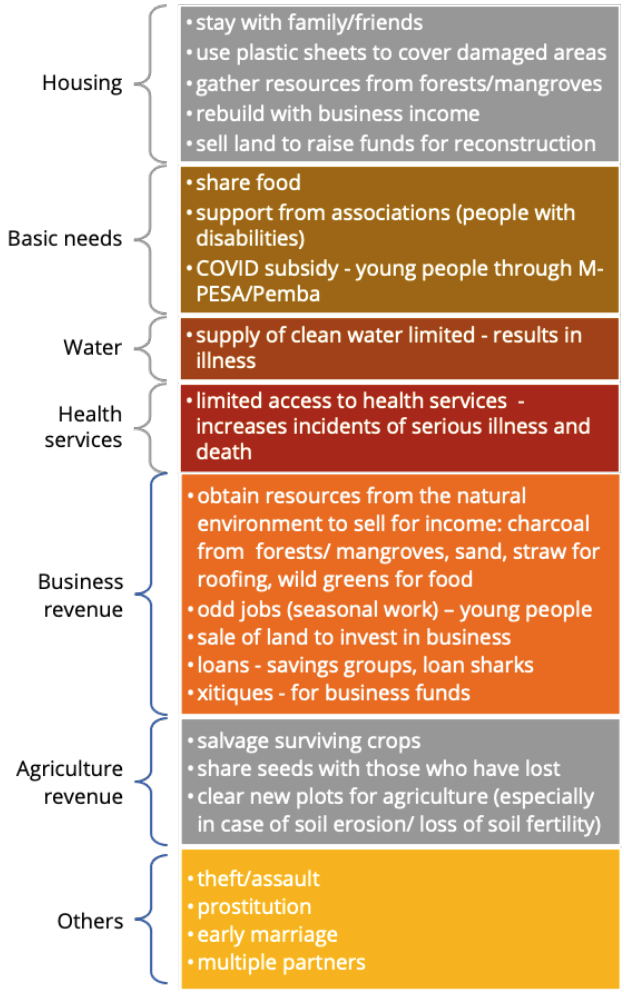
Figure 23: Surviving the Shock



At the time of the shock - most frequently cyclones - households found themselves without resilient houses. Most had to take shelter elsewhere. If they had family or friends with strong houses, they went to stay with them and others went to government shelters, with local schools most frequently cited.

About half of the focus groups indicated that some of their members were able to access food from government or NGOs during the cyclones, and others relied on friends and family for support. A limited number (mostly civil servants) indicated the availability of some food subsidy, while others were able to rely on other subsidies from development programs. They note that during the cyclones and in the aftermath, clean water was not available, as drinking water had been contaminated, and health services were unable to respond, resulting in widespread illness and some loss of life. It should be noted that more recent shocks have seen lower loss of life, in part because warnings were taken more seriously[48].

Figure 24: Recovering from Shocks



As households start to recover from shocks, housing is a major pressure point. Many families have lost their homes or need to repair damages before they are habitable. As such, they continue to stay with family and friends. This puts strain not only on the affected families, but also on the host households. For example, one participant in Pemba indicated that 58 people took refuge in the house after cyclone Kenneth, sharing food and clothing, and some of them remain in her house today.

Households start with temporary fixes which permit them to move back into their houses, such as plastic sheets to cover holes. They then slowly rebuild either financed through income over time and/or through seeking resources from the natural environment, such as wood from forests and mangroves, or sand.

One group of women headed households indicated that there was some practice of selling land to finance rebuilding, though this appears to be limited.

[48] Information on reduced loss of life is from new reports at the time of Cyclone Freddy and not directly from group discussions.

Food remained scarce for many households, and the word "hunger" emerged in the discussions of many participants. Primarily women's groups referred to supporting other households in the community with food. Youth often relied on their family, and there was some limited continued food aid. In both the Center and North, people with disabilities indicated that some begged for food or money, while others received support from associations for people with disabilities.

Water and healthcare continue to plague populations, resulting in diseases during rebuilding stages.

Women, men, and women household heads all referred to the use of the natural environment to help them restart a business after loss of assets. Examples included production of charcoal from forests and mangroves, selling of sand, straw for roofing and wild greens for food. These items were sold either in local communities or neighboring towns to earn income and start to rebuild businesses. Other strategies, particularly among youth, included finding odd jobs. The use of "xitiques" (rotating savings groups) to build up sufficient assets to restart businesses was another strategy used by men, women and youth, and some groups (men and women) mentioned borrowing from savings groups or local moneylenders ("agiotas".)

For farmers, the immediate strategy was to ascertain to what extent some of their existing crops or seeds could be salvaged. Those who were able to salvage seeds shared them with others. There was a movement to short-term crops which required less equipment due to losses (for example horticulture). In semi-urban areas, some men opted to start agriculture to gain some income and cleared plots for this purpose.

Following the shocks, many communities reported an upswing in crime, indicating that at least some members of the community have opted for theft as a way of recovering from the losses. Most groups referred to "youth" as the main perpetrators of theft and assault. Young women indicated some practice of relying on boyfriends or partners- in some cases multiple partners – for necessities, others turned to prostitution. Young women's groups also indicated that early marriage was one strategy that some households used to earn a dowry.

Source: Ayani, BV

Figure 25: Planning for Resilience

Beyond rebuilding, many participants indicated a change in some habits to prepare for future shocks. The most important is a change in attitude toward future climate warnings. Most participants reported regularly monitoring warnings and, when received, preparing their houses (examples include use of sandbags or reinforcing roofs). Some move to safer locations as soon as they receive warnings.

In terms of housing, some households have made the decision to move to areas considered less vulnerable to fast on-set shocks like hurricanes and floods. Most report trying to find ways to make their houses more resilient, such as through the use of sandbags or reinforced roofing or new designs which raise the house above the group to minimize impacts of flooding. One group of young women in Mocuba, Zambezia said that they mobilized resources for rebuilding through xitiques.

Another aspect is the building of a safe (secure, dry) structure to store food[49].

Clean drinking water is an often-cited challenge, with few identified solutions, especially in urban areas. One group of women in Mocuba noted that they are digging wells on their properties.

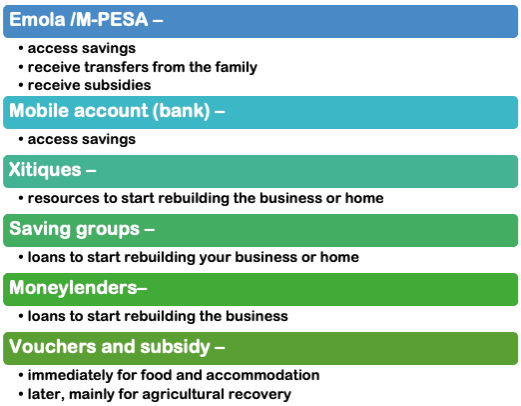
[49] No details are available as to what type of structures were used, and this could be an interesting question for further exploration.

For agriculture, farmers rely on existing agricultural development projects to assist in replacing seeds and inputs. Specific projects mentioned included FAO's e-vouchers, subsidizing inputs and the Ministry of Agriculture's SUSTENTA Program, offering inputs on credit. Both projects seek to supply higher quality seeds and inputs. SUSTENTA goes further in promoting agroforestry. As such, these projects should theoretically increase farmers' resilience. Other strategies which may support some households financially, but overall have a negative effect on the communities' capacities to rebuild include crime – in the form of theft – early marriage of young girls to gain a dowry for the family and various forms of sexual relationships to provide financial stability, most commonly cited among young women.

Financial services are most commonly used for the purpose of rebuilding business stock and assets. Mobile money platforms were the most frequently used services during the shocks and in rebuilding. They permit not only access to savings, but also the ability for families and friends to transfer funds to affected households, as well as donor and government subsidies. Mobile bank accounts also facilitated access to savings.

Xitiques were cited by all segments (women, men, youth, people with disabilities); whereas savings groups (with internal loan facilities, often promoted by NGOs and donors) were not a service used by young people or people with disabilities, though men and women cited them with approximately the same frequency.

Figure 26: Use of Financial Services as a Coping Mechanism



There are a variety of programs to support households affected by climate shocks. They range from post-disaster grant projects, which focus on rebuilding infrastructure (schools, roads, health centers) as well emergency support (shelter, food aid.) Largely these projects are welcomed by the communities, though many participants were not able to access food aid, and there is a general feeling that reconstruction of key infrastructure is taking too long.

Some donor projects seek to target the key aspect of resilient housing. The largest of these is funded by the World Bank, with resources to rebuild 15,000 houses after Cyclones Idai and Kenneth (compared to about 300,000 totally or partially destroyed in 2018/2019.) Others tend to be smaller (several hundred houses), and focused on the most vulnerable populations, such as female headed households and people with disabilities. While these projects may result in good models for building cost efficient, resilient houses, they are not at the scale required to deal with the shocks. Similarly, grants to support micro, small and medium entrepreneurs tend to be small in scale (targeting less than 1,000) which do not respond adequately the need for many poor households to restart their businesses as quickly as possible. Donor funded projects tend not to work with the financial sector, meaning that their funding is provided in the form of grants, and not used as leverage to encourage lending or other forms of investment.

