Mozambique Cyclone Idai
Post Disaster Needs Assessment

Conference Version
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FOREWORD

The negative impact of climate change is now a growing reality for Mozambique, a situation which must be considered now and into the future. The country is frequently ravaged by cyclones, floods or drought, and the cyclones and floods of 2019 were the most devastating in recent history in terms of its human and physical impact as well as its geographic extent. A total of 64 districts and 19 counties were directly affected, but almost the entire country suffered from its adverse socio-economic effects.

The disaster interrupted the delivery of basic services such as water and electricity, it damaged roads and bridges that are essential for commercial activity, and destroyed houses, shops and other buildings. Cyclones Idai and Kenneth, with gusty winds ranging from 180 to 220 km/h accompanied by heavy rainfall, also had a huge social impact, causing the death of more than 650 people and directly affecting about 2 million people in the provinces of Sofala, Manica, Tete, Zambézia, Inhambane, Cabo Delgado and Nampula.

Considering this serious situation, the Government of Mozambique declared a State of National Emergency and mobilized internal and external resources including specialized search and rescue forces for saving hundreds of thousands of people at risk and subsequently hosting them in temporary shelters with food and first aid. At the same time, the Government of Mozambique requested external partners to support with an assessment of the damage and loss caused by these extreme events, as well as an assessment of reconstruction and recovery needs for all the economic and social sectors in the affected areas.

The post-disaster assessment was conducted under the leadership of the Government, through the Post- Cyclone Idai Cabinet for Reconstruction, and supported by a global partnership that included the World Bank, the United Nations System and the European Union (EU), using the internationally recognized Post-Disaster Needs Assessment (PDNA) methodology. This assessment counted on the participation of more than one hundred government staff members from all affected regions, who participated in the training program on the use of this methodology.

This assessment estimates that Cyclone Idai caused about 1.4 billion US dollars in total damage, and 1.39 billion US dollars in losses. The total cost of recovery and reconstruction is estimated at 2.9 billion US dollars for the 4 provinces of Sofala, Manica, Tete and Zambezia. The additional needs in Inhambane which was also affected by Idai and in Cabo Delgado and Nampula which were affected by cyclone Kenneth, raise the total recovery needs to 3.2 billion USD.

The Government is aware that it cannot avoid the occurrence of these extreme weather events, but recognizes the need to improve the quality of construction to make them more resilient to future events, in all recovery projects and in all aspects of people's lives and livelihoods.

I would like to express my gratitude to the international and national organizations, namely the World Bank, the European Commission, the African Development Bank, the UN Resident Coordinator's office, UNDP, FAO, WFP, UNFPA, UNICEF, WHO, UN-Habitat, ILO, OIM, UN Women, UNAIDS, USAID, among other organizations that have directly and indirectly supported us. The feeling of gratitude is also extended to the ministries of the Central government, the provincial, district and municipal governments of the affected areas, private sector entities through CTA, and the business sector of Beira through the ACB, for their contribution in the realization of the PDNA.

Francisco Pereira
Executive Director
Post- Cyclone Idai Cabinet for Reconstruction

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ACRONYMS

CTGC	Technical Council for Disaster Management
CCGC	Coordination Council for Disaster Management
CENOE	National Emergency Operations Center
CLGRC	Local Disaster Risk Management Committees
CLTS	Community Led Total Sanitation
CRA/AURA	The Water Services Regulatory Authority
DDR	Demobilization, Disarmament and Reintegration
DFID	Department for International Development UK
DPGCAS	Provincial Directorate of Gender, Child and Social Action
DRR	Disaster Risk Reduction
EDM	Electricidade de Moçambique
EU	European Union
EWS	Early Warning System
FFH	Female-headed Households
FDI	Foreign Direct Investment
FUNAE	Energy Fund of Mozambique
GBV	Gender Based Violence
GDP	Gross Domestic Product
GoM	Government of Mozambique
HDI	Human Development Index
ICH	Intangible Cultural Heritage
IDP	Internally Displaced People
ILO	International Labour Organization
INAS	National Institute of Social Action)
INE	National Institute of Statistics
INGC	National Institute for Disaster Management
IPC	Integrated Phase Classification
MAEFP	The Ministry of State Administration and Public Function
MCTESTP	Ministry of Science and Technology, Higher Education and Vocational Training
MGCAS	Ministry of Gender, Child and Social Action
MINEDH	The Ministry of Education and Human Development
MITADER	Ministry of Environment, Land and Rural Development
MOPHRH	Ministry of Public Works, Housing and Water Resources
NGO	Non Government Organization
PASP	Public Works Programme
PDNA	Post-disaster Needs Assessment
PDPMCN	Master Plan for the Prevention and Mitigation of Natural Disasters
PHAST	Participatory Hygiene and Sanitation Transformation)
PNDT	National Territorial Development Plan
PREPOC	Post-Cyclone IDAI Recovery Program
PSSB	Basic Social Subsidy Program
SAPP	Southern Africa Power Pool
SASB	Beira Sanitation Autonomous Service
SETSAN	Mozambique Technical Secretariat for Food Security and Nutrition
UNAPROC	National Civil Protection Unity
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WMO	World Meteorological Organization
WFP	World Foof Programme
World Bank	The World Bank

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Following **Cyclone IDAI,** the Minister of Economy and Finance, on behalf of the Government of Mozambique (GoM), requested technical assistance from the World Bank (WB) on March 27 2019, through the Global Facility for Disaster Reduction and Recovery (GFDRR) to undertake a post-disaster needs assessment (PDNA) to support the country's recovery process. In accordance with the PDNA protocols, the request was extended to the other tripartite partners, the European Union (EU) and the United Nations (UN). The PDNA, led by the GoM, was conducted between April 16 and May 2nd 2019 by a team of experts from Government Ministries with support from the United Nations agencies, the World Bank, the European Union, the African Development Bank and other development partners. The present report incorporates the results of the PDNA exercise in Sofala, Manica, Zambezia and Tete. This report was submitted to the GoM on May 15 and will be shared with guests attending the pledging conference scheduled for May 31st and June 1st 2019.

Fig. 1: Path of Cyclone IDAI and KENNETH

Tropical Cyclone IDAI made landfall on the night of 14 to 15 March near Beira City, Sofala Province, in central Mozambique. The Cyclone brought strong winds (180 – 220 km per hour) and heavy rain (more than 200 mm in 24 hours) across the provinces of Sofala, Manica, Zambezia, Tete and Inhambane, causing rivers to overflow with flood waters reportedly rising above 10 meters. IDAI also brought a large storm surge in the coastal city of Beira and surrounding areas of Sofala province.

An estimated 3,000 sq. km of land and 715,378 hectares of cultivated land were flooded by IDAI. As of the end of April, 400,000 had been displaced, of which 160,927 were sheltering in 164 temporary accommodation centers across the four provinces. It is estimated that over 13.5 million people lived in the four provinces of Sofala, Manica, Zambezia and Tete, out of which **more than 1.5 million have been affected**, over 1600 injured and more than 600 people died. **An estimated 750,000 are in need of urgent assistance.** About 53% of those in urgent need are women, 47% are men, 254,000 are children under 18 years of age, and 63,000 are over 60 years of age.

On 25 April, Mozambique experienced a second Tropical Cyclone, Kenneth, which made landfall in between the districts of Macomia and Mocimboa da Praia in Cabo Delgado province. With wind gusts of up to 220km/h, Kenneth became the strongest cyclone to ever hit the

African continent. Kenneth made landfall at the end of the rainy season, when river levels were already high, increasing the risk of river flooding. The latest reports estimate that about 18,029 people have been displaced. The GoM has requested a separate addendum for the provinces affected by Kenneth, Cabo Delgado and Nampula; and a fifth province affected by IDAI, Inhambane. See Annex 3.

DISASTER CONTEXT

Before Tropical Cyclone IDAI struck Mozambique, the country was already facing high levels of food insecurity. Agricultural productivity and production for the 2018-2019 main season was already expected to be quite low due to drought conditions in many southern and central areas of the country (coinciding with the same provinces most affected by cyclone IDAI). Between September and December 2018, 1.78 million people were severely food insecure in the country, according to the Integrated Phase Classification (IPC) and Mozambique's Technical Secretariat for Food Security and Nutrition (SETSAN).

Cyclone IDAI also arrived at a time when important events and processes were expected to unfold in Mozambique during the course of 2019, namely the general elections to be held in October 2019, the new decentralization package of agreements, a peace process between the Government and Renamo, and the process of Demobilization, Disarmament and Reintegration (DDR). The nature and national scope of these processes, as well as the time limits for achieving them, make them especially sensitive in the post-disaster context left by IDAI. Moreover, these are vital for the country's stability, and particularly for the consolidation of peace and democracy in Mozambique.

Furthermore, **Cyclone IDAI made landfall in the ninth country with the lowest human development index (HDI) in the world** (0,437), ranking 180th among 189 countries.[1] Life expectancy is 59, the infant mortality rate is 67.3, maternal mortality stands at 452, and the illiteracy rate stands at 39% (males 27%; females 49%). Moreover, the country's poverty headcount is 46 percent in 2014/15, although it rises to 56% in rural areas.[2] In the four provinces most affected by cyclone IDAI the poverty rate is higher: 62% in Zambezia, 50% in Sofala, 42% in Tete, and 35% in Inhambane.[3]

The agricultural sector was severely affected in the Central Region, and the sector accounts for 25 percent of the GDP and employs 71 percent of the labor force. Almost 94 percent of the poor are primarily engaged in agriculture.[4] The pre-existing socio-economic conditions in Mozambique show that Cyclone IDAI took place in a context of high vulnerability, conditions that are likely to exacerbate poverty among the affected population.

1 UNDP. Human Development Indices and Indicators 2018 Statistical Update. 2018
2 Ibid
3 WB, Mozambique Poverty Assessment, no date.
4 World Bank. Mozambique Poverty Assessment. 2018

THE IMMEDIATE RESPONSE

Following Cyclone IDAI, the Government of Mozambique immediately implemented a series of actions in response to the unfolding disaster.

- Declared a National Sate of Emergency on 19th March 2019
- Implemented immediate search and rescue operations, and provided humanitarian aid
- Made an appeal for international assistance
- Established a post-Cyclone IDAI Recovery Program (PREPOC) on 26 March;
- Approved the Terms of Reference of the PREPOC on April 2, 2019;
- Approved the creation of the Post-Cyclone Reconstruction Office on April 09, 2019;
- Extended the Scope Assessment for Cabo Delgado and Nampula Cyclone following Cyclone Kenneth, on April 30, 2019
- Trained staff of Ministries / sectors on the PDNA methodology and calculation of damage, loss and recovery needs. This training included the central, provincial, district and municipal levels.
- Conducted the PDNA; Approved by the Council of Ministers on May 7th;
- Developed the Final Report of the PDNA, to be presented for Approval by the Council of Ministers;
- Plans to hold a Pledging Conference to be held on May 31st -June 1st 2019.

In parallel the international community has mobilized to support the GoM and communities affected by Cyclone IDAI. The United Nations issued an international appeal for assistance in the amount of USD$281.7 million, and revised the country's humanitarian response plan. The UN and NGO community also undertook a Multi-sector Initial Rapid Assessment (MIRA) to inform the humanitarian response. The WB, EU, UN agencies, INGOs and other partners are working with the GoM to provide humanitarian and early recovery support to Mozambique.

THE EFFECTS OF IDAI AT A GLANCE

Table 1 and Fig. 2 summarize the main effects of Cyclone IDAI, particularly the number of people affected by the Cyclone, as well as the damaged or destroyed houses, schools, health facilities, cultural centers, livestock, irrigation systems, businesses, water and sanitation facilities, energy and transport infrastructure.