3.4 How Financial Services are Used by Climate-Affected Households

The table below presents the financial services identified as being used by the members of the focus groups[50],

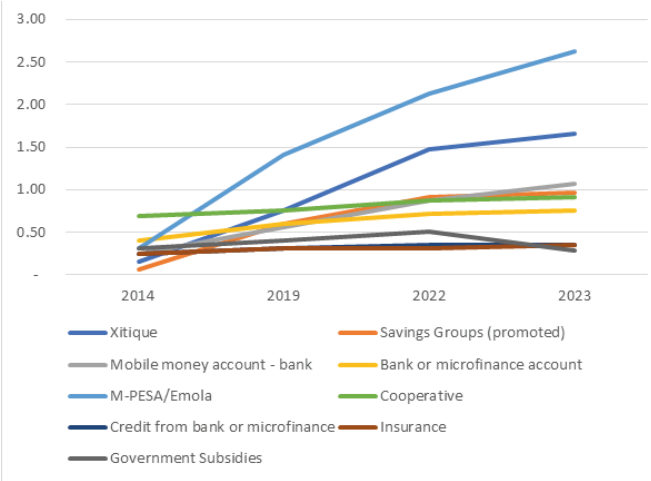
[50] Given that interviews were not individual, it is not possible to ascertain the percentage of people who used each of these services, but rather the relative importance for the different segments.

Table 10: Use of Financial Services by Segment

	All[51]	People with disability	Men	Women	Youth
No of groups	32	2	6	19	8
eMola	29	2	6	15	8
M-PESA	28	2	6	15	7
Xitique	11	1	2	6	7
Saving group	5		1	4	
Banks	9	1	2	3	2
Mobile account (bank)	7		2	2	3
Microfinance Operators	3	1	1	1	1

The usage of the focus group participants largely mirrors available data on financial inclusion, with the majority of participants using MMO services, a smaller number using bank accounts, and very few accessing formal sector credit. Insurance services do not seem to be well known or understood, although there are some products for small farmers. It is possible to see, however, the importance of informal services, with more than 1/3 of the groups referencing use of xitiques or savings groups.

Figure 31: Trends in Use of Financial Services



The participants have demonstrated an increase in usage of MMO which mirrors the overall growth in supply. Aside from this, informal services (xitiques and to a lesser degree savings groups promoted by NGOs) have also seen an expansion which started before the 2019 cyclones but has expanded rapidly since that time.

Others show minimal change in use over the past 10 years.

Focus group participants indicated the type of financial services which they felt would most assist them in planning for and responding to future shocks. They focus on savings for household needs, loans for businesses and subsidies for agriculture.

Figure 32: Financial Services Recommended by Households

[51] Note that groups of young women are considered in both the "women" and "youth" segments, so the total of the segments does not add up to the "All" column.

4 A Role for Financial Services as a Mechanism to Support Climate- Affected Households

4.1 Supply of Financial Services in Mozambique

According to the regulatory authorities, Mozambique's financial sector is composed of banks, mobile money providers, insurance companies, microfinance providers and others as presented in the table across.

The commercial banks dominate the sector representing almost all sector assets. Within the banking sector, there is also a high degree of concentration, with the five largest banks holding over 75% of the sector's assets.

The larger banks tend to be universal banks, offering credit, savings, and transaction products (among others) to different segments of the market. There was a substantial increase in bank accounts as a percent of the adult population from 2005, when banks reached less than 10% of the adult population to 2015, when they reached almost 40%. Since that time, however, they have experienced a downward trend, reaching closer to 30% by the first quarter of 2023.

Table XX: Financial Institutions in Mozambique[52]

Type of Financial institution	Number
Commercial banks	15
Mobile Money operators	3
Insurance providers	15
Microfinance service providers	
Microbanks	12
Credit Cooperatives	4
Savings and Loan Organizations	13
Investment Society	1
Microcredit operators	2,074

Table XX: Concentration in banking sector[53]

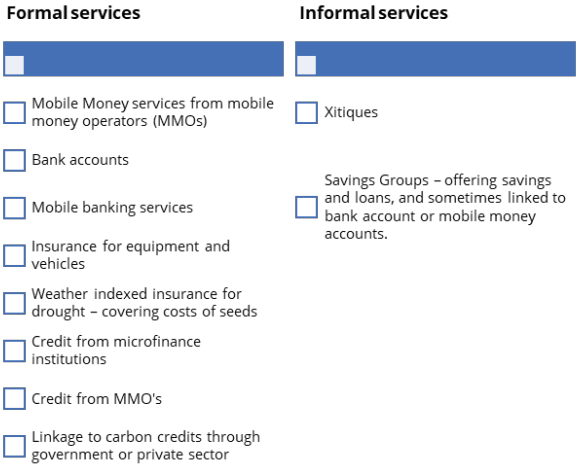
	Billion MZN (12/22)	Five largest	Three largest
Assets	856.2	77.74%	64.45%
Deposits	465.3	82.04%	68.01%
Credit	241.0	72.63%	54.23%

This tendency is representative of the tendency of the banking sector to work in more formal markets – including public sector, formal private sector, and their employees. This is particularly true in terms of credit, where informal actors have very limited access.

Other types of financial institutions, however, are starting to make inroads and developing products specifically targeting low-income communities including informal businesses and to a lesser degree smallholder farmers. The greatest growth has come from Mobile Money operators (MMOs), which exploded over the past decade, and now offer accounts to over 80% of the adult population. The increase of these actors is

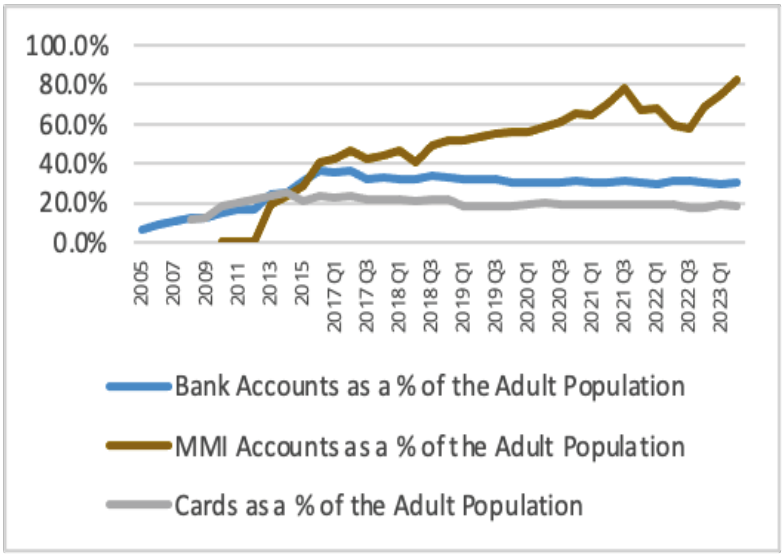
The financial services available to low-income households in Mozambique are summarized in the adjacent figure.

Figure: 27: Available Financial Services[54]



52 Bancomoc.mz; Insurance Companies – Insurance Supervision Institute of Mozambique (issm.gov.mz)
53 Financial Stability Report, June 2023, Bank of Mozambique, p 25.
54 In Mozambique, many moneylenders (individual who provide loans to informal market at high interest rates) are registered with the Bank of Mozambique as microfinance institutions, and thus are assumed to be included in that category.

Figure 28: Trends in Bank and MMO Acounts



The supply of transaction and savings services is steadily increasing, driven primarily by MMOs, but there has also been an increase in bank points of service (though agents, ATM's, branches) as well as in terms of services offered. For example, clients can pay for a diverse array of services through mobile accounts with MMOs and banks.

Since MMO accounts are the main driver of growth in outreach, it is a good indicator as to how inclusion is growing by gender. Data is available for the past three years, in which is it possible to see that the growth trends of use by men and women are similar, but that a gap remains

Figure 29: Trends in MMO Accounts by Gender[55]

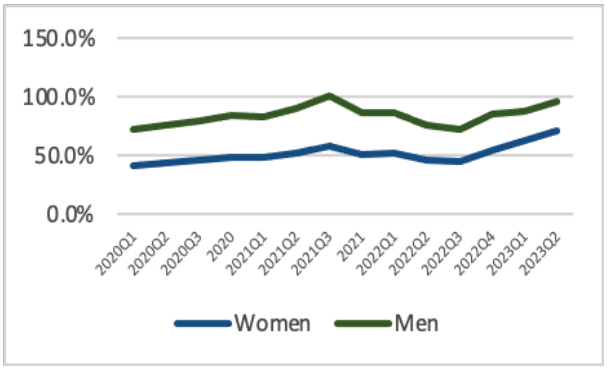
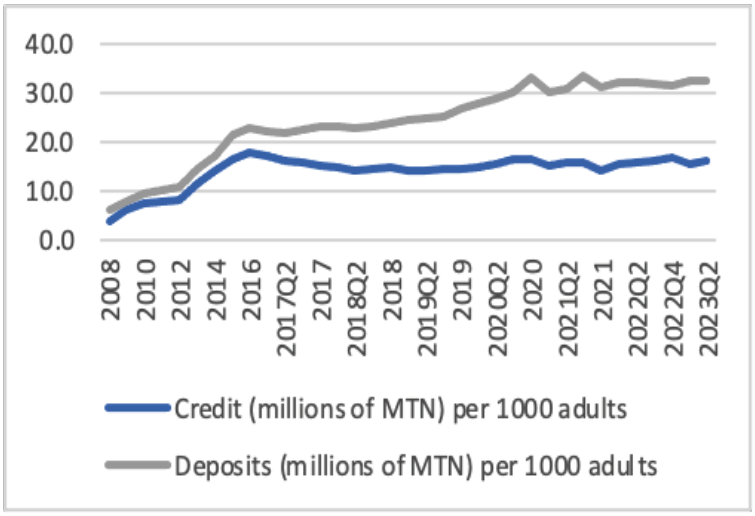


Figure 30: Trends in Credit and Deposits



Access to credit overall has lagged behind other services, as can be seen in the adjacent figure which compares trends in deposits over the past five years with trends in credit. Both financial institutions and populations indicate that credit services to low-income households are limited. In June 2023, 45% of total credit was concentrated in the miscellaneous and personal (typically salary-backed) loan segments.[56] Digital credit, though small amounts, has shown promise, with a digital credit product offered jointly by an MMO, bank and fintech surpassed 500,000 loans in 2022.[57]

[55] The question of trends by urban and rural was assessed, but available data is inconsistent and thus was not presented in this report. Urban coverage is higher than rural, though both show quickly growing trends.
[56] Financial Stability Report, June 2023, Bank of Mozambique, p 41.
[57] Project Appraisal Document: ACCESS TO FINANCE & ECONOMIC OPPORTUNITIES PROJECT – MAIS OPORTUNIDADES: World Bank, March 9, 2023, page

One of the reasons for this low access to credit is the small size of the microfinance sector. Despite the apparent large number of institutions, the reality is that the large majority are small, local, individually owned entities which operate much like traditional money lenders. A recent World Bank document estimated the microfinance sector served 88,000 clients with US$13.7 million in loans and US$5.2 million in savings in December 2021. It is difficult to determine how much of these reaches low-income households, and in particular those in the informal sector.

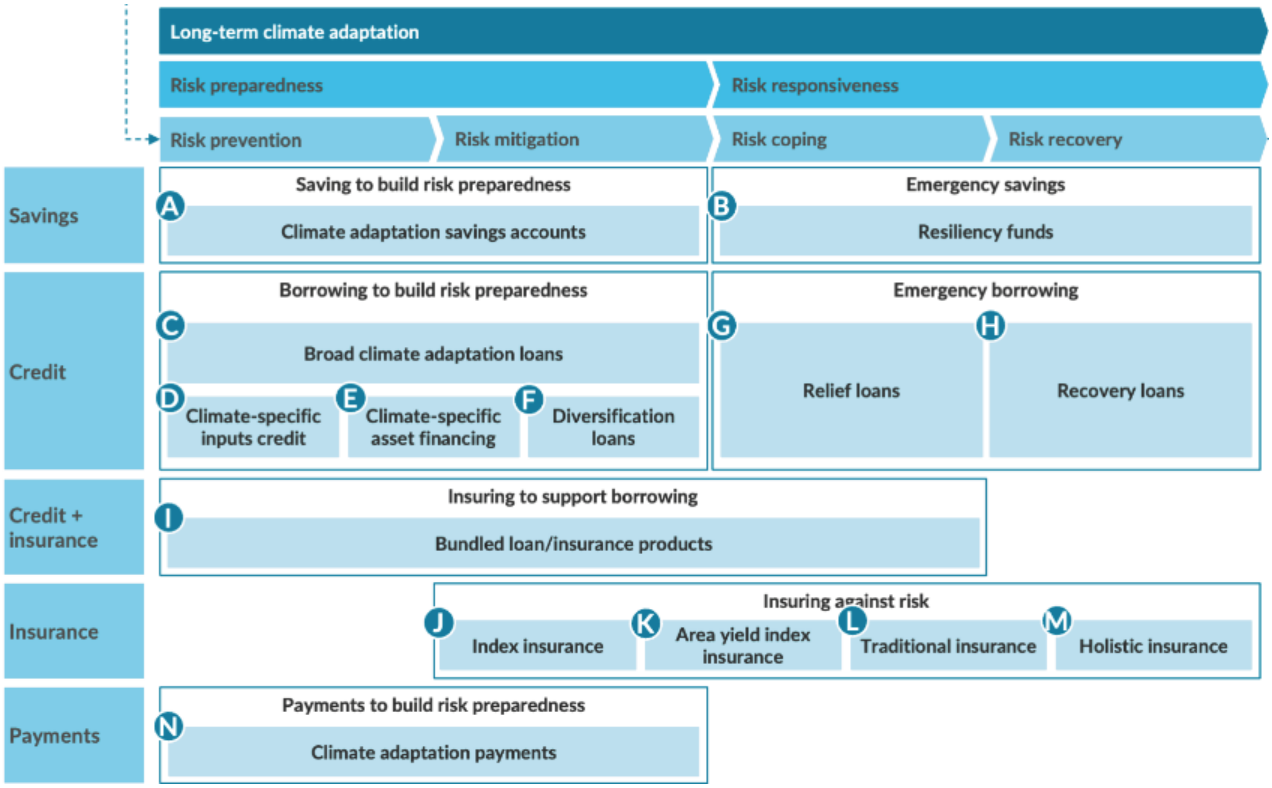
The major microfinance actors are licensed microbanks. Some of the largest of these (Bayport and MyBucks), hold most of their loan portfolio in consumer loans backed by salaries. Others of relevant size which do actively serve low-income households in the informal economy include SOCREMO, which is present in urban areas throughout the country and Microbanco Confianca and Futuro Microbanco, are locally based, each covering a single province. Other actors with more of a national coverage, although reduced portfolio size include GAPI (which focuses primarily on rural MSMEs) and AfricaWorks, which serves very low-income, primarily women in peri-urban areas. At present, there is no microfinance institution or group of institutions which are of substantial scale and geographical spread to easily be able to meet the demand for financial services among low-income households, and in particular credit. Further, Interest rates from the microfinance sector tend to be prohibitively high (starting at 36% per year, with some reporting of rates over 100%.)

There are 15 insurance providers. Much of the business to date focuses on obligatory insurance policies, such as workers' compensation, vehicle, and liability. There is one institution which is actively seeking ways to reach the informal sector more effectively though credit life plus insurance policies with microfinance providers, weather indexed insurance and research into insurance products for households affected by cyclones. This insurance provider does have the potential scale to reach

4.2 A Role for Financial Institutions - Climate Responsive Financial Products

In 2022, the Consultative Group to Assist the Poor (CGAP) carried out a global scan of financial products and services that assist households to manage or rebuild from climate shocks. They found that while there are some financial products specifically designed to assist households to prepare for climate risks, there are also many generic financial products which enable households to manage their risks during shocks. The figure below provides a framework for understanding the different types of financial services which help people prepare for or respond to shocks.

Figure 30: CGAP Scan of Climate Responsive Financial Products [58]



[58] PowerPoint Presentation (findevgateway.org)

"Climate-responsive financial products" are those designed to support vulnerable people adapt to and/or build resilience to climate risks, including:

- Index insurance (rainfall, drought, livestock, etc.)
- Catastrophic risk insurance (e.g., hurricanes, droughts)
- Savings designated specifically for recovery from natural disasters
- Credit with repayment terms tailored to climate risks.

"Climate-supportive financial products" are generic products that also support vulnerable people adapt to and/or build resilience to climate risks:

- General savings accounts that can provide emergency liquidity
- General credit that can be used to invest in adaptive practices.

In terms of climate-responsive financial product landscape, both products which reduce consequences of climate risk and those which focus on coping and recovery exist in the market.[59] The figure below summarizes responsive products identified by the CGAP Mapping and similar examples found in Mozambique.