Table 1: Total population by province, and number of affected people by province

	Population (2019)	Affected population (2019)	% of total
Zambezia	5 164 732,0	6 035,0	0,1
Tete	2 648 941,0	54 721,0	2,1
Manica	1 945 994,0	262 890,0	13,5
Sofala	2 259 248,0	1 190 596,0	52,7
Inhambane	1 488 676,0	422,0	0,0
Affected Provinces	**13 507 591,0**	**1 514 662,0**	**11,2**
Mozambique	**27 909 798,0**	**0,1**	**5,4**

Source: INE 2019; INGC database 2019

Fig. 2: Effects of Cyclone IDAI at a Glance

AGRICULTURE	FISHERIES	LIVELIHOODS
433,056 affected households need seed assistance	116,476 M2 of fish tanks affected	Over USD$ 39 milion in income was lost due to unemployment
9,710 animal deaths	1,728,800 avelinos lost	
4.9 million animals need vaccines	2,044 fishing vessels destroyed	
4,309 ha of irrigated land needs rehabilitation		

WATER & SANITATION	ENERGY	TRANSPORT
71,450 damaged latrines affected in rural areas	Destruction or damage to:	Damaged 3,490 km of national roads, 29% of total
118,600 damaged latrines in urban areas	2 generation plants 90 MW	20 bridges affected
	1345 Km of transmission lines	39% of the national rodoviária network damaged
	10216 Km of distribution lines and 30 substations	Significant damage to railroads, with effects on internal trade
	4000 transformers	

HOUSING	EDUCATION	HEALTH	CULTURE
240,000 houses were partially or totally destroyed	1372 schools affected	89 health facilities partially destroyed	10 cultural centers severely damaged
	4,219 classrooms Affected	3 health facilities completely destroyed	15 historic buildings severely damaged
		2 health training facilities were partially destroyed	

DAMAGE AND LOSS SUMMARY

Table 2 presents a summary of the damage and loss estimated by the PDNA for the four provinces affected by IDAI: Sofala, Manica, Tete and Zambezia. **The damage caused by IDAI is estimated to be over USD$ 1.4 billion in total**, which reflects the cost of replacing infrastructure and physical assets. The bulk of the damage fell heavily on the transport sector valued at USD$442 million, followed closely by the housing sector estimated at USD$411 million worth of damage. The third sector to suffer heavy damage is industry & commerce which saw USD$140 million in damage, followed by the energy sector where damage is valued at USD$133.5 million. Damage was relatively lower yet still significant in the environment sector at USD$80 million, and for the agriculture sector with USD$48 million.

Total losses equal USD$1.39 billion, which reflect the changes in economic flows to full recovery including lost income in the production of goods and services and additional costs to re-establish production. The agriculture sector suffered the most losses with USD$513 million, followed closely by industry & commerce which suffered USD$470 million in losses. The transport and health sectors saw losses in the order of USD$153 million and USD$ 109 million respectively.

Table 2: total damage and loss by sector and sub-sector (USD millions)

Sectors	Damage			Loss		
	Public	Private	Total	Public	Private	Total
TOTAL	**748,9**	**660,9**	**1409,8**	**180,0**	**1205,8**	**1385,8**
Produtive	14,2	190,4	204,6	0,0	986,6	986,6
Agriculture	14,2	33,6	47,8	0,0	512,6	512,6
Fishery	0,0	16,7	16,7	0,0	4,0	4,0
Ind. And Comm.	0,0	140,1	140,1	0,0	470,1	470,1
Social	97,8	411,9	509,7	121,9	61,8	183,7
Housing	0,0	410,5	410,5	7,6	61,7	69,3
Education	14,7	0,3	15,0	5,5	0,1	5,5
Health	80,4	1,1	81,5	108,9	0,0	108,9
Food Security	0,0	0,0	0,0	0,0	0,0	0,0
Culture and Sports	2,8	0,0	2,8	0,0	0,0	0,0
Infraestruture	534,2	56,0	590,2	56,0	150,2	206,3
Transport	391,7	50,0	441,8	5,3	147,5	152,8
Energy	133,5	0,0	133,5	47,9	0,0	47,9
Telecomunications	0,0	0,0	0,0	0,0	0,0	0,0
Agua/San	8,9	6,0	14,9	2,9	2,7	5,6
Cross-cutting	102,7	2,6	105,3	2,1	7,2	9,3
Gender	3,0	0,0	3,0	0,0	1,2	1,2
Environment	77,7	2,1	79,8	2,1	1,3	3,4
Governance	11,9	0,0	11,9	0,0	4,7	4,7
DRR	10,0	0,5	10,5	0,0	0,0	0,0
Livelihoods	0,1	0,0	0,1	0,0	0,0	0,0
Social Protection	0,0	0,0	0,0	0,0	0,0	0,0

THE HUMAN IMPACT

Multidimensional Poverty

Multidimensional poverty documents indicators of change in access to health, education, housing, and others to create an overall index of well-being. In Mozambique multidimensional poverty is currently at 46%,[5] while inequality has been increasing.[6] In the case of the affected provinces, the multidimensional poverty rates before IDAI were 63% in Zambézia, 55% in Tete, 39% in Manica, and 36% in Sofala. Multidimensional child poverty was also concentrated mainly in the Central region (51.2%) compared with 15% in the South, and in rural areas (58%) compared with urban areas (19%).[7]

The impact of IDAI will increase multidimensional poverty in Mozambique. About 1.5 million people were affected by Cyclone IDAI, which represents approximately 11.2% of the total population in the four affected provinces. Table 3 summarizes the multiple deprivations now facing the population in the four provinces affected by Cyclone IDAI. The loss of housing will greatly affect multidimensional poverty since 4 out of 17 (25%) of the indicators relate to housing. Of equal concern is the simultaneous loss of all household goods and productive assets, which in terms of monetary value are proportionally higher than building costs. For families that have lost everything at once, finding the necessary financial and material resources to simultaneously rebuild housing, replace domestic items, and rebuild livelihoods, will be extremely challenging and will take time.

5 Forthcoming GoM-UNICEF-WIDER, 2019. Multidimensional Child Poverty in Mozambique.

6 MEF. 2016. Pobreza e Bem-Estar em Moçambique: Quarta Avaliação Nacional (2014/15).

7 Forthcoming GoM-UNICEF-WIDER, 2019.

Table 3: Summary of the human impact of Cyclone IDAI

SECTOR	HUMAN IMPACT
Farming Livelihoods	433,056 farming families require seed starter kits, equivalent to 2.1 million people.
Employment	Over USD 39 million in income was lost due to unemployment
Housing	240,000 households had their homes totally or partially destroyed
	237,789 families were displaced
Health	6,627 cases of cholera reported thus far
	14,863 cases of malaria and rising
	75,000 pregnant women among the affected, and 45,000 live births are expected in the next 6 months
	83,000 affected women are lactating during the first year after birth
	There has been a 50% decrease in HIV consultations
	At least 7,000 women in reproductive age are at risk of suffering rape
Education	The destruction of schools is impacting more than 382,717 students, and 9,616 teachers
	Only 40% of the rural schools have water and sanitation facilities
Water	211,000 People have restricted water access
Sanitation	The population reporting open defecation went up from 23% to 46% in the 14 hardest hit districts
Food security	1,359,159 individuals require emergency food assistance
	Food consumption of staples has been reduced by over 50%
Nutrition	130,000 pregnant and lactating women are at risk of moderate malnutrition
	100,000 Children 6-59 months are at risk of acute malnutrition
Poverty	64% Poverty rate, may rise to 79% in affected areas

Vulnerable Groups

Although the impact of the cyclone is widespread in affected areas, there are particular social groups that demonstrate especially high levels of vulnerability. This section identifies these groups, and calls attention to necessary considerations for their recovery.

Women: Mozambique ranks 139th out of 159 countries in the UNDP Gender Inequality Index.[8] Low levels of education, high maternal health risks, pressure to marry at a young age, high levels of teenage pregnancy,[9] limited economic prospects, gender-based violence, and accepted cultural norms contribute to the precarious status of women and girls in the country. The impact of the cyclone has a differential impact on women and girls. There is an elevated risk of Gender-Based Violence.[10] At least 7,000 women in reproductive age are at risk of suffering rape in the next six months.[11] This is a direct result of greater exposure of women and girls to distant and unsafe locations, such as water collection points, sanitation facilities and health centers. With the destruction of health facilities, pregnant women have limited access to safe deliveries. It is estimated that over 75,000 cyclone-affected women are pregnant, with over 45,000 live births expected in the next six months, and 7,000 of those could experience life-threatening complications.[12]

The recovery burden is particularly difficult for female-headed households (FHHs), including widows, who are both the income provider and main caregiver. They face difficulty in being able to simultaneously rebuild homes, serve as the primary caregiver, and rebuild their livelihoods.[13] Without possessions, livelihoods, poor access to services and marginalization **there is a significant possibility that the feminization of poverty will increase in Mozambique.**

Children: in Mozambique children are among the most deprived children in the world. Children constitute more than half of the 28 million population.[14] It is estimated that 6.1 million households are headed by children (12-14 years).[15] There are about 2 million orphans and vulnerable children.

Older people: a Rapid Needs Assessment of Older People[16] in Sofala found that, safety and

8 UNDP Human Development Reports, 2015, http://hdr.undp.org/en/composite/GII.

9 https://www.unicef.org.mz/wp-content/uploads/2015/07/EN_Statistical_Analysis_Child_Marrige_Adolescent_Pregnancy_aw-Low-Res.pdf

10 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

11 Estimates from UNFPA 2019.

12 UNFPA calls on world to protect women in cyclone-affected Mozambique. https://reliefweb.int/report/mozambique/unfpa-calls-world-protect-women-cyclone-affected-mozambique

13 CARE. 2019. Rapid Gender Analysis. Cyclone IDAI Response, Sofala Province, Mozambique.
Photo Credit: Tina Kruger / Oxfam Novib

14 The 2017 Census

15 INE. 2017 Census results. http://www.ine.gov.mz/iv-rgph-2017/mocambique.

16 HelpAge International, Initial findings - Rapid needs assessment of older people Cyclone IDAI - Sofala province, Mozambique, April 2019.

security was the third priority of older people in temporary shelters. The assessment also found that 90% of the elderly respondents were food insecure in large part because they do not have any income, and a third of them have had to borrow money since the cyclone. Almost half depend on family or friends to meet their basic needs, while 81% care for an average of five dependents. There are estimates that over 75% of affected older people in Sofala and Manica provinces require urgent assistance.[17]

People with disabilities: between 2%[18] and 6%[19] of the total population and 14% of children aged 2-9 years[20] live with a disability, though this is likely an underestimate. 70% of children with disabilities live in rural areas.[21] In humanitarian contexts, adults and children with disabilities are more likely to be left behind and be separated from their caregivers and family members and face higher risks of violence, exploitation and abuse. Women and girls with disabilities are more vulnerable to violence and exploitation. Light for the World estimates that 111,000 people with disabilities have been directly affected by the disaster.

People living with HIV: people living with HIV (PLHIV) are particularly vulnerable in crises due to breaks in their treatments, and damage to health facilities and medical supplies or the absence of health personnel. Almost 8,000 pregnant women affected by the cyclone are HIV+. Therefore, their babies are at risk of being born with HIV. Children living with HIV are more likely to experience abandonment and/or neglect and face separation from extended family and primary care givers. As a consequence of the loss of livelihoods, there may be an increase in sex work and survival sex, which greatly increases the chance of HIV transmission and abuse.

Internally displaced people: As of the end of April, 400,000 had been displaced, of which 160,927 were sheltering in 164 temporary accommodation centers across the four provinces. The resettlement and relocation of Internally Displaced People (IDP) influences the future drivers of inequality and the sustainability of recovery efforts. For example, the MRA reports that 49% of the assessed locations reported an increase in concerns about personal safety since the cyclone. This includes a reference to the lack of police, assault and theft.[22] Relocated families are at risk of losing access to their land. This is particularly true for FHH, which are unable to send members back to their home areas to protect their belongings and land.

The Poverty Rate

The country's poverty headcount is 46 percent as of 2014/15, although poverty in rural areas is higher at 56 percent. The poverty rate in the four provinces most affected by cyclone IDAI is higher, at 62% in Zambezia, 50% in Sofala, 42% in Tete, and 35% in Inhambane.[23]

Changes in income poverty will play out over the coming years. Disasters have the capacity not only to maintain people in a poverty trap, but also to push people into poverty. For example, Cyclone Jokwe, which hit Northern Mozambique in 2008 and was not as powerful as IDAI,

17 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

18 INE. 2017 Census results. http://www.ine.gov.mz/iv-rgph-2017/mocambique..

19 INE, FAMOD & SINTEF (2009). Living conditions among people with disabilities in Mozambique: a national representative study, National Institute of Statistics, Maputo, Forum of Associations of Disabled People in Mozambique, Maputo, & SINTEF Health Research, Oslo. Table 4, page 31.

20 National Institute of Statistics (INE). Multiple Indicator Cluster Survey. 2008. Table 11.7, page 113.

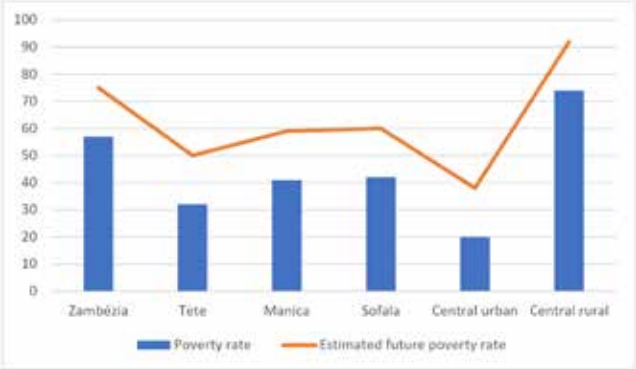
21 Child Protection Area of Responsibility, Child Protection Risks and Needs in Mozambique: Secondary Data Review, April 2019

22 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

23 Ibid

increased the poverty headcount by 17.5%.[24] Fig. 3 projects potential future rates of poverty based on these past estimates. **It is estimates that the poverty rate may rise to 79% in affected areas, up from 64%.** The consequences of IDAI are liable to set back significantly development gains made over the last decade in Mozambique.

Fig. 3: The projected poverty rate resulting from Cyclone IDAI



THE MACROECONOMIC IMPACT

The Impact on Economic Growth 2019-2020

Cyclone IDAI has directly affected aggregate supply through the destruction of productive capacity, mainly in agriculture, trade, transport, manufacturing and services. The preliminary data available suggests that **there will be less pronounced growth in the following sectors**:

Agriculture: with the large-scale impact on agriculture, the growth of the agricultural sector is expected to fall to 2.0% in 2019, compared to 3.5% in 2018. This growth will come from production and productivity in other regions of the country, as well as from the expected positive effects of the second agricultural season of 2018/2019.

Industry:[25] The sector's economic growth rate is expected to be maintained at around 4.5% by 2019, driven largely by the boost of the extractive sector combined with the expected positive effect on the electric power sector and the reconstruction of infrastructure. The combination of these factors may mitigate the negative impact of cyclone IDAI on the country's manufacturing industry.

Services: The growth of the services sector is expected to slow to 1.7% in 2019, down from 2.4% in 2018, due to the destruction of infrastructure in the transport, communications, trade and tourism sectors. The port of Beira was paralyzed for a few days, and transportation and communications services were interrupted.

24 WB, Extreme Weather and Poverty Risk Evidence from Multiple Shocks in Mozambique, 2018

25 Indústria inclui a manufatura, construção civil, extractivo e distribuição de energia, água e gás.

Table 4: Projected GDP Growth in 2019

Branch of activity	2016	2017	2018	2019		
	Real	Real	Estimated	Law	Act. March	Pre Pos Idai
1. Agriculture. Animal production. Hunting and forest	3,1	4,5	3,5	5,5	4,0	**2,0**
2. Fishing	4,5	2,6	3,5	6,0	4,5	4,5
3. Extractive industry	22,5	40,8	11,7	14,0	13,0	13,0
4. Manufacturing industry	8,5	0,3	2,5	3,1	3,0	3,0
5. Electricity water and gas	12,2	-7,8	0,0	2,0	1,0	1,0
6. Construction	12	-12,4	-1,2	3,5	0,5	**1,0**
7. Trade and services	4,4	1,5	2,5	2,6	3,0	**1,0**
8. Hotels. Accommodation. Restoration and similar	8,2	0,8	2,7	3,5	3,0	3,0
9. Transport and storage. Information and communication	7,6	4,3	3,0	2,8	2,0	2,0
10. Financial services and Insurance	5,9	1,1	1,8	2,0	2,0	2,0
11. Public administration. Defense and Social Security	14,8	2,9	5,1	4,5	5,5	5,5
12. Education	7,4	2,6	6,1	5,0	7,0	7,0
13. Human health and Social action	10,2	2,7	2,8	4,5	3,0	3,0
14. Other Services	5,4	1,9	0,3	3,0	1,0	1,0
GDP Growth rate	**6,6**	**3,7**	**3,3**	**4,7**	**3,8**	**2,5**

The preliminary forecast points to a slowdown in real GDP growth to 2.5% in 2019, compared with a planned growth of up to 4.7% in 2019. This preliminary estimate considers that the central region of the country has a weight of 30% in the Mozambican GDP[26] and it is assumed that the supply shock due to Cyclone IDAI has caused a fall of more than 60% of the productive capacity in that region of the country.

A recovery in economic activity is expected for 2020, with a forecast of 3.9% economic growth, reflecting the positive effects of the Reconstruction Plan in the central area of the country. The cost of recovery from cyclone IDAI has been estimated by the PDNA to be USD $2.9 billion

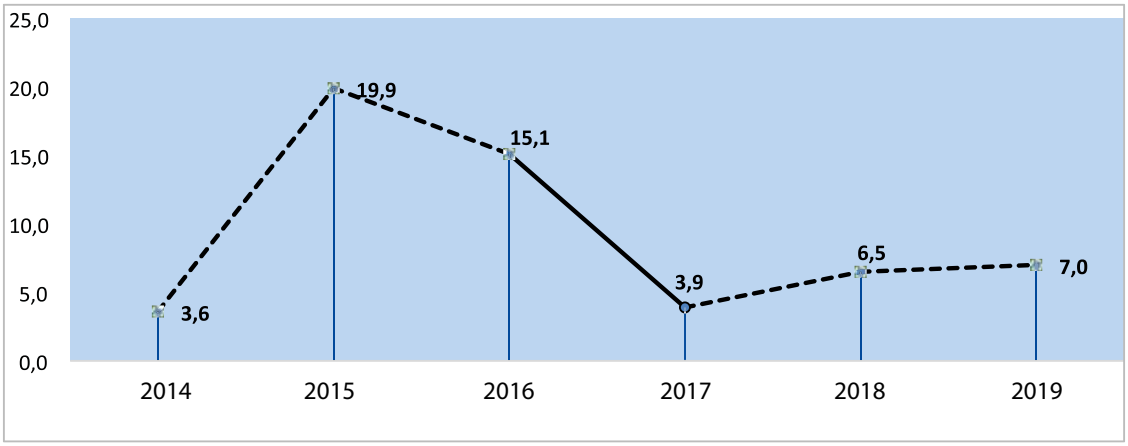
26 Média dos últimos 5 anos calculado com base nos dados do INE.

The Impact on Inflation in 2019

The supply shock caused by IDAI will generate pressure on prices in the short term, which will tend to dissipate over the medium term.

Short-term effects: the destruction of crops will result in a decline in the supply of agricultural products and consequently to an increase in the price of food products in the central zone of the country. The destruction of part of the industrial park and service companies will interrupt business and the commercial network, stimulating an increase in the price of non-food products. It should be noted that food products have a weight of 33% in the Beira CPI basket and 30% in the Mozambican CPI.

Fig. 4: Mean values of projected inflation 2019-2020



Medium-term effects: As resources for rebuilding and social assistance are channeled to the affected provinces, it may create additional stimulus in aggregate demand, thus generating pressure on domestic prices. In addition, in order to meet the deficit in the supply of goods and services in the affected areas, the import of miscellaneous goods is expected to increase, which may result in a deterioration of the balance of trade. This situation could lead to a pressure on the demand for foreign currency and consequently to induce more pressure on the foreign exchange market, even if moderate, taking into account the prospects of foreign aid inflows to mitigate the effects of the disaster.

Given the combination of these effects, annual inflation for the band is expected to accelerate from 6.0% to 8.0% by the end of 2020, against the previous projection of 6% to 7%. Despite this slight upward revision, inflation is expected to remain in the single-digit. It should be noted that the city of Beira has a weight of 18.9% in the overall inflation of the country. The acceleration of prices in the city of Beira may be attenuated by the price stability that occurs in the cities of Nampula and Maputo which together have an aggregate weight of 81.1% in total inflation. Another consideration is the planned distribution of seeds that have short maturation to accelerate agricultural recovery.

The disaster will have a significant impact on the overall growth and inflation prospects of the country in the short and medium term and can condition the conduct of monetary policy, as shown in the table below.

Table 5: The projected evolution of key macroeconomic indicators

Macroeconomics indicators	2015	2016	2017	2018	2019		
	REAL			Est.	Law	Act. March	Pre Pos Idai
RIL (import coverage months)	5,91	4,19	6,81	6,28	6,0	5,4	**5,3**
Annual average exchange rate (MT/USD)	38,3	63,1	63,9	60,9	60,5	62,0	**64,0**
Exports (million USD)	3,413	3,328	4,725	5,196	5,160	5,591	**5,479**
Foreign direct investment (million USD)	4,034	3,093	2,293	2,692	5,769	2,796	**3,177**

In general, the effect of monetary policy measures on a temporary supply shock such as that caused by cyclone IDAI is limited. In other words, the monetary policy instruments are inefficient to mitigate the effects of this type of shock. This was a supply shock that affected a specific region of the country. In this context, the evolution of consumption, business confidence and expectations of economic actors beyond the short-term horizon will be the subject of continuous monitoring by the Central Bank, given the potential impact of these indicators on growth and inflation projections over the medium term.

RECOVERY NEEDS

Recovery needs estimated by the PDNA amount to USD 2.9 billion which reflect the necessary interventions to repair or rebuild infrastructure and physical assets with improved measures in line with the principles of building back better and disaster risk reduction to ensure future resilience. These needs also include the additional costs that need to be incurred to recover the production of goods and services and access to goods and services.

Table 6: Total Recovery Needs

Sectors	Needs
TOTAL	**2,944.8**
Productive	380.4
Agriculture	203.9
Fishery	15.5
Ind & Com	161.1
Social	1,373.1
Housing	687.6
Education	122.3
Health	202.4
Food Security	353.7
Culture & Sports	7.0
Infrastructure	939.7
Transport	598.2
Energy	201.4
Telecom	33.9
Agua/San	106.2
Cross-Cutting Issues	251.5
Gender	5.3
Environment	106.3
Governance	18.4
DRR	15.5
Livelihoods	57.8
Social Protection	48.3

Further, the identified needs include costs to maintain governance and decision-making processes as well as to reduce vulnerabilities and risk, which is incorporated within each sector. Therefore, sectors have included capacity building, technical studies required for recovery interventions, and costs to ensure social protection and security to the affected population.

The largest needs appear in the housing sector with a total amount of USD 688 million, followed by transport with USD USD 598 million and food security with USD 354 million. The productive sectors would require USD 380.4 million for full recovery from IDAI, and all the crosscutting issues require USD 252 million.

In a first attempt to prioritize and sequence recovery interventions, sector teams have provided also cost estimates for a timeframe of five years, considering interventions that should take place in the short, medium and long-term, including a budget for each phase, as indicated in Table 7.

Note that not all sectors have considered the full range of needs for the proposed prioritization. Also note that it is difficult for countries to undertake the full range of recovery needs identified through the PDNA. It would be highly recommended that the country undertakes a detailed planning exercise to formulate a concrete and realistic recovery program, particularly after the donor/pledging conference, where funds for recovery would be better identified.