Figure 31: Categories of Climate-Responsive Financial Products [60]

Product group	Product typology	Definition	Examples in Mozambique
Savings	Climate adaptation savings accounts	Savings accounts designated specifically for the purchase of climate-resilient assets (e.g. inputs and/or to enable adaptation)	
	Resiliency funds	Savings funds with a dedicated purpose of holding savings to be released in the event of a climate shock to provide liquidity	
Credit	Broad climate adaptation loans	Loans designed for the general purpose of enabling climate adaptation (e.g. income diversification, purchase of equipment) without stipulating specific use of funds	
	Climate-specific inputs credit	Loans tailored specifically and exclusively for the purchase of climate resilient inputs (e.g. seeds, energy)	- Loans to purchase improved seeds and other agricultural input offered though the SUSTENTA project (some through commercial banks, other loans directly from Fund for Agriculture Promotion and Rural Extension.)
	Climate-specific asset financing	Loans tailored specifically and exclusively for the purchase of climate resilient equipment to support livelihood and personal activities (e.g. solar, irrigation, cookstoves)	- UNIDO in partners with BCI to offer loans for solar equipment. UNIDO provides low-cost capital, risk sharing and a technical team to assess loan applications. - Millennium BIM is lending to renewable energy projects. - Some companies which sell clean cookstoves (e.g. MozCarbon) accept payments in installments.
	Diversification loans	Loans tailored specifically and exclusively for diversification into specific livelihoods or value chains (e.g. forestry)	
	Relief Loans	Loans designed specifically for providing short-term liquidity and relief from climate change impacts (e.g. to avoid negative coping mechanisms)	Some commercial banks provided restructuring and - to a more limited degree- refinancing after cyclones and during COVID to their business loan clients. This was not usually targeted at low-income households

59 State of the Climate-Responsive Financial Product Landscape | Blog | CGAP
60 PowerPoint Presentation (findevgateway.org) ; key informant interviews

Product group	Product typology	Definition	Examples in Mozambique
	Recovery Loans	Loans designed specifically for recovering from climate change impacts (e.g. rebuilding homes, restoring land)	
Credit+ insurance	Bundled loan/insurance	Loans bundled with insurance to decrease the risk of defaulting on repayments in the event of climate change impacts that affect repayment capabilities	- MyBucks (formerly Banco Oportunidade) offered a Credit+ insurance which covered the value of the loan and a payout for funeral in the event of death of client. It was not specifically related to climate shocks
Insurance	Index insurance	Insurance products that pays out benefits on the basis of a predetermined index for loss of assets resulting from climate events (e.g. low rainfall, livestock disease)	- Hollard offers a weather indexed insurance for drought events rainfed agriculture, which covers the cost of seeds.
Payments	Area yield insurance	Agricultural insurance that pays out benefits if the crop yield falls below the historical average yield in a unit area of insurance	
	Traditional insurance	Insurance products using traditional claims assessment process to cover specific climate risks (crop damage, livestock disease)	- Several insurance companies offer traditional insurance to structured agribusinesses (e.g. Hollard, Global Alliance)
	Holistic insurance	Insurance products that cover specific climate risks (e.g. low rainfall, livestock disease) with broader insurance coverage (e.g. healthcare, life insurance)	
	Climate adaptation payments	Payment programmes and systems designed to incentivize vulnerable people to adopt adaptive practices (e.g. climate smart agricultural practices)	- Several donor-funded matching grants or performance-based grants projects are designed to incentive more resilient agricultural practices (e.g. World Bank, FAO, USAID) - Other projects work with communities to adopt agroforestry projects and link them to carbon credits (e.g. FNDS, Biofund)

While the list is long, insurance represents the majority of these products.

- products primarily focused on rural areas and on agriculture.
- products offered by insurance or insur-tech companies, alone and/or partnerships with government, fintechs, and lenders.
- Insurance companies tend to collaborate with many different partners, including governments, NGOs and microfinance institutions, primarily to increase channel outreach and the accessibility of their product[61].
- Most are designed to address multiple climate risks, rather than being tailored for a single climate risk (e.g., low rainfall, floods or pest/disease outbreaks)
- Some cover second order climate effects, such as health and funeral coverage.[62]

In Mozambique, there is some evidence of this collaboration, for example Hollard's work with the Ministry of Agriculture's SUSTENTA program, but the insurance products offered in other countries do go beyond what is currently available in Mozambique with regards to weather-indexed insurance (for example, they may cover yield loss and not only the cost of inputs; they cover drought but not yet other climate shocks.)

61 PowerPoint Presentation (findevgateway.org), p 12
62 PowerPoint Presentation (findevgateway.org), p 12

- In terms of credit, around the world:
  - products often support vulnerable people to prepare for, adapt to or respond to a range of climate risks (e.g., loans to build houses' resilience or support reconstruction after either floods or storms).
  - by far the majority of providers are microfinance institutions, which offer credit + insurance products, emergency products, relief and recovery loans. Very rarely are such products offered by commercial banks.

  This poses a specific challenge in Mozambique, where the outreach of microfinance institutions is considerably more limited than in other African countries, while the commercial banking outreach to the market is similar. This gap in the financial ecosystem will require creative solutions.

- One area not covered in the scan, but equally important is transfer services to support remittances. Cross-border transfers of money to family members has been found to be an important source of climate finance in some countries. The reported average amount of remittances in Mozambique between 2011-2021 was USD 205 million with increasing trends.[63] Facilitating such cross-border transfers, for example through MMOs, to low-income communities, especially after climate shocks could be an important initiative, which may require dialogue between financial service providers and the regulator.

Source: Ayani, BV

- Carbon credits - Carbon credits are increasingly seen as an instrument to catalyze investments in reducing carbon emissions. They also provide an opportunity to reduce the cost of adaptation investments and/or provide financial incentives to populations to adopt preventative practices. In Mozambique, initiatives include reforestation and agroforestry projects, clean cookstoves, clean energy, and water renovation projects. Financial institutions are not yet benefitting from or promoting on any large scale, but there is ample opportunity.[64]

Research that looks specifically at women and youth indicates that in order to ensure that their vulnerability is reduced, it is necessary to deliberately consider the specific concerns of these groups. As discussed in previous sections, climate shocks can exacerbate GBV due to a breakdown in social systems, lack of law enforcement, and limited access to health facilities, and have been shown to increase sexual harassment, domestic violence, sexual exploitation of children, and human trafficking.[65] One way to mitigate this is the direct investment to infrastructures which mitigate these risks. At a national level, this may include "Safe Cities." At the level of retail financial services, this could also mean safe and secure houses and greater financial stability[66]

Savings and remittances typically constitute the first lines of defense for low-income people in dealing with climate shocks. This is particularly true for women, who tend to rely more on their savings as a source of emergency funds, compared to men. The CGAP scan, however, identified only two climate-responsive savings products and a single payment product. It may be that generic savings and payments products are considered sufficient, but there is not yet research available to confirm that.[67]

Source: Ayani, BV

For young people, resilience is a priority. A study carried out by the Global Center for Adaptation (GCA) found that young people consider better agricultural practices, food security and resilient infrastructure as critical to preparing for climate-induced disasters. Further, young people tend to be active during disasters and can serve as a good resource for sharing information about resources available.[68] Specific vulnerability of young people to the long-term effects of climate shocks – in particular possibility for exploitation of loss of educational opportunities - means that building this resilience is particularly important. Recommendations from the young people participating in the current study focused on capacity building linked to financial services (such as business training accompanied by finance), which supports this understanding that building resilience is an important need for this group.

63 An Assessment of the Financial Sector and Green Finance Policy Landscape in Mozambique, FSDMoc, 2021, Page 31.
64 Seminário sobre Mercados de Carbono em Moçambique, Maputo, 10 August 2023.
65 The Material Risks of Gender-Based Violence in Emergency Settings: Is GBV Impacting Your Investment?, UNICEF and The Criterion Institute, p2 The-material-risks-of-gender-based-violence-in-emergency-settings-2020.pdf (unicef.org)
66 The Material Risks of Gender-Based Violence in Emergency Settings: Is GBV Impacting Your Investment? UNICEF and The Criterion Institute, p5
67 State of the Climate-Responsive Financial Product Landscape | Blog | CGAP
68 Young People and Drivers and Barriers to Climate Adaptation Action, Global Center for Adaptation, 2021, p 7.

4.3 A Role for Regulators

In the current context, the international community is focused on in increasing the supply of "green finance" or "climate finance." The Alliance for Financial Inclusion (AFI) categorizes green finance into promotion, provision, protection and prevention. This framework assumes that different actors within the financial ecosystem play different roles.

Figure 32: AFI Green Finance Framework[69]

For example, central banks can plan a role in "promotion activities", ensuring that financial institutions have the capacity and the information they need to develop and offer green finance products.[70] Some examples of central bank efforts include:

- Egypt: Sent out staff and banks to learn about sustainable finance.
- Bangladesh: Collects and shares data on green finance, including sex-disaggregated data.
- Philippines: Gathers data on the impacts of disasters to local banking operations.