Fig 5: Distribution of Recovery Needs by Individual Sector

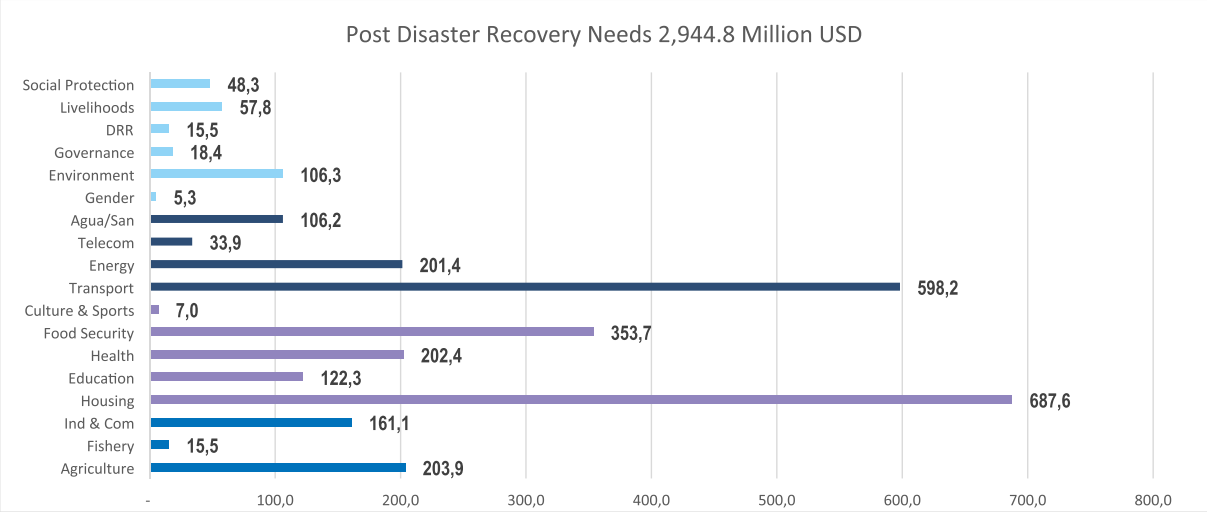


Table 7: Prioritized and Sequenced Recovery Needs by Sector

SECTOR	SHORT TERM	MEDIUM TERM	LONG TERM	TOTAL
Agriculture	116.7	64.1	23.1	203.9
Fisheries	10.1	5.4	-	15.5
Industry/Commerce	161.1	-	-	161.1
Housing	663.2	4.5	20.3	687.9
Education	115.7	7.0	4.2	126.8
Health	117.0	51.2	34.2	202.4
Culture	3.7	0.2	0.0	3.9
Sports	4.7	-	-	4.7
Water and sanitation	19.0	5.2	82.0	106.2
Transport	8.0	73.0	466.9	547.9
Telecom.	33.9	-	-	33.9
Energy	62.5	29.1	6.3	97.9
Gender	4.1	0.7	-	4.8
Environment	88.4	7.6	10.3	106.3
DRR	7.6	7.6	-	15.2
Livelihoods	53.6	4.0	0.1	57.7
Food security	-	-	-	353.7
Governance	-	-	-	18.4
Social protection	-	-	-	48.3
TOTAL	**1,469.3**	**259.6**	**647.2**	**2,796.6**

Short-term recovery refers to the interventions required to address the current crisis and prevent a further deterioration of conditions, particularly for the population affected, over the course of 2019-2020. It includes the rehabilitation of crop and livestock production, water sources to improve water availability for people and livestock, health and nutrition centers, schools, and introducing income-generation activities to support people's self-recovery. During this first phase, planning will be necessary for the reconstruction works that will take place in the next phase, such as land-use planning, the design of houses that use resilient materials and techniques, etc.

Medium-term recovery refers to the subsequent 2 years of implementation, approximately lasting 2 to 4 years. During this phase, following the necessary planning and consultation processes, it will be possible to begin the physical reconstruction of infrastructure such as houses, schools and health centers, roads, bridges, government offices, telecommunication and other damaged infrastructure.

The long-term recovery process is the final phase of implementation lasting 5 years or longer. This includes measures to reduce the risk associated with cyclones and floods, for example through the better management of natural resources such as reforestation, the introduction of water harvesting techniques, of farming technologies and practices that are more sustainable (e.g. flood-resistant crop varieties), alternative livelihoods and income-generating activities, among other measures to reduce risk and vulnerability and support adaptation in the Central Region of Mozambique. The proposed risk reduction interventions are integrated within each of the sectors as part of the proposed sectoral long-term measures, and are reflected as such in Table 7.

As Table 7 indicates, almost half of the needs are considered short-term interventions, which need to be implemented as a matter of priority, considering the country's institutional capacity and without causing imbalances in the fiscal and external sector. Modalities of implementation will be consistent with the national planning and financial institutions and are expected to be agreed with donors, guaranteeing a clear focus on addressing the disaster recovery, with full transparency and accountability and a regular monitoring and evaluation procedure reported to the public, civil society and the international partners

Recovery from cyclone IDAI will stress the country's capacity to invest and the Governments absorptive capacity as total needs identified represent around 22% of the country's GDP. The short-term needs (i.e. until 2020) would require an increase of 30% in this yearly gross capital formation.

RECOVERY STRATEGY

On 10th May 2019, the Cabinet for the Reconstruction of Post Cyclone IDAI (Gabinete de Reconstrução Pós-Ciclone IDAI) presented the principles and approach of the recovery program, which was previously endorsed by the Council of Ministers. The recovery and reconstruction program will be developed and implemented following the principles, approach, strategy, financial management and other arrangements outlined herein.

The Principles of Recovery

The following are the principles for the recovery and reconstruction program.

1. Follow one single Post-disaster Reconstruction Program that includes sectoral and local actions;

2. Build on international experiences with post-disaster recovery processes.

3. Ensure that new recovery investments are resilient to future disasters of the same nature and magnitude or greater;

4. Give priority to the defense of life, the rapid restoration of economic and productive activity and the social protection of vulnerable people;

5. Recovery will be in accordance with territorial planning instruments and local plans for adaptation and resilience to natural threats in rural and urban areas;

6. Ensure respect for the zoning plans of the territory, interdict high-risk zones and promote new urban centralities;

7. Improve the living conditions of peripheral neighborhoods, promote adequate street opening, drainage and sanitation;

8. Include flood dampening infrastructures, shelter platforms;

9. Encourage community participation in the reconstruction process.

Approach to Recovery & Reconstruction

- The preparation of the Program should be based on the detailed PDNA assessment of damage and loss caused by the Cyclone IDAI.
- The Central Government should lead the process of preparing the Post-Disaster Reconstruction Program (PREPOC), mobilize the necessary resources and establish an operational structure to direct and coordinate the implementation, monitoring and evaluation of the Program.
- The Program should actively involve all stakeholders, including: central ministries and institutions, provincial and district governments, local government; Cooperation Partners;

Multilateral development banks; United Nations agencies; Civil society; Private Sector; Socio-professional associations; Representatives of affected communities.

- The Central Government will work in coordination with the Ministries that oversee the Public Works and Finance areas, in order to achieve quick, visible and measurable results.
- The program should build on the resilient reconstruction of long-term productive, economic and social infrastructures, preceded by in-depth studies to ensure greater resistance to disasters.
- The post-disaster reconstruction program should be based on the resilient reconstruction of infrastructures and the economic and social recovery, in the medium and long term, corresponding to 2 and 5 years, respectively.
- The Program will be implemented by entities with legal and statutory responsibility already defined
- The Program will be implemented by the relevant sectors already established in the State Administration at the national, provincial and district level and also by the autarchic governance, through their integration in the Development Plans, or their extensions. These Sectors should be endowed with the human, material and financial authority, autonomy and capacity to prepare, plan, execute, evaluate and report on the progress and results of the Program.
- The Global Management of the Program, including Financial Management, monitoring and evaluation will be the responsibility of the Central Government. To this end, the Government created the Post-Cyclone Reconstruction IDAI Office established by CM Decree.
- The IDAI Post-Cyclone Reconstruction and Recovery Office should be endowed with the authority, autonomy, and human, material and financial capacity to prepare the program, review and approve plans, monitor, evaluate, audit and report Program progress and results.

Financing and Financial Management

Based on the results of the PDNA, the Government shall indicate the strategy for financing the Recovery and Reconstruction Program. The cost and financing considerations for the GoM are as follows:

1) The contribution of the Central Government through:
   a) The reorientation of the national budget;
   b) The application of fiscal benefits to support reconstruction, including the granting of payment of Taxes and Fees by assessing the financial situation of each operator;
   c) The contribution of local governments;
   d) The contribution of the private sector;
   e) The contribution of cooperation partners, including multilateral agencies;
   f) The portion of the financing gap that donors can support.

2) On 31 May-01 June 2019, the Government is organizing a Conference with Development Partners for Post-disaster Reconstruction with the participation of Multilateral and Bilateral Cooperation or Development Partners, Civil Society and the Private Sector, in order to mobilize the necessary resources to cover the financing gap.

3) The Government, the IDAI Post-Cyclone Reconstruction Office and beneficiary entities (Municipalities, Private Sector) will hold bilateral meetings with Cooperation Partners, Private Sector and Multilateral Development Banks and influential individuals, in order to mobilize resources for the Reconstruction Program, based on the area of action and interest of each organization.

4) The Government and beneficiary entities may also negotiate with Partners and Multilateral Development Banks the allocation of part of the resources of projects currently underway or in the pipeline for the coming years for post-Cyclone recovery and reconstruction funding IDAI.

The implementation of the Program should be based on a transparent and rigorous management of the resources allocated to the Program. To this end, the Government shall ensure that:

- The contracting of works, goods and services by the Program obeys the rules of public contracting established by Decree No. 5/2016, of March 8 (which regulates the Contract of Public Works, Provision of Goods and Services to the State), or other international procedures, as appropriate;

- The use of Program resources is subject to independent annual audit.

- The Program Annual Reports and Accounts are public and should be shared with Partners and all stakeholders.

The Cabinet for the Reconstruction of Post-Cyclone IDAI

The Government of Mozambique created The Cabinet for the Reconstruction of Post Cyclone IDAI by Decree 26/2019 on April 11, 2019. With its headquarters in Beira City, the Cabinet is an entity of territorial scope and of temporary nature, but enjoys the autonomy and powers of authority and technical decision necessary for the effective and efficient performance of its functions. The Cabinet's structure is as follows:

- It is supervised by the Minister of Public Works, Housing and Water Resources.

- It is headed by a Director appointed by the Council of Ministers, under an articulated proposal of the Ministers who oversee the areas of public works and economics and finance.

- It's Governing Board is made up of the Director of the Cabinet and two members who coordinate the social area and infrastructures and productive areas, to be appointed by the Minister who oversees the area of public works, by proposal of the Director of the Cabinet;

- The Cabinet's complementary structure, organization and functioning, as well as the relationship model, will be proposed by the Office, in coordination with the Development Partners, after harmonization with the Minister of Public Works, Housing and Water Resources and Economy and Finance for subsequent approval.

THE PDNA METHODOLOGY

The PDNA undertaken in Mozambique follows the standard methodology developed by the UN System, World Bank and the European Union, which integrates a collection of analytical methods, tools and techniques developed for post-disaster assessments and recovery planning. The assessment builds on primary and secondary data provided by the GoM and development partners, and on interviews and field visits to affected areas.

The PDNA considered the context prior to the cyclone and floods in the four affected provinces, particularly the socio-economic, environmental, and political conditions and other factors that need to be considered to do a comparative analysis with post-disaster conditions. The effects of the cyclone on each sector were assessed in terms of damage and loss, as follows: **Damage** refers to the total or partial destruction of physical assets in the disaster-affected areas. Damages occur during and immediately after the disaster and are measured in physical units (i.e., number of damaged houses, roads, crops, land, etc.). Their monetary values are expressed as the replacement costs according to prices prevailing just before the event. **Loss** refers to changes in economic flows arising from the disaster. They occur until full economic recovery and reconstruction is achieved. Typical losses include the decline in output in productive sectors such as agriculture, industry and services.

Furthermore, the PDNA assessed the overall **human impact** of the cyclone, including the projected impact on multidimensional and income poverty levels in the country, as well as the potential **macroeconomic impact**, particularly inflation and economic growth.

Based on the analysis of both the effects of the cyclone (damage and loss) and the impact of the disaster, the PDNA estimated the country's recovery needs and cost. **Recovery needs** include interventions that are necessary to rebuild livelihoods and infrastructure on a sector-by-sector basis, and an estimate of the cost to achieve the proposed recovery. Recovery needs are estimated for the short, medium and long-term process. A preliminary strategy for recovery was discussed with the GoM which will form the basis of a subsequent recovery framework and action plan with prioritized interventions.