Such supply-side efforts only work when done in coordination with broader efforts to bring awareness to the market. If households are not aware of or do not see the value, even well-designed products may have no impact. Green products are new, and some will need time to design and adjust, as such the roll out is often slower than expected.[71]

Some regulators have decided to go beyond "promotion" to help the sector translate this into "provision" of green financial services. Examples include:

- Lending quotas: Bangladesh: 5% of all loan disbursements for green financing; Nepal: 10% of portfolios to green energy; Egypt: 20% of portfolio to finance MSMEs including renewable energy and climate-resilient irrigation.
- Refinancing: Bangladesh: Subsidized loans for low-carbon products; Nepal: Subsidized loans for solar energy, biogas and waste treatment; Argentina: relaxed impairment allowance for agricultural loans with climate insurance.
- Investments: Morocco: Established an Innovation Investment Fund.
- Emergency: Peru: Rescheduling of retail loan repayments during climate shocks; Central Sri Lanka: Moratorium on loan repayment during climate shocks.[72]

Challenges revolve around definition and monitoring of beneficiaries to avoid misuse.[73]

"Protection" often requires the engagement of different stakeholders. Examples include:

- Agricultural climate risk insurance: Armenia: Subsidizes 50–60% of policies; Morocco: government holds a "climate multirisk" insurance product to protect investments in major cereal crops;
- Guarantees: Nigeria: Central Bank guarantees 50% of the loss if a smallholder farmer defaults on a loan; Ghana: National Risk-Sharing System for Agricultural Lending.
- Payments through MMOs: Fiji: Mobile payments disbursed assistance from its "Help for Homes Initiative" after Tropical Cyclone Winston.
- Early Withdrawal of Pension Funds: Fiji and Vanuatu: People could withdraw 20% from their retirement accounts to rebuild their homes.
- Post-Disaster Rehabilitation funds: Philippines and Fiji: natural facilities

Challenges associated with these types of facilities revolve around ensuring mechanisms for sufficient outreach, need for high levels of coordination among different government and financial sector stakeholders and the ability to collect real-time accurate data.[74]

Finally, "prevention" looks at helping financial institutions minimize the negative impacts of their investment on the environment.

- Development of Environment and Social Risk Management Guidelines: Bangladesh, Brazil, Pakistan, Nepal, and Paraguay are examples of countries which have rolled out guidelines.

69 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 12
70 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 14
71 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 15
72 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 18
73 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 19
74 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 21-22

Voluntary guidelines are often not implemented by financial institutions. Requirements must be done carefully to minimize the potential of increasing financial exclusion and avoid heavy cost burden on smaller financial institutions which may be more effective in reaching vulnerable communities.[75]

One area which government and regulators need to consider with caution is that a lot of focus in terms of green finance is placed on large business with the greatest climate impact, but those which are most vulnerable to the consequences are typically poor households. As such, in order to ensure that "green climate" funds, which are increasingly available to governments and other large actors, also reach the vulnerable communities, green finance needs to be deliberately linked to financial inclusion on the part of regulators, financial institutions, development finance institutions (DFIs) and other key stakeholders in the public and private sectors.[76]

4.4 A Role for Governments

- In many countries, strategies for social protection and climate change are not aligned. They remain institutionally separate, with separate intra-sectoral coordination groups and funding channels. This limits their potential to develop synergies between social and environmental risk management and responses. Mozambique has the opportunity to ensure a clear collaboration between the climate task force and social support services.[77]

- In some countries (e.g., in Nigeria, Brazil and India),[78] governments hold national insurance policies designed to support smallholders. This is particularly important given evidence that smallholder farmers do not have a strong appetite for insurance products, though tend to be among the most vulnerable to climate shocks. While there have reportedly been some discussions on this topic within Mozambique, the government has yet to dedicate sufficient resources to adequately insure vulnerable populations from climate risk .[79]

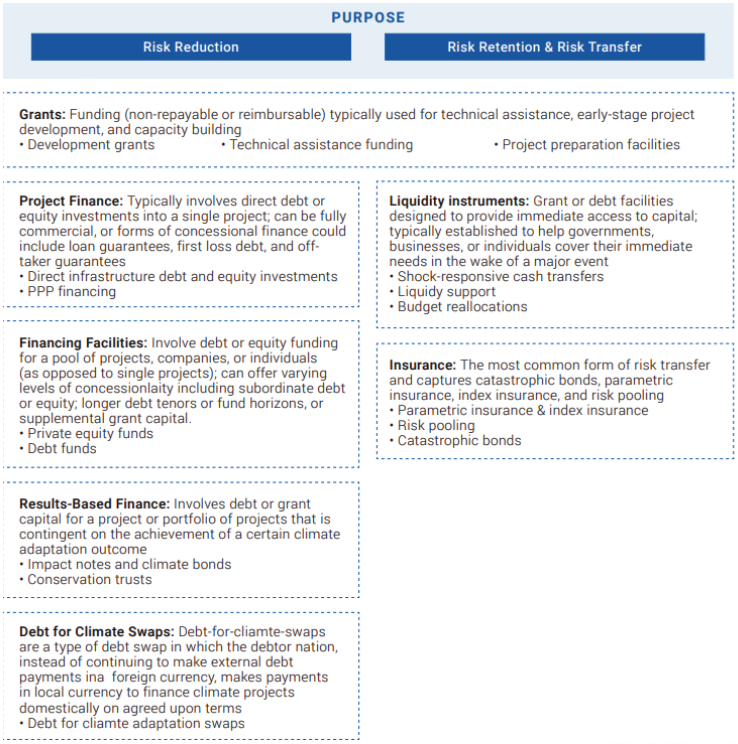
- Digital technologies can greatly support financing for adaptation by improving efficiency, transparency, and accessibility in various aspects of the process. Digital platforms (e.g., ESCAP Asia Pacific Risk and Resilience Portal) enable efficient collection and analysis of data, informing evidence-based decision-making and adaptation investments.[80] To support financial institutions in mainstreaming resilience into their investments in Mozambique, robust climate data would help mainstream decisions and an increase ability to disclose climate risks for financing.[81]

- Specialized Funds are one way that some governments are promoting climate finance. For example, the Komaza Smallholder Forestry Vehicle in Kenya is an instrument that packages tree production partnership contracts with thousands of smallholder farmers and sells them to investors, providing farmers and forestry companies with access to low-cost, long-term finance while enabling institutional investors to access sustainable forestry investments. The instrument has broad applicability in terms of market and policy enabling environment because it is based on funding to and contracts with individual farmers.

75 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 24-25
76 Inclusive Green Finance: A Survey of the Policy Landscape, AFI, ILI, IGF Working Group, June 2020, p 30
77 Seizing the Moment: Targeting Transformative Disaster Risk Recovery. Asia Pacific Disaster Report 2023. United Nations: Bangkok, 2023, p 79
78 PowerPoint Presentation (findevgateway.org), p 12
79 Key informant interview.
80 Seizing the Moment: Targeting Transformative Disaster Risk Recovery. Asia Pacific Disaster Report 2023. United Nations: Bangkok, 2023, p viii
81 Richmond, Morgen et all, Financial Innovation for Climate Adaptation in Africa, Global Center for Adaptation, 2022, p 5

4.5 Mobilizing Resources

Figure 33: Type of Climate Financing Instruments[82]



International Funding is increasingly available to help governments, regulators and financial institutions make the shift to climate finance. The adjacent figure maps some climate financial instruments. The adjacent table presents an overview of the type of financing available to governments, private companies and financial institutions seeking to develop green initiatives- including supporting communities to build resilience to climate shocks.

Other important sources of climate finance for government and private sector:

- Green bonds – governments can offer green bonds to raise capacity for resilience/adaptation or recovery programs (e.g., Fiji).
- GCF – which has several projects in Mozambique – does work in some countries with financial institutions to promote green finance. e.g., Tanzania: supports national banks to offer adaption loans to smallholders and guarantees and grants to develop climate insurance.[83] Elsewhere: forecast-based finance, linking disbursements of (credit or insurance) to climate forecasts and predefined community actions to reduce risks.[84]
- Emerging innovations in financing mechanisms, such as thematic bonds, debt for adaptation, ecosystem adaptation finance (e.g., biodiversity credits.) can attract private investment but are not yet widely available in Africa, and as such donors and DFIs can play the role of filling the gap with funding and exchanges with other countries that have successfully utilized innovative financing mechanisms.

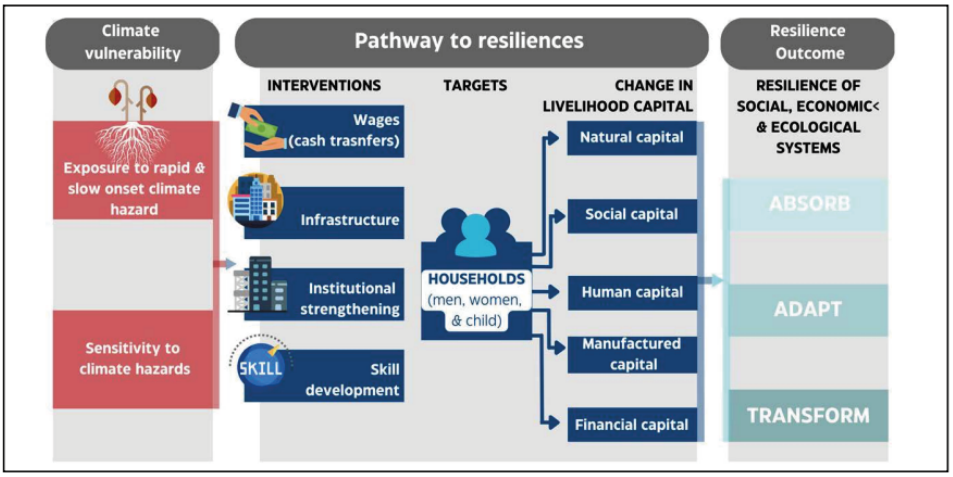
4.6 Need for Coordination for the Success of Climate Finance

Climate finance – including financing for climate resilience and recovery – is relatively new, but given the importance of addressing climate change, interest and resources are rising. Section 4.1 listed a variety of challenges which Mozambican households face with increasing frequency and intensity. This implies that financial service providers will soon need to better understand and quantify the opportunities and risks presented as Mozambique moves to increase climate resilience .

As the figure below shows, building resilience requires multiple interventions, ranging from access to finance, appropriate infrastructure, strong institutions and training/education to adapt to the changing environment. This implies that households also need to adapt in protecting and building their natural environment, leveraging social networks, skills, livelihoods and management of their financial resources.

82 Financial Innovation for Climate Adaptation in Africa 2022, Global Center for Adaptation, p 27.
83 GCF:Catalysing finance for climate solution, GCF: Catalysing finance for climate solutions (greenclimate.fund)
84 Climate Information and Early Warning Systems, Sectoral Guide Consultation v1, Green Climate Fund: 22 September, 2022. P 136

Figure 34: Pathways to Resilience[85]



Sections 4.2– 4.5 have shown that there are many lessons which can be learned from other countries, but that financial institutions cannot do it alone. It takes coordination among different financial institutions as well as between the financial sector and government, regulators and private sector.

Continued dialogue is needed to:

1. Design appropriate and responsive financial services
2. Create an enabling environment to attract climate finance to the country.
3. Mobilize sufficient resources to supply and manage risk of these financial services (including coordination with government and NGO efforts)

[85] Seizing the Moment: Targeting Transformative Disaster Risk Recovery. Asia Pacific Disaster Report 2023. United Nations: Bangkok, 2023, p 80

5 Conclusions and Recommendations

5.1 Summary of the Challenge

Table 11: Summary of Challenges in Offering Financial Products for Recovery and Resilience of Climate-Affected Households

	Main Challenge		Implications for Financial Services
Negative environmental impacts	Climate shocks can have long-term impacts on the environment (e.g., erosion, mudslides, loss of trees, change of coastline)	→	Climate may require some households to relocate or adjust their livelihoods. Linkages with programs focusing on these issues can minimize risks to financial service providers.
Coping strategies with negative environmental impacts	Harvesting wood from forests or mangroves to rebuild houses, make charcoal to start businesses, dredging sand for sale, clearing forests to open new farms for displaced smallholders exacerbate deforestation.	→	Potential to explore opportunities to access funds (e.g., Green Climate Fund (GCF), Climate Investment Fund , carbon credits) to promote resilience which could also mitigate negative impacts on environment. More financing to programs such as REDD+ and BioFund, which seek to promote reforestation. Consider innovative business solutions and how these can be financed.
Housing	Housing is the largest financial loss for most households, especially for women. Housing finance is almost non-existent in Mozambique.	→	Solutions to assist in building resilient housing will require not only new products but also distribution mechanisms able to reach a large number of rural and urban households.
Weak social services and infrastructure	Illnesses more serious and can lead to death, crime continually increases, markets are more difficult to reach, some areas more prone to flooding	→	Financial services may require linkages with other efforts to mitigate these risks/costs. Participants proposed support with market linkages to accompany insurance or loans for agriculture.[86]
Government / donor support insufficient to cover all needs	Government funds are insufficient to cover the cost of rebuilding after climate shocks.	→	Better use of insurance and green finance options to expand resources available post-shock. More deliberate collaboration by government with financial and private sector to determine if existing funds could somehow be used to leverage private funds (or CSR funds from private companies.)
Limited distribution of microfinance providers	Microfinance institutions are relatively small compared to other African countries, with limited outreach. Most registered operators are small, individually owned, local moneylenders.	→	Unclear which institutions would be able to offer lending products at scale to affected households. Creative partnerships (e.g., among banks, microfinance institutions, MMOs, Fintechs, savings groups) required to reach scale.
Climate shocks tend to drive finance away	As affected households are seeking funding to rebuild, financial institutions are reducing portfolios in climate-vulnerable areas to reduce their risk exposure.	→	Insurance to cover climate risk in loan portfolios exists in Mozambique and could be better leveraged to keep financial institutions in climate-affected areas. Sharing information on opportunities and risks through studies, workshops, discussion groups.

[86] Linkages of financial services into agricultural value chains represents are major challenge, and is the focus of multiple government, donor and private sector working groups and national and local levels. It is important to underline the climate shocks increase the challenge and the need for coordination, but are not the only cause.

	Main Challenge		Implications for Financial Services
Insurance not widely understood	Innovative insurance products designed to deal with climate risks are available, but not used at scale. Review of design underway.	→	Insurance as a concept and products available could be included in information campaigns, training programs and/or linked to other recovery efforts. Leveraging trusted providers such as MMOs, savings groups to include insurance in marketing campaigns and support to innovative insurance companies.
Savings Groups - room for optimization	Some communities are unfamiliar with savings groups. Others with savings groups keep savings in a box (and thus vulnerable to climate shocks and crime). Financial institutions revising products to link better with savings groups. Insurance not incorporated into model.	→	Savings groups provide an important resilience strategy but could do more and could be more secure. In Mozambique, savings groups attract more women than men. Financial service providers continue to explore ways to link with savings groups more effectively. Savings groups promoters engaged in discussions on financing recovery and resilience.

5.2 Recommendations for Financial Products and Services

Table 12: Recommendation for Financial Products

Product	Responsiveness to need	Availability of likely provider	Description	Potential add-ons	Rationale	Actors	Potential Intervention
Rent-to-own housing finance			Building on the Casa Real pilot In Beira after Cyclone Idai, construction of resilient houses which can be rented on a rent-to-own basis. If the tenant remains in the house and makes rental payments over an agreed upon period, the house ownership transfers to the tenant[87]. More research needs to be done as to how to bring the pricing down from $10K.	• Green construction considerations such as renewable energy sources, clean cookstoves could reduce the cost of rental by linking to carbon credits • Insurance to cover eventual future shocks • Combining with donor funds (e.g. UNDP) earmarked for reconstruction to reduce costs	• Housing is greatest loss in terms of assets, affecting women and female-headed household relatively more • Households struggle to rebuild • Lack of good housing increasing vulnerability to future climate shocks, crime, illness, death • Rental of housing becoming more common in climate-affected populations	• Construction company, other private actors in construction value chain • Bank / microfinance institution • MMOs and fintechs – to facilitate payments • Companies offering renewable energy, clean cookstoves linked to carbon credits • Government – allocation of land leases, approval of building standards, activation of local coordination bodies, linkages with GCF, World Bank, other funding resources, building of infrastructure as appropriate • Bank of Mozambique – as needed adjust regulations to promote affordable finance • Insurance – risk coverage	• This is a potentially high-impact intervention, which would required substantial market support including identification of potential construction companies, support in finding ways to reduce the cost and produce at scale, refinement of the rent-to-own scheme and identification of lenders. • Support in coordination between donor programs and sources of green finance could support financing • Assistant to lenders to design and roll out loan product • Linkages- where feasible to carbon credits. • This model could potentially be expanded to other market segments.

Highly responsive to needs/likely available provider in local market

Somewhat responsive to needs/potential provider in local market

Less responsive to needs/unclear which providers could offer services

[87] https://reall.net/blog/celebrating-affordable-housing-in-beira/

Product	Responsiveness to need / Availability of likely provider	Description	Potential add-ons	Rationale	Actors	Potential Intervention
Promotion of Savings Groups		Improved form of the traditional xitique, informal groups typically composed up to 25 self-selected individuals who meet regularly to save amounts based on each member's ability. Groups pool savings to make loans with interest, which is added to savings. Groups typically have a designated period to "cash-out" when members withdrawal savings[88]	• Linkages to banks, mobile money providers to better secure savings • Education on adaptation, climate resilience including offer of insurance product, credit and carbon credit opportunities • Health savings funds, similar to social funds	• Savings were important in managing recent cyclones • Women in Mozambique are more likely to join savings groups. • Savings groups – including xitiques – were commonly cited sources of funds and could be improved to do more • Security of funds through linkages important • Offers a good opportunity to disseminate information and provide additional financial literacy • Health costs increasing	• Development projects working with vulnerable communities who could include savings group component • Donors, government – mobilize resources and potentially climate finance resources to support expansion • MMOs and banks - improve products to adapt to savings groups needs[89] • Fintechs- to provide training and systems to better link with MMOs and banks. • Insurance companies – collaborate to develop financial education and clear distribution	• Identify donors to support the establishment of savings groups, especially in areas vulnerable to climate. • Work with existing savings group promoters to ensure that they are incorporating climate-smart features into their approaches (including digital linkages, introduction of insurance, training in resilience and special savings for health costs.