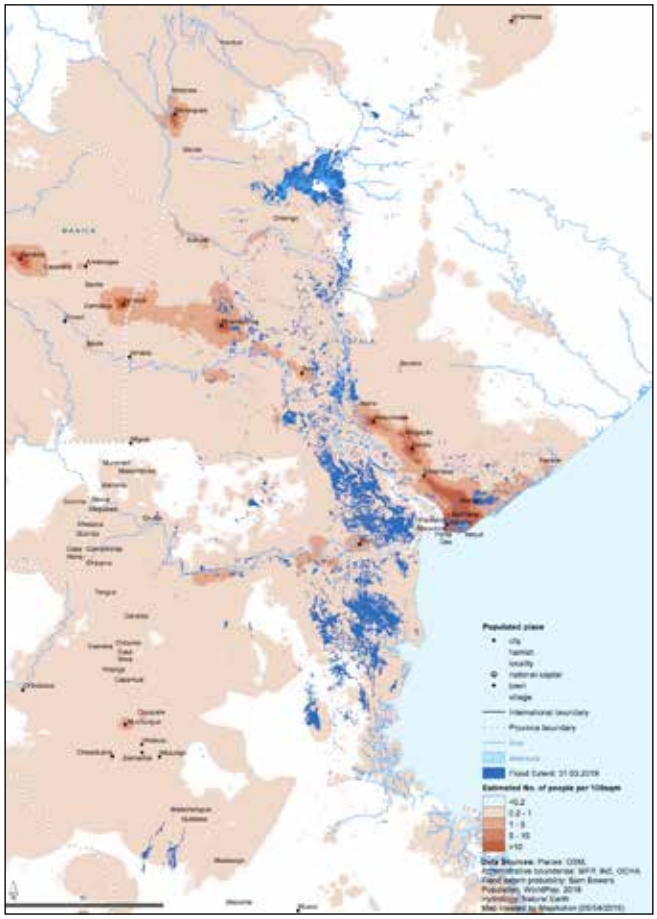
MAIN PDNA REPORT

INTRODUCTION

Following **Cyclone IDAI,** the Minister of Economy and Finance, on behalf of the Government of Mozambique (GoM), requested technical assistance from the World Bank (WB) on March 27 2019, through the Global Facility for Disaster Reduction and Recovery (GFDRR) to undertake a post-disaster needs assessment (PDNA) to support the country's recovery process. In accordance with the PDNA protocols, the request was extended to the other tripartite partners, the European Union (EU) and the United Nations (UN). The PDNA, led by the GoM, was conducted between April 16 and May 2nd 2019 by a team of experts from Government Ministries with support from the United Nations agencies, the World Bank, the European Union, the African Development Bank and other development partners. The present report incorporates the results of the PDNA exercise in Sofala, Manica, Zambezia and Tete. This report was submitted to the GoM on May 15 and will be shared with guests attending the pledging conference scheduled for May 31st and June 1st 2019.

Tropical Cyclone IDAI and Extreme Weather

Fig. 6: Flooding extent from Cyclone IDAI



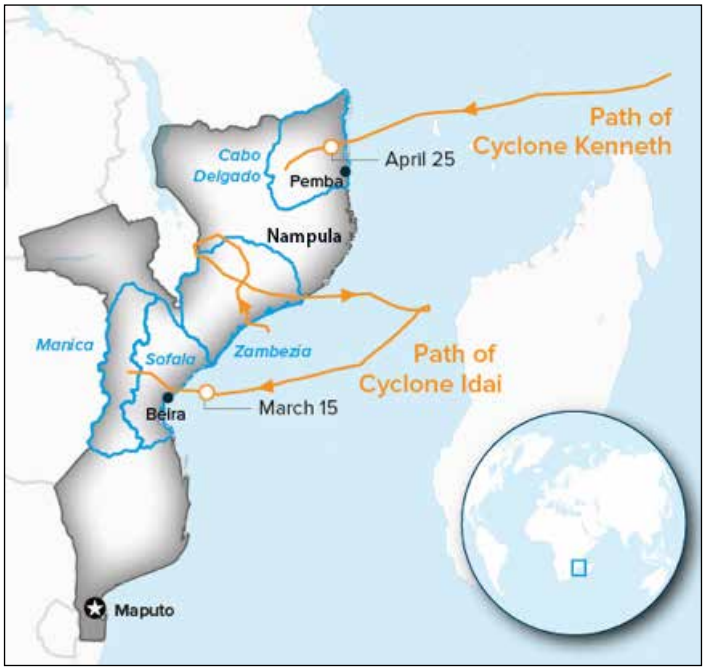
Tropical Cyclone IDAI made landfall on the night of 14 to 15 March near Beira City, Sofala Province, in central Mozambique. IDAI brought strong winds (180 – 220 km per hour) and heavy rain (more than 200 mm in 24 hours) across the provinces of Sofala, Manica, Zambezia, Tete and

Inhambane. The weather system's impact was particularly devastating as it came in three waves: in early March, the low pressure system caused flooding in Zambezia and Tete; in early March, Cyclone IDAI made landfall near the port City of Beira – home to 500,000 people – finally, over the weekend of 16-17 March, the weather system carried torrential rains across multiple areas, causing rivers to overflow, with flood waters reportedly rising above 10 meters. The path of the storm cut through Sofala and Manica provinces, with a majority of the flooding affecting districts in Sofala province, while high winds affected Manica Province.

IDAI also brought a large storm surge that reached up to 4.5 meters particularly concentrated in the coastal city of Beira and surrounding areas of Sofala province. According to the calculations of The European Commission Joint Research Centre (JRC) the max. storm surge was in the area of the delta river (Pungwe and Buzi Delta Rivers).[27]
Source: MapAction, Cyclone Idai flood extent and baseline population

An estimated 3,000 sq. km of land and 715,378 hectares of cultivated land were flooded by IDAI. As of the end of April, 400,000 had been displaced, of which 160,927 were sheltering in 164 temporary accommodation centers across the four provinces. It is estimated that over 13.5 million people lived in the four provinces of Sofala, Manica, Zambezia and Tete, of which more than 1.5 million have been affected, over 1600 injured and more than 600 people died. An estimated 750,000 are in need of urgent assistance. About 53% of those in urgent need are women, 47% are men, 254,000 are children under 18 years of age, and 63,000 are over 60 years of age.

Fig. 7: Path of Cyclones IDAI and KENNETH



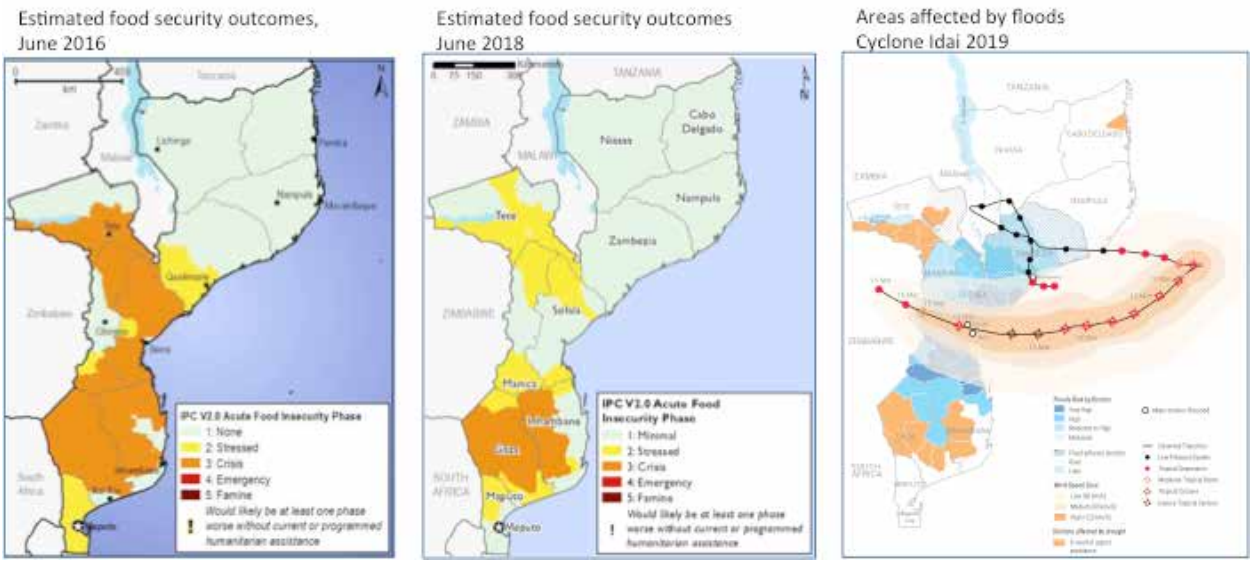
On 25 April, Mozambique experienced a second Tropical Cyclone, Kenneth, which made landfall in between the districts of Macomia and Mocimboa da Praia in Cabo Delgado province. With wind gusts of up to 220km/h, Kenneth became the strongest cyclone to ever hit the African continent. Kenneth made landfall at the end of the rainy season, when river levels were already

27 EC/JRC, Tropical Cyclone IDAI: analysis of the wind, rainfall and storm surge impact (P. Probst, A. Annunziato), 9 April 2019.

high, increasing the risk of river flooding. At least one death has been reported and 18,029 people have reportedly been displaced. While this report is focused on the 4 provinces most affected by IDAI, the GoM has requested a separate addendum for the provinces affected by Kenneth, Cabo Delgado and Nampula; and a fifth province affected by IDAI, Inhambane. See Annex 3.

In recent years Mozambique has been struck frequently by other extreme weather events. In February 2017, Tropical Cyclone Dineo made landfall in the southern province of Inhambane, bringing torrential rain and damaging winds. Among the worst recent events to affect the country was the 2015–2016 El Niño drought, the most devastating in 35 years for Mozambique and much of southern Africa. The drought affected southern and central regions in the country. By the end of 2016 an estimated 2.1 million people needed food assistance. The figure below illustrates the areas affected by food insecurity as a result of two previous climatic events and the correlation with areas flooded by Cyclone IDAI.

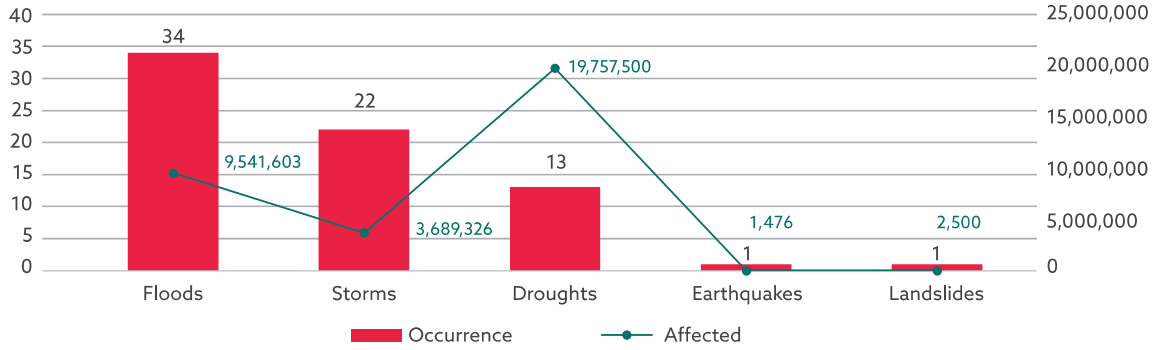
Fig. 8: Areas affected by food insecurity in 2016 and 2018, and areas affected by Cyclone IDAI



As indicated in Fig. 9 in Mozambique floods and storms are the most common disasters to affect the country, yet droughts affect the highest number of people.

In addition, most climate models indicate that Mozambique will be affected by more extreme weather events in the years to come. Cyclones will continue to strike, and their intensity and associated precipitation is expected to increase. Models project an increase of the proportion of total rainfall that will fall in heavy rain events, and longer dry spells. The intensity of heavy rain events is expected to increase by 10% (2010-2100), while their frequency is projected to increase by 6%.

Fig. 9: Occurrence of disasters in Mozambique by type 1956-2016



Source: WB, Financial Protection Against Disasters in Mozambique 2018

The duration of long-lasting heat waves is expected to increase by 17 days on average by 2100. These increases in heavy rainfall as well as heat waves are likely to result in an increase in extreme events, including droughts and floods. An increase in droughts, caused by longer heat waves and dry spells, is expected for central and southern regions of the country. At the same time, more floods can be expected across the country – especially during the rainy season. While the north is likely to experience floods more frequently, the magnitude and damage of floods will often be higher in the south. The Limpopo basin has been indicated as a hotspot for floods, with an average increase of 25% in the magnitude of flood peaks.[28]

Disaster Context

Before Tropical Cyclone IDAI struck Mozambique, the country was already facing high levels of food insecurity. Agricultural productivity and production for the 2018-2019 main season was already expected to be quite low due to drought conditions. The onset of the rainy season was late and a dry spell fell mid-season. The combination resulted in moisture stress and wilting of the early-planted crops in many central and southern areas of the country (the same regions in which the provinces most affected by cyclone IDAI are located). This led to below average agricultural productivity in the affected areas. In addition to the drought-related yield decreases, incidences of armyworm infestation were reported, which contributed to a further drop in productivity.

Between September and December 2018, 1.78 million people were severely food insecure in the country, according to the Integrated Phase Classification (IPC) and Mozambique's Technical Secretariat for Food Security and Nutrition (SETSAN). Of these, an estimated 814,700 were severely food insecure in five provinces: Sofala, Tete, Cabo Delgado, Gaza, and Inhambane. The most affected provinces were Tete (more than 359,300 people) and Gaza (more than 318,200 people).

Cyclone IDAI arrived at a time when key events and processes were expected to unfold in Mozambique which are vital to the country's stability, in particular the general elections to be held in October 2019, the new decentralization package of agreements, a peace process between the Government and Renamo, and the process of Demobilization, Disarmament and Reintegration (DDR). The nature and national scope of these processes, as well as the time-limits for achieving them, make them especially sensitive in the post-disaster context left by IDAI. Moreover, these are vital for the consolidation of peace and democracy in Mozambique.

28 Netherlands Commission for Environmental Assessment. Climate Change Profile Mozambique, 2015.

The general elections in October will elect a new President, Members of Parliament and for the first time, the governors of 10 provinces. Due to Cyclone IDAI, the Government approved a 15-day postponement of the start of the voter registration, keeping the date of the elections unchanged. Electoral registration is one of the first and most important activities on the electoral calendar and can play a very important role in the legitimacy of a country's stability.

Election officials believe that despite the effects of the cyclone, voter registration will proceed satisfactorily and that the next electoral phases of the electoral calendar will not be affected. Despite this positive view, there are opposition political parties that have been calling for a postponement of the voter registration period and the voting date, based on the argument that areas affected by the cyclone may not be prepared.

Socio-Economic Vulnerability

Cyclone IDAI made landfall in the ninth country with the lowest human development index (HDI) in the world (0,437), ranking 180th among 189 countries.[29] When Mozambique emerged from civil war in 1992 it was among the world's most impoverished and capacity constrained countries. Since then, its overall economic growth has been strong, with a sustained GDP growth of 7% between 2011 and 2015.[30] Yet, the growth has not been equitable and has not supported enough social and economic development. Life expectancy is 59, the infant mortality rate is 67.3, maternal mortality stands at 452, and the illiteracy rate stands at 39% (males 27%; females 49%).

Table 8: Pre-disaster socio-economic vulnerability

SOCIO-ECONOMIC VULNERABILITY -KEY FACTS	
Population 2019: 27.9 million	
GDP (PPP) per capita (2017):	USD 453
Human Development Index rank (2018):	180 out of 189 countries
Gender Inequality Index rank (2018):	139 out of 159 countries
Life expectancy at birth (in years)	53.7
Infant Mortality Rate (IMR)/1,000 live births	67.3
Maternal Mortality Ratio (MMR)/100,000 live births	452
Adult illiteracy rate:	39% (males 27%; females 49%)

Source: Mozambique National Institute for Statistics (INE).

The agricultural sector accounts for 25 percent of the GDP and employs 71 percent of the labor force. Almost 94 percent of the poor are primarily engaged in agriculture. Most of the rural poor are smallholders engaged in subsistence agriculture.[31]

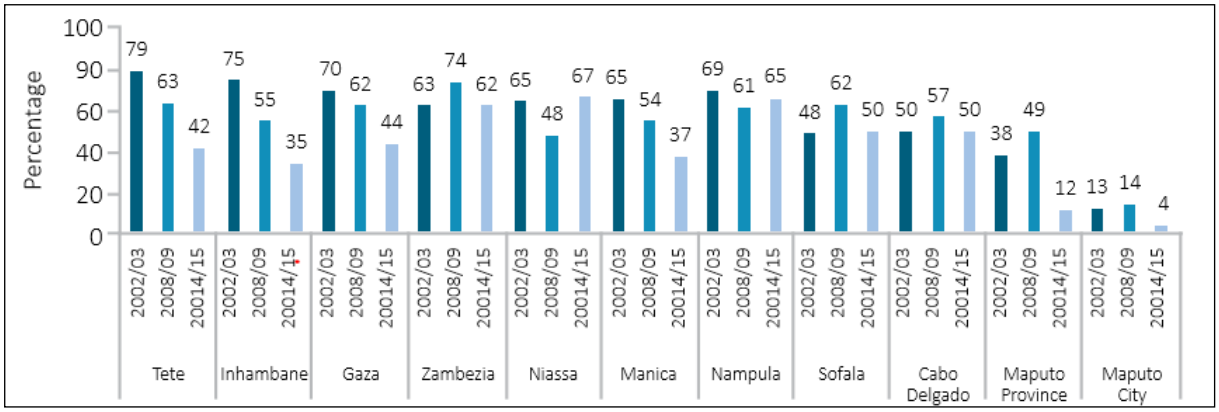
Poverty and inequality remain high. The absolute number of poor people in the country has been increasing, largely due to rapid population growth. Welfare levels are particularly low in the Northern and Center Regions of the country relative to the South.

29 UNDP. Human Development Indices and Indicators 2018 Statistical Update. 2018

30 World Bank, Mozambique profile. https://www.worldbank.org/en/country/mozambique/overview

31 World Bank. Mozambique Poverty Assessment. 2018

Fig 10: Poverty Rates Across the Provinces



Source: World Bank. Mozambique Poverty Assessment. 2018

The country's poverty headcount is 46 percent as of 2014/15, although poverty in rural areas is higher at 56 percent. The poverty rate in the four provinces most affected by cyclone IDAI is higher, at 62% in Zambezia, 50% in Sofala, 42% in Tete, and 35% in Inhambane.[32]

Just over 46 percent of Mozambicans live in chronic poverty, which means they are unable to afford basic food and non-food baskets and are deprived in at least three core, non-monetary measures of human welfare (education, access to basic services, housing conditions and ownership of basic assets). Most of them live in rural areas (84.9 percent).[33]

The pre-existing socio-economic conditions in Mozambique show that Cyclone IDAI took place in a context of high vulnerability, conditions that are likely to exacerbate poverty among affected populations. A 2018 World Bank analysis[34] employing a triple-difference strategy that exploits variation in the shocks across space, time, and cropping cycles demonstrates high levels of vulnerability across various weather risks. Experiencing a cyclone, flood, or drought leads to a drop of up to 25-30 percent in per capita food consumption and around 0.4 fewer meals per day per person. Poverty increased by 12 and 17.5 percentage points in two of the three events analyzed. Households follow risk-coping strategies, such as increasing the labor supply of their children or selling assets, which entail partial protection in the aftermath of the shock at the cost of lower income growth in the future.

There is evidence[35] that the burden of disasters on the public sector in Mozambique is substantial and the government still faces significant difficulties in mobilizing the resources for financing post-disaster emergency response, recovery, and reconstruction.

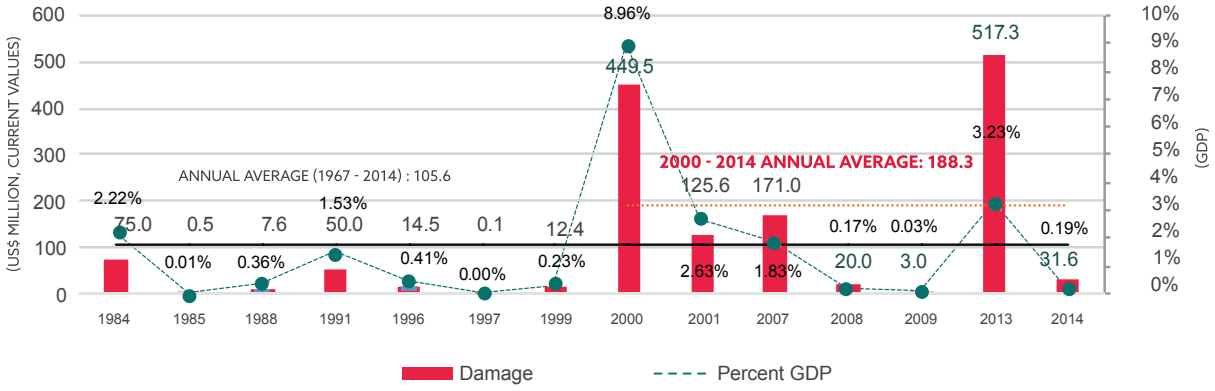
32 Ibid

33 Ibid

34 Extreme Weather and Poverty Risk: Evidence from Multiple Shocks in Mozambique. Javier E. Baez, German Caruso, and Chiyu Niu. Policy Research Working Paper 8667. Poverty and Equity Global Practice December 2018

35 World Bank, Financial protection against disasters in Mozambique, 2018.

Fig. 11: Damage cost of disasters in Mozambique 1984-2014



Source: WB, Financial Protection Against Disasters in Mozambique 2018

The Immediate Response

Following Cyclone IDAI, the Government of Mozambique immediately implemented a series of actions in response to the unfolding disaster.

- Declared a National Sate of Emergency on 19th March 2019
- Implemented immediate search and rescue operations, and provided humanitarian aid
- Made an appeal for international assistance
- Established a post-Cyclone IDAI Recovery Program (PREPOC), at the 10th Session of the Council of Ministers, held in Beira on 26 March;
- Approved the Terms of Reference of the PREPOC at the 11th Session of the Council of Ministers, on April 2, 2019;
- Approved the creation of the Post-Cyclone Reconstruction Office at the 12th Session of the Council of Ministers, on April 09, 2019;
- Extended the Scope Assessment for Cabo Delgado and Nampula Cyclone following Cyclone Kenneth, at the CM meeting on April 30, 2019
- Trained staff of Ministries / sectors on the PDNA methodology and calculation of damage, loss and recovery needs. This training included the central, provincial, district and municipal levels.
- Conducted the PDNA to evaluate damage, losses and needs, collecting additional information in affected sites and preparing sector reports; Approved by the Council of Ministers on May 7th;
- Developing the Final Report of the PDNA, to be presented for Approval by the Council of Ministers on May 14;
- Planning to hold a Pledging Conference to be held on May 31st -June 1st 2019.

In parallel the international community has mobilized to support the GoM and communities affected by Cyclone IDAI. The United Nations issued an international appeal for assistance in the amount of USD$281.7 million, as indicated in Table 9, and revised the country's humanitarian response plan. The UN and NGO community also undertook a Multi-sector Initial Rapid Assessment (MIRA) to inform the humanitarian response. The WB, EU, UN agencies, INGOs and other partners are working with the GoM to provide humanitarian and early recovery support to Mozambique.

Table 9: Consolidated humanitarian needs

SECTOR	USD	TARGET POPULATION
TOTAL	281 700 000	1 720 000
Food Security and Livelihoods	156 400 000	1 800 000
Health	30 700 000	1 000 000
Water and Sanitation	21 800 000	140 000
Education	15 000 000	640 000
Protection	12 700 000	1 800 000
Shelter /Non Food Items	12 200 000	400 000
Nutrition	9 500 000	317 000
Logistics	9 300 000	
Camp coordination and camp management	5 500 000	100 000
Early Recovery	4 250 000	250 000
Coordination and Common Services	3 100 000	
Other (Emergency, telecommunications)	1 200 000	

Source: UN Humanitarian Flash Appeal (24 April 2019)

The present Post Disaster Needs Assessment (PDNA) consolidates the full impact of Cyclone IDAI and the full range of recovery needs over the short, medium and long term. The final results of this PDNA is intended to mobilize international cooperation for the recovery of the four most affected provinces of Mozambique, and will be presented in a Pledging Conference on 31st May and 1st June 2019.

The recovery strategy proposed in the present report will be implemented in synergy with the humanitarian response currently underway, leading to comprehensive and full-fledged support to the Government and communities affected by Cyclone IDAI.

THE EFFECTS OF IDAI AT A GLANCE

Table 10 and Fig. 12 summarize the main effects of Cyclone IDAI, particularly the number of people affected by province, as well as the damaged or destroyed houses, schools, health facilities, cultural centers, livestock, irrigation systems, businesses, water and sanitation facilities, energy and transport infrastructure.