88 Savings Groups | Blog | CGAP
89 M-PESA reportedly making efforts to address this.

Product	Responsiveness to need	Availability of likely provider	Description	Potential add-ons	Rationale	Actors	Potential Intervention
Insurance against climate shocks for households			Build on existing weather indexed insurance to diversify risks covered (beyond drought to include cyclones, floods, etc) and simplify mechanism (away from insuring an asset to buying an amount of insurance (designated in MZN)	• Bundle with loans, transactions or savings accounts. • Work with savings groups promoters to incorporate in methodology • Work with government, donors, NGOs on dissemination	• Great need to mitigate risk of climate shocks • Limited information on insurance among affected populations • Global data demonstrates lack of appetite among affected populations	• Insurance companies • Other financial institutions • Development projects (donors, government, NGOs) • Regulator • DFIs, GCF or other climate finance if subsidies are required on premiums.	• While insurance has great potential, there is a need a build the market through financial education campaigns and support to donor projects, government projects to include insurance to affected communities in their trainings, including how to access it. • Incorporate training into savings groups • Work with formal financial providers to bundle insurance with their savings, transactions and credit products.
Climate insurance for loan portfolios			Build on existing credit insurance to cover different weather risks, to cover potential portfolio losses	Add additional insurance (see previous)	• Financial institutions need risk mitigation to enter or remain in higher risk markets	• Insurance companies • Lenders • DFIs, GCF or other climate finance if subsidies are required on premiums.	• Facilitate dialogue between insurance companies and lenders to build demand. • If needed, discuss with regulators to determine how such insurance affects impairment allowance calculations • Support insurance company to adjust offering.

[90] Hollard Seguros is actively looking into this opportunity.

Product	Responsiveness to need	Availability of likely provider	Description	Potential add-ons	Rationale	Actors	Potential Intervention
Post-disaster enterprise loans			Loans at favorable terms and with lower collateral requirements to affected households	Potential linkage with government recovery initiatives	• Small business loans (10K – 40K MZN) were most frequently recommended by affected households • Limited microfinance mean need for creative partnerships • Current market interest rates and conditions prohibitive for climate-affected households	• Banks – as retail or wholesale lenders to microfinance institutions • Microfinance institutions – with alternative collateral option (group loans, movable assets) • MMOs – to assist in distribution, data-based cash flow lending • Private sector (and banks) to mobilize CSR resources • DFIs, GCF or other climate finance to mobile resources, mitigate risk and potentially provide some subsidies to reduce rates	• Deep diver into the microfinance sector, the challenges to its expansion and recommendations as to how best to support it • Analysis of the success to date of digital credit, lessons that can be learned and how somewhat larger loans could be considered. • As needed, develop a specific project, or leverage existing programs designed for increase credit to low-income communities, in particular MSMEs and smallholder farmers.
Expansion of MMO and diversification of services			Transactions, payment services via mobile phone. Small credit facilities (M-PESA Txuna) Viewed by many users as a savings service.	• Linkages to other proposed financial products for distribution • Continued expansion of linkages to subsidies • Cross border transactions for remittances. • Waiving of fees to communities affected by shocks	MMO's are the most used and fastest growing financial services (formal or informal) among affected populations. Their services were considered as the most important in helping affected communities during and after the shocks. Their waiving of fees after Freddy was much appreciated.	• MMOs • Partners as relates to other proposed financial products • Regulators (with regards to cross-border transactions)	• Work with regulators as needed to unblock hurdles to improving remittances and linkages to other climate financial services.

Product	Responsiveness to need	Availability of likely provider	Description	Potential add-ons	Rationale	Actors	Potential Intervention
Carbon credits			Financial payments for demonstrated sequestration of carbon through such activities as reforestation, agroforestry, clean energy, etc.	• Linkage of NGOs, government initiatives to carbon credits • Linkage payments to pay insurance premiums • Investigation of whether carbon credits can be used for resilience (e.g., housing) in order to reduce pressure on forests and mangroves due to coping strategies after climate shocks	Carbon credits can increase income of households and reduce cost of investments in resilience. Some actions of communities in coping with shocks put further pressure on forests and mangroves, thus	• Government (task force, National Fund for Sustainable Development) • NGOs promoting reforestation and agroforestry • Private companies promoting clean cookstoves, renewable energies, etc. • Financial institutions supporting relevant private or community initiatives • Insurance companies (if feasible to link) • Savings groups promoters (to incorporate in methodology) • MMOs- distribution • Other financial sector actors, where linkages to products are feasible.	• Carbon credits have potential, but are not yet easily available to communities seeking to preserve forests or mangroves. • Promote proactive inclusion of financial sector and regulators in carbon credits task force.

5.3 Recommendations for Other Relevant Initiatives

Table 13: Recommendation for Other Relevant Initiatives

Product	Description	Potential add-ons	Rationale	Actors
Coordination between government, private and financial sector in planning for resilience and reconstruction	Review the possibility of utilizing government funds for disaster response differently. Some or all could be transformed from grants to to guarantee facilities and/or subsidized loan facilities		• Current government funding is insufficient to meet the needs of climate- affected populations • Banks have more liquidity/capacity to expand be limited appetite • Microfinance institutions have capacity but limited resources	Government Donors Financial Sector Bank of Mozambique Supervisory Institute for Insurance in Mozambique (ISSM)
Government insurance policy for climate shocks	Insurance policy held by government to cover potential losses		• Current government funding is insufficient to meet the needs of climate- affected populations • Insurance policies exist	Donors- to support with subsidies of policy Government – to purchase the policy Insurance company Other partners to support with identification and distribution (NGO, local government)
Post-disaster subsidies for young women	Subsidies to young women post disaster	Could be linked to evouchers or distributed through MMOs	• Young women particularly vulnerable to long-term effects of climate shocks • Financial vulnerability exacerbates the likelihood of GBV and other risks	• Donors • Government • NGOS • Financial sector (e.g., MMOs) to assist in identification and distribution.
Initiatives by the Bank of Mozambique	See section 4.2.2 for examples of initiatives		• International experience shows that an enabling environment is critical for successful climate finance	• Depends on the selected interventions, but FSDMoç is well placed to be a facilitator.
Building back better – national infrastructure	Ensure climate resilience in rehabilitation of existing infrastructure and planning of new infrastructure		• Water, health care systems and policing – as well as infrastructure that reduces flooding – have proven vulnerable and particular important to poor households	• Government • Donors • GCF and other climate finance

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Annex 2 Research Questionnaires

Focus Group Guides

AFI's Inclusive Green Finance: A Survey of Policy Landscape
Focus Groups will use a set of instruments adapted from MicroSave financial services research instruments to address key questions in the research framework in Section 2.1.

Focus Group Discussions	Research Instrument
Who are the participants?	Observation; Introductory questions
What are the major climate events affecting households in Mozambique?	Time Series of Crisis
How are these events affecting households?	Time Series of Crisis; Time Series of Asset Acquisition and Ownership
What climate adaptation and resilience mechanisms are available to households?	Time Series of Asset Acquisition and Ownership
What financial services are available and how well do they respond?	

The boxes on the following pages present the research instruments mentioned in the table above. For all discussions, the moderator will ensure that all voices are being heard and encourage quieter participants to voice their experience by asking individual questions if required. Further instructions to the moderator are presented in the description of the tools.

Time Series of Crisis

1. The moderator asks the participants to brainstorm and identify the most significant crises affecting their community over the last 1-5 years.
   - A crisis card will be created for each crisis.
2. The moderator asks participants to rank these crises in order of importance/impact on the community.
   - The group will organize the cards in order of importance.
   - The moderator will present a pre-prepared time series chart on a large cardboard and place it on the table or the floor, placing the crisis cards on the Y axis.
3. The moderator asks participants to place small stones (0 to 5) to indicate the relative magnitude of the key crisis variables under consideration for the current year, followed by the previous year and then five years prior, and finally ten years prior.
4. The final chart (which the moderator should copy into her notebook) will appear something like:

	This Year	Last Year	Five Years Before	Ten Years Before
	**	***	**	
Sickness	*	***	*	**
Death			***	*****
Loss of Employment	***			
Loss of Business	**	*****	****	*****
Theft			**	****
Floods	****			
Droughts		****		
Loss of House/housing	**	*		
Divorce/Separation	**			
Other				

5. The moderator will discuss the results with the participants to understand their interpretation of the gravity of the crises, and whether they feel that shocks are increasing in severity or frequency.
6. The moderator will discuss with participants the loss that they suffered (in terms of income, assets, employment, other) in the different crises.
   - The moderator will take notes and report on the estimated household loss (type and if feasible value), using the same timeseries matrix format.
7. The moderator will ask participants what they normally do in response to the climate shocks mentioned, and are they doing anything now to prepare for future shocks. Is this changing?
8. The moderator will seek feedback on their experiences during the shocks (were they able to access support services, were their risks of violence)

Time Series of Asset Acquisition and Ownership

1. The moderator will place the pre-prepared time series chart on the floor or the table and ask each participate to indicate which assets they have.
   - Depending on the literacy level, the moderator will ask the participants to write an "X" for each of the key assets that they own in the current year, or will assist in writing the "X."
   - Where they have several of these assets, they should place an appropriate number of crosses Thus if one participant has three cows, she should place three crosses to indicate this. In the second section (human/social assets) ask participants to place crosses indicating a scale from 0=bad/none to 3=good/all.

2. The same exercise will be repeated for the previous year, five years prior and ten years prior.
3. When the participants have finished preparing their charts, ask them to explain them to and discuss them with the other participants.
4. The final chart will appear something like:

Physical Assets	This Year	Last Year	Five Years Before	Ten Years Before
Owned House # of rooms	XXX			
Rented House # of rooms		XX	XX	X
Production tools and equipment				X
Own business premises	X	X	X	
Rented business premises				
Land/crops – detail by value chain				
Animals				
Financial Assets				
Savings Account with Xitique	XXX	XX	XX	XX
Savings Account with Savings and Credit Association		XX		
Savings Account with formal bank	XX			
Membership in Cooperative	XXX	XXX	XXX	X
Access to credit from MFI/Bank	XX			
Insurance				
Grants from government or donors.				
Human/Social Assets				
Productive skills/knowledge	XX	X		
Health	XXX	XX	X	X
Support available from government, NGOs, civil society				
Religious organizations (church, mosque, etc.)				
Forests. Mangroves, other major natural assets available to the community				

5. The Moderator will seek to determine the importance of these assets in mitigating the impact of crises.
   - The moderator will provoke conversations about changes in assets due to the crises indicated in the previous exercise. It is important to draw out which assets the participants lost and/or used in these crises, and how they contributed to the ability of participants to manage the crises. The moderator will pay special attention to which crops are important (i.e., those under women's or men's responsibility)
   - Related to this question, the moderator will seek to understand how they learned about crises, how much time they had to prepare/use their assets to prepare
   - If feasible, the moderator will seek to determine the cost/value of losses.
   - The moderator will delve into questions of type of housing to determine which construction, roof, locations are relatively more resilient.
   - The moderator will specifically ask which financial services are used or not, and how well they respond.
   - The moderator will enquire as to what kinds of financial services they would like to have to assist with shocks.
   - The moderator will take notes on each of these key questions and report the responses in as much detail as possible for each.

Key Informant Interview Guides

The following interview guides provide an overview of the questions to be asked. Questions will be probed as needed or refined as additional information emerges from the literature review or prior key informant interviews.

Background questions (for all)

Note: if feasible research this from secondary sources and/or via email prior to meeting.

1. Role and responsibilities within their organization
2. Organization's objectives with regards to climate change mitigation, climate resilience, climate finance
3. Policies, programs, regulations implemented to date by your organization.
4. Results of these policies, programs, regulations to date
5. Major challenges in implementation (probe on communication).

Government/Donors/NGOS:

1. What are the greatest climate risks faced by Mozambique households? How is the changing (frequency, intensity)
2. What, in your experience, are the greatest challenges for households in dealing with climate ? (Details, probe about gender/youth/vulnerable groups)
   a. Please provide any data or reports available on climate events in Mozambique and/or impact on households or the economy.
3. To your knowledge, what support have these households been able to access in the past (from your own organization or others)? Has it been sufficient? What other means do households rely on to survive the major event?
4. What are the most important climate and/or climate finance initiatives implemented or currently underway in Mozambique? To date, have you seen any practical impact on households, businesses to in terms of mitigation and/or resilience? (Details, probe about gender/youth/vulnerable groups)
5. (Where applicable) What efforts have you seen on the part of the financial sector to support households in managing climate crises? Have they been sufficient?
6. (Where applicable) What do you see as the major challenges faced by financial institutions in offering services which help households in these events?
7. Have you seen any good examples from other countries which might be emulated in Mozambique?

Bank of Mozambique (BM):

1. What are BM's objectives with regards to climate change mitigation, climate resilience and/or climate finance?
2. What are the most important policies, programs, regulations implemented to date with regards to climate?
3. What is the role of BM as the regulator in this space?
4. What have been the results to date?
5. How does BM see the role the financial sector in responding to the climate challenges which face Mozambique?
6. What is the importance of financial services in permitting Mozambican households and private sector to manage climate shocks?
7. Which are the priority initiatives implemented or currently underway toward building capacity within the financial sector to support households and private sector to manage climate shocks? How effective have they been to date? What is planned for the future?

a. Is there any difference in approach or results for segments such as women/youth/vulnerable groups?

8. Which financial institutions are proving to be the most innovative?
9. Discussion of some examples from other countries and how applicable they could be in Mozambique.

Financial Institutions:

1. How have recent climate shocks affected your clients/institution? Which ones have had the greatest impact?
2. Were you able to support your clients in managing or recovering from the crisis? How? Which segments received the most attention?
3. Did anyone else support your clients (government, donors, NGOs)?

a. Which segments were most supported?
b. How effective were they (Detail)
c. Did they coordinate with your financial institution? How?

4. What products and services do you currently offer to support your clients in managing climate shocks?
   a. Which segments are they targeting?
   b. How has been the demand?
   c. Have they been responsive to your clients' needs?
   d. What are the challenges in offering and/or expanding these services?
5. What do you see as the greatest risks moving forward? How are you preparing?
6. Do you participate in any sector-level discussions on climate finance? Which ones, and what do you see as the most successful or promising?
7. Provide some examples of successful initiatives in other countries. Do you feel that this would be feasible in Mozambique? Would your financial institution be potentially interested in developing similar products? If yes, what would you require?

Annex 3 List of interviewees

Focus Group Guides

AFI's Inclusive Green Finance: A Survey of Policy Landscape
Focus Groups will use a set of instruments adapted from MicroSave financial services research instruments to address key questions in the research framework in Section 2.1.

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Annex 4 Research Framework

Research Topic	Key Questions	Sources
What are the major climate events affecting households in Mozambique and how do households perceive these?	• What are the major climate events which have affected Mozambique? • With what frequency do they occur, and is this changing? • How many different events have households faced simultaneously or within a span of less than five years? • How are climate events viewed by households in terms of priority of crises to be managed? • Does this differ by gender, age, and gender of household head, impairment/disability?	Lit review KIIs FGDs
How are these events affecting households?	• What are the impacts felt in terms of income, assets, security, livelihood potential, health, safety? • How do these differ by gender, age and gender of household head? Do people with impairment/disability face specific impacts? • Is there any difference in the impacts on assets under women's control or under men's control within a household? • Can they be quantified? • Do households perceive that shocks are increasing in frequency or severity? Do they feel that they need to adjust their current behavior to adjust? • Did women face any specific risks or challenges (such as GBV, difficulty in accessing government assistance, etc?)	FGDs
What climate adaptation and resilience mechanisms are available to households?	• How do households learn about impending climate shocks? Which information channels do they use? How much warning do they have? • What are coping mechanisms? What resources are assets are utilized? • What support is being offered and how effective is it?	Lit review FGDs
What financial services are available and how well do they respond?	• What financial services are used? • What else is needed? • How does this differ by gender, age and gender of household head, impairment/disability? • Which financial services are available in the target markets? • Which services are known to the populations? • Which services are used? • Which ones have the greatest contribution to resilience? Why? • Does this differ by gender, age, and gender of household head, impairment/disability ?	Lit review KIIs FGDs
What international practices could inform financial services in Mozambique?	• What are examples of financial services which have successfully improved climate resilience in similar markets? • Are there examples of other solutions – outside of financial services – which have had important impacts (such as nature-based solutions, housing)? • Is there data available as to what has worked efficiently for men, women, youth? • Are they any linkages yet between climate finance work being done at policy/regulation-level and mitigation efforts in Mozambique or other countries? • How could they be adapted to the context of Mozambique? • What would be required? • Is it possible to assess the business case? • What are likely challenges and potential opportunities	Lit review KIIs Workshop

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