Table 10: Total population by province, and number of affected people by province

	Population (2019)	Affected population (2019)	% of total	Affected Households
Zambezia	5 164 732,0	6 035,0	0,1	1 207,0
Tete	2 648 941,0	54 721,0	2,1	10 931,0
Manica	1 945 994,0	262 890,0	13,5	56 184,0
Sofala	2 259 248,0	1 190 596,0	52,7	237 789,0
Inhambane	1 488 676,0	422,0	0,0	110,0
Affected Provinces	**13 507 591,0**	**1 514 662,0**	**11,2**	**306 111,0**
Mozambique	**27 909 798,0**	**0,1**	**5,4**	

Source: INE 2019; INGC database 2019

Fig. 12: Effects of Cyclone IDAI at a Glance

AGRICULTURE	FISHERIES	LIVELIHOODS
433,056 affected households need seed assistance	116,476 M2 of fish tanks affected	Over USD$ 39 milion in income was lost due to unemployment
9,710 animal deaths	1,728,800 avelinos lost	
4.9 million animals need vaccines	2,044 fishing vessels destroyed	
4,309 ha of irrigated land needs rehabilitation		

WATER & SANITATION	ENERGY	TRANSPORT
71,450 damaged latrines affected in rural areas	Destruction or damage to:	Damaged 3,490 km of national roads, 29% of total
118,600 damaged latrines in urban areas	2 generation plants 90 MW	20 bridges affected
	1345 Km of transmission lines	39% of the national rodoviária network damaged
	10216 Km of distribution lines and 30 substations	Significant damage to railroads, with effects on internal trade
	4000 transformers	

HOUSING	EDUCATION	HEALTH	CULTURE
240,000 houses were partially or totally destroyed	1372 schools affected	89 health facilities partially destroyed	10 cultural centers severely damaged
	4,219 classrooms Affected	3 health facilities completely destroyed	15 historic buildings severely damaged
		2 health training facilities were partially destroyed	

DAMAGE AND LOSS

Damage and Loss in the Four Affected Provinces

Table 11 presents a summary of the damage and loss estimated by the PDNA for the four provinces affected by IDAI: Sofala, Manica, Tete and Zambezia. The damage caused by IDAI is estimated to be over USD$ 1.4 billion in total, which reflects the cost of replacing infrastructure and physical assets. The bulk of the damage fell heavily on the transport sector valued at USD$442 million, followed closely by the housing sector estimated at USD$411 million worth of damage. The third sector to suffer heavy damage is industry & commerce which saw USD$140 million in damage, followed by the energy sector where damage is valued at USD$133.5 million. Damage was relatively lower yet still significant in the environment sector at USD$80 million, and for the agriculture sector with USD$48 million.

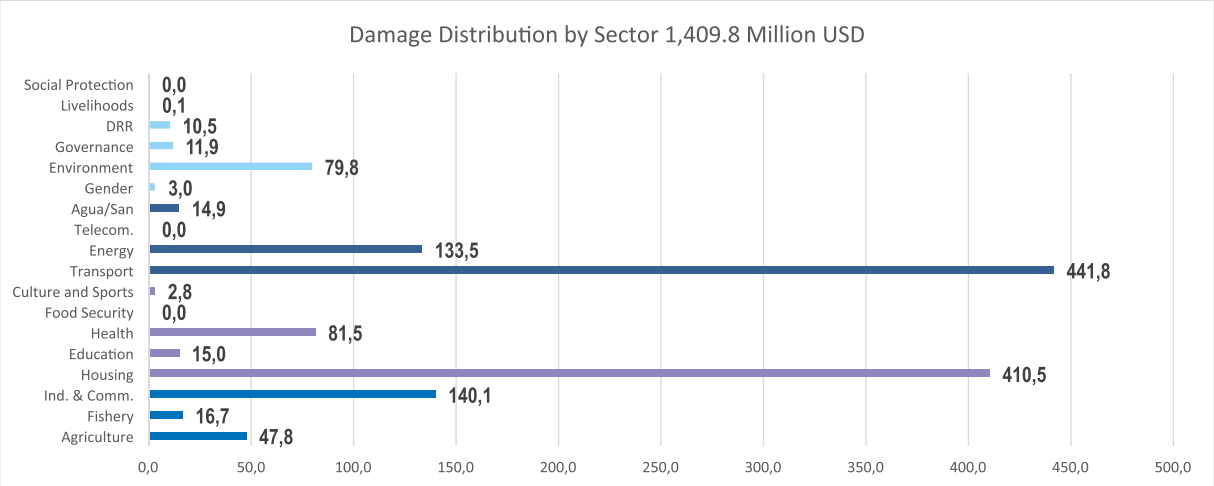
Total losses equal USD$1.39 billion, which reflect the changes in economic flows to full recovery including lost income in the production of goods and services and additional costs to re-establish production. The agriculture sector suffered the most losses with USD$513 million, followed closely by industry & commerce which suffered USD$470 million in losses. The transport and health sectors saw losses in the order of USD$153 million and USD$ 109 million respectively.

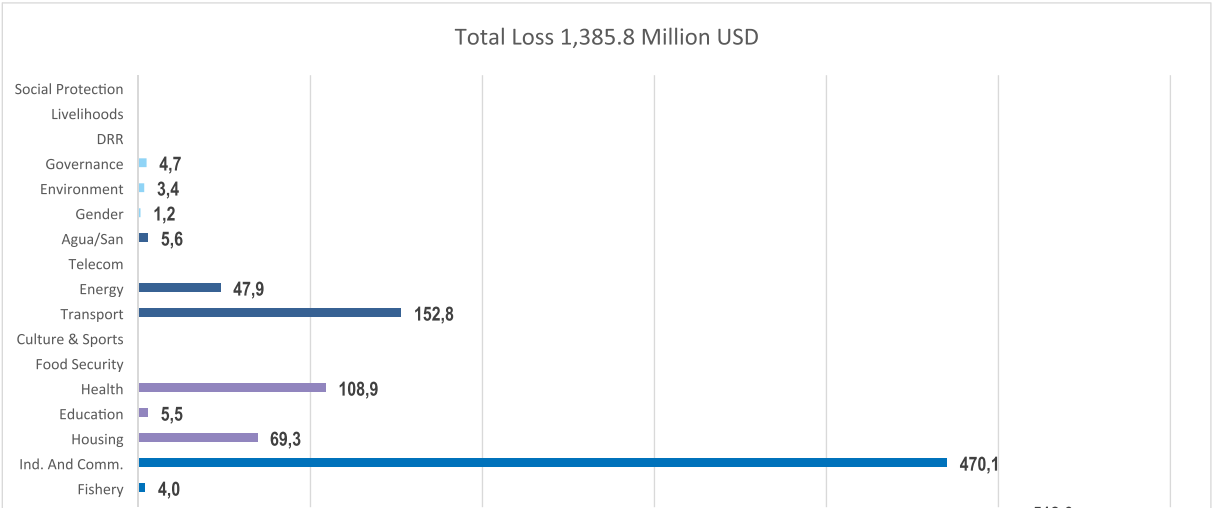
Table 11: Total Damage and Loss by Sector (USD millions)

Sectors	Damage			Loss		
	Public	Private	Total	Public	Private	Total
TOTAL	**748,9**	**660,9**	**1409,8**	**180,0**	**1205,8**	**1385,8**
Produtive	14,2	190,4	204,6	0,0	986,6	986,6
Agriculture	14,2	33,6	47,8	0,0	512,6	512,6
Fishery	0,0	16,7	16,7	0,0	4,0	4,0
Ind. And Comm.	0,0	140,1	140,1	0,0	470,1	470,1
Social	97,8	411,9	509,7	121,9	61,8	183,7
Housing	0,0	410,5	410,5	7,6	61,7	69,3
Education	14,7	0,3	15,0	5,5	0,1	5,5
Health	80,4	1,1	81,5	108,9	0,0	108,9
Food Security	0,0	0,0	0,0	0,0	0,0	0,0
Culture and Sports	2,8	0,0	2,8	0,0	0,0	0,0
Infraestruture	534,2	56,0	590,2	56,0	150,2	206,3
Transport	391,7	50,0	441,8	5,3	147,5	152,8
Energy	133,5	0,0	133,5	47,9	0,0	47,9
Telecomunications	0,0	0,0	0,0	0,0	0,0	0,0
Agua/San	8,9	6,0	14,9	2,9	2,7	5,6
Cross-cutting	102,7	2,6	105,3	2,1	7,2	9,3
Gender	3,0	0,0	3,0	0,0	1,2	1,2

Sectors	Damage			Loss		
	Public	Private	Total	Public	Private	Total
Environment	77,7	2,1	79,8	2,1	1,3	3,4
Governance	11,9	0,0	11,9	0,0	4,7	4,7
DRR	10,0	0,5	10,5	0,0	0,0	0,0
Livelihoods	0,1	0,0	0,1	0,0	0,0	0,0
Social Protection	0,0	0,0	0,0	0,0	0,0	0,0

Fig. 13: Sector Distribution of Damage and Loss





Note: Damage refers to costs of replacing infrastructure and physical assets, using prevailing pre-disaster market prices; Loss refers to changes in economic flows to full recovery. Current market prices are used. Data includes lost income in the production of goods and services and additional costs to re-establish production.

DISASTER IMPACT

THE HUMAN IMPACT

The human impact of Cyclone IDAI is measured through an analysis of four broad categories of information and analysis, as follows:

1. Poverty and material deprivations: documents indicators of changes in access to basic services such as health, education and water, basic household assets, and income poverty.
2. Livelihoods, employment and food security: analyzes the impacts on rural and urban livelihoods, employment and the immediate and long-term consequences for food security and nutrition.
3. Gender equality: explores the differential way IDAI impacted women and girls.
4. Social inclusion and vulnerability: addresses the impact of IDAI on different segments of the population, particularly vulnerable populations.

Poverty and Material Deprivations

In Mozambique 66% of its 28 million people live in rural areas, where basic services are very scarce and material deprivations were already high even prior to Cyclone IDAI.[36] In urban areas, 70 to 80% of the population already lived in informal settlements. As summarized in Table 13, the impact of cyclone IDAI on housing, water and sanitation facilities, health and education has increased material deprivations and will have longer-term effects on the levels of poverty in the country.

36 World Bank Mozambique Poverty Assessment, 2019.

Table 13: Summary of the human impact of Cyclone IDAI

SECTOR	HUMAN IMPACT
Farming Livelihoods	433,056 farming families require seed starter kits, equivalent to 2.1 million people.
Employment	Over USD 39 million in income was lost due to unemployment
Housing	240,000 households had their homes totally or partially destroyed
	237,789 families were displaced
Health	6,627 cases of cholera reported thus far
	14,863 cases of malaria and rising
	75,000 pregnant women among the affected, and 45,000 live births are expected in the next 6 months
	83,000 affected women are lactating during the first year after birth
	There has been a 50% decrease in HIV consultations
	At least 7,000 women in reproductive age are at risk of suffering rape
Education	The destruction of schools is impacting more than 382,717 students, and 9,616 teachers
	Only 40% of the rural schools have water and sanitation facilities
Water	211,000 People have restricted water access
Sanitation	The population reporting open defecation went up from 23% to 46% in the 14 hardest hit districts
Food security	1,359,159 individuals require emergency food assistance
	Food consumption of staples has been reduced by over 50%
Nutrition	130,000 pregnant and lactating women are at risk of moderate malnutrition
	100,000 Children 6-59 months are at risk of acute malnutrition
Poverty	64% Poverty rate, may rise to 79% in affected areas

Housing

An estimated 110,000 households had their houses completely destroyed, an additional 128,529 households had their homes partially destroyed, and 237,789 families were displaced by cyclone IDAI.[37] Ninety percent of this destruction happened in the most vulnerable areas. As of 22 April, the overall number of displaced people living in accommodation centers countrywide was 72,793 across 65 sites in Manica (32); Sofala (26); Tete (5) and Zambézia (2).[38] Many others are living with host families.[39]

Water and sanitation

Following the cyclone, the percentage of the population reporting open defecation increased from 23 to 46 in the 14 hardest hit districts, particularly in rural areas. The availability of water has also decreased since the crisis and currently there are 211,000 people with restricted water access. To deal with this, people adopt a variety of coping mechanisms, including the use of unsafe water sources for cooking and washing, reducing water consumption and fetching water at more distant locations.

Furthermore, only 40% of the rural schools have water and sanitation facilities. There is a strong correlation between the prevalence of stunting and WASH as it has been estimated that 50% of the consequences of under nutrition are caused by environmental factors that include poor hygiene, and the lack of access to water supply and sanitation in the country.[40]

Health

The cyclone effects on health continue to exacerbate the already precarious health status of many residents of the Central Region, which is detailed in the Health and Nutrition sector chapter. Prior to the disaster Mozambique's maternal mortality rate was 452 per 100,000 live births and the child mortality rate was 67 per 1,000 live births.[41] The percentage of people without access to health care was 26% in Tete, 32% in Sofala, and 35% in Manica and Zambézia. Lack of access was much higher in the rural areas (86%) than urban (41%).[42] The physical losses of health posts, medical materials, and health records has further reduced access. UNFPA estimates that in the provinces of Sofala and Manica "over 75,000 cyclone-affected women are pregnant, with over 45,000 live births expected in the next six months, and 7,000 of those could experience life threatening complications."[43] Including Tete and Zambézia, the number increases to 77,000. An additional estimated 83,000 affected women are lactating during the first year after giving birth.

Disease incidence is increasing as a result of the disaster. Some of the affected regions experienced a widespread cholera outbreak, with 6,627 cases. Malaria cases in Sofala continue to rise, with 14,863 cases registered as of 22 April.[44] Although there is no data available, previous cyclones in Mozambique resulted in child morbidity rates increasing fourfold in flooded districts.[45]

37 INGC 25 April 2019

38 OCHA. April 22 Situation Report N. 18

39 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

40 UNICEF IDAI Humanitarian Situation Report #6, April 2019.

41 INE. 2017 Census results. http://www.ine.gov.mz/iv-rgph-2017/mocambique.

42 MEF. 2016. Pobreza e Bem-Estar em Moçambique: Quarta Avaliação Nacional (2014/15).

43 https://reliefweb.int/report/mozambique/unfpa-calls-world-protect-women-cyclone-affected-mozambique.

44 OCHA 22 April, Situation Report No. 18

45 http://documents.worldbank.org/curated/en/848081551973621308/pdf/135125-POV-Practice-Note-11.pdf

In addition, Mozambique has a generalized HIV epidemic, with an estimated HIV prevalence at 13%, which is higher for women (15%) than for men (10%).[46] There is an increased risk of transmission, particularly among women and adolescents, through sexual violence or the suspension of treatment due to damages to health facilities, medicines, and patient clinical records. The number of HIV consultations per day dropped by 50% in some health facilities post-cyclone.

The trauma associated with loss of life and well-being for children and adults alike, makes a full recovery from the disaster very challenging. This has particular relevance for service providers, including doctors and health care workers who strive to care for others while rebuilding their own lives.

Education

Prior to IDAI, 32% of households in Zambézia, 30% in Tete, 34% in Manica, and 29% in Sofala did not have access to schools,[47] and only 4% of children aged 3-5 years have access to preschool programs.[48] Within this context, IDAI affected 1,372 school buildings and destroyed or partially destroyed 4,222 - impacting more than 382,717 students, and 9,616 teachers. This destruction has undoubtedly reduced school attendance, exacerbated by the loss of school materials, uniforms, identity cards, and the need to help with chores such as water collection and earning an income.

Although not quantified, IDAI is likely to have long-term impact on education outcomes. The effects of the cyclone will continue to limit the ability of children to attend school as well as to be active participants and learners. The rapid recovery of the education sector will be important not only for learning outcomes but as part of the process of returning normalcy to the lives of children.

Multidimensional poverty

Multidimensional poverty measures combine several components such as health, education, housing, and others to create an overall index of well-being. In Mozambique multidimensional poverty is currently at 46%,[49] while inequality has been increasing.[50] Prior to the disaster, multidimensional child poverty was concentrated mainly in the Central region (51.2%) compared with 15% in the South, and in rural areas (58%) compared with urban areas (19%).[51] Almost a third of the country's child population (29%) experiences simultaneously income and multidimensional poverty.

Recent estimates indicate that for the general population, multidimensional poverty rates are 63% in Zambézia, 55% in Tete, 39% in Manica, and 36% in Sofala. Urban poverty is primarily related to consumption, while rural poverty is primarily monetary and multidimensional.[52]

46 MOH, IMASIDA 2015

47 MEF. 2016. Pobreza e Bem-Estar em Moçambique: Quarta Avaliação Nacional (2014/15).

48 MINEDH, 2014.

49 Forthcoming GoM-UNICEF-WIDER, 2019. Multidimensional Child Poverty in Mozambique.

50 MEF. 2016. Pobreza e Bem-Estar em Moçambique: Quarta Avaliação Nacional (2014/15).

51 Forthcoming GoM-UNICEF-WIDER, 2019.

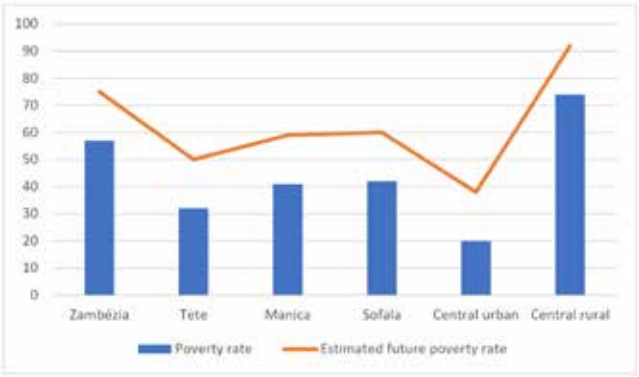
52 MEF. 2016. Pobreza e Bem-Estar em Moçambique: Quarta Avaliação Nacional (2014/15).

Two key household assets are housing and land. Both have been significantly affected by the cyclone. The loss of housing will greatly affect the measures of multidimensional poverty as 4 out of 17 (25%) of the indicators relate to housing. Perhaps of greater concern, however, is the simultaneous loss of all household and domestic goods due to flooding, which in terms of monetary value are proportionally higher than building costs. The loss of a house not only requires rebuilding, but families accrue additional expenses for renting alternative accommodation, and increased distances to their land and services. As detailed below, land recovery will take a long-time, requiring intensive labor. The loss of productive assets and identification and documentation exacerbate the situation. For families that have lost everything at once, finding the necessary financial and material resources to simultaneously rebuild housing, replace domestic items, and rebuild livelihoods, will be extremely challenging and will take time.

Income poverty

Although poverty rates have been trending down in Mozambique, they remain very high in the Central and Northern regions. Immediate changes in multidimensional poverty can be measured through loss of housing and service access. But, changes in income poverty will play out over the coming years. Poverty in Mozambique, based on the consumption of basic food needs, stood at 48% in 2015.[53] Disasters have the capacity not only to maintain people in a poverty trap, but also to push people into poverty. For example, Cyclone Jokwe, which hit Northern Mozambique in 2008 and was not as powerful as IDAI, increased the poverty headcount by 17.5%.[54] Fig. 15 projects the potential future rates of poverty based on these past estimates. The consequences of IDAI are liable to set back significantly development gains made over the last decade.

Fig. 15: Projected Poverty Rate from Cyclone IDAI



53 World Bank Mozambique Poverty Assessment, 2019.

54 http://documents.worldbank.org/curated/en/848081551973621308/pdf/135125-POV-Practice-Note-11.pdf

Livelihoods, Employment and Food Security

Rural Livelihoods

Household agricultural losses were high throughout the affected districts. A total of 433,056 farming households (equivalent to 2.1 million people) were affected by the cyclone - 50,902 of which are from Manica, 254,450 from Sofala, 11,017 from Tete and 110,395 from Zambézia province. These families depend on agriculture for both food consumption and income generation. Losing their agricultural production is detrimental to their well being and food security as it represents more than 80% of their income and food.

Livestock losses added to their hardships. Large animals typically serve as long-term savings, small ruminants or pigs are sold to cover recurrent yearly expenses and poultry serve as a regular cash flow source. Restocking animals will take a significant amount of time and is likely possible only with external support.

The loss of crops, livestock, stored food and seed supply have not only restricted the ability of households to meet their food and other basic needs, it also caused losses in agricultural wage labor and therefore income. According to a CARE assessment in Sofala, 67% of women and 88% of men reported not engaging in any paid activities.[55]

Until the next primary harvest in April 2020, agricultural-dependent households will have virtually no income from their usual sources. Without help they will not have enough economic access to food, while prices are likely to continue to rise and food supplies remain scarce. Many components of rural livelihoods, such as animal husbandry, fruit trees, and informal business recovery will require a minimum of initial capital. Many of the families in the rural areas were already extremely poor and the assets they had managed to accumulate, took many years. Currently, families are getting by on emergency aid and the little bit of agricultural production that they were able to recover. There are reports of increased informal borrowing leading to indebtedness among some of the poorest households.

Urban Livelihoods

Before cyclone IDAI, the employment rate in the provinces was between 60% and 70%, and self-employment was the primary income source for 40% of urban households.[56] Self-employment in the four provinces stood at 47% in Sofala, 59% in Manica, 62% in Zambézia, and 63% in Tete. In the urban zones of Beira, Chimoio, Tete and the district capitals additional livelihood sources include formal employment in private and public sectors. Each of these sources of income was differentially affected by IDAI.

The income of self-employed individuals was extremely sensitive to the cyclone, whereas private sector employees likely lost some salary, and public sector employees maintained their salaries. The labor market effects of Cyclone IDAI primarily impact the most vulnerable groups, which include women and youths. This is because these groups are highly represented in the informal sector and in subsistence agriculture. When these groups lose their income, their food security is greatly impacted as they also lose access to food and other essential goods because they depend on buying these from the market. The impact of the cyclone on the self-employed was further exacerbated by already precarious living conditions.

55 Data was taken from the HH survey as part of the RGA, therefore is representative of the sample in Beria and Dondo (in communities and accommodation centers). However, this finding was supported across assessment locations through the FGDs and KIIs.

56 INE (2014/5) Inquérito aos Orçamentos Familiares (IOF) and INE (2016) Relatório do Modulo Emprego

Food Security and nutrition

While assessments are currently ongoing to determine the full impact of IDAI on household food security, preliminary findings indicate that the impact of the cyclone has seriously worsened levels of food insecurity in the country. Prior to Cyclone IDAI, the country's food security situation had already deteriorated due to several months of drought during the 2017-2018 season. An estimated 1.78 million people were already classified as being severely food insecure from September to December 2018 in the country. [57]

Food availability in the affected districts has been severely affected in several ways: a) food stocks were destroyed, b) crops were totally lost; c) local markets and shops were substantially damaged, and d) roads to alternative markets were cut off and inaccessible. Over the next year food will need to be imported from other districts, regions or neighboring countries.

Access to food is severely compromised in affected districts and most of the affected population, including all displaced populations, now depend on food assistance. Others subsist on what they could recover from their stocks but much of this food is of poor quality, already germinating or rotting. Even those who may have some access to healthy food do not have the utensils to prepare it. Other documented coping strategies include limiting portion sizes, reducing the number of meals eaten per day, and eating wild foods.

Malnutrition, both acute and chronic, is expected to increase in the most vulnerable population groups due to the lack of food and the deteriorating hygiene and sanitation conditions. This is especially true for children, pregnant and lactating women, elderly and the chronically ill.

Currently, it is estimated that in the next few months, there may be around 100,000 children 6 to 59 months of age with acute malnutrition and 130,000 pregnant and lactating women with moderate malnutrition, including those with HIV, and 70,000 older people with moderate to acute malnutrition, due to food insecurity, poor sanitation and overall poor living conditions. Nutritional deficits will most likely increase because of poor diets and the low absorption of nutrients due to infectious and parasitic diseases.

Gender Equality

Mozambique ranks 139th out of 159 countries in the UNDP Gender Inequality Index.[58] Only 46% of girls finish primary school in the country, and 56% of women are illiterate (70% in rural areas), compared to 29% of men.[59] Early marriage is high, affecting almost one in every two girls. Maternal, newborn and child mortality rates are high in Mozambique, and HIV infection rates are higher among girls and young women compared with boys and men of the same age.[60] While women are legally entitled to land use rights, this is not the case in practice. For example, of the people that have documented land use rights in Sofala only 26% are women, in Manica and Tete the number is 25% and 27% in Zambézia.

Low levels of education, high maternal health risks, pressure to marry at a young age, high levels of teenage pregnancy,[61] limited economic prospects, gender-based violence, and

57 SETSAN, 2018, *IPC report October 2018*

58 UNDP Human Development Reports, 2015, http://hdr.undp.org/en/composite/GII.

59 PEPFAR Mozambique Gender Analysis Country Operational Planning 2016, pgs. 8-9. 3 Perfil de Género de Moçambique, 2016.

60 PEPFAR Mozambique Gender Analysis Country Operational Planning 2016, pg12.

61 https://www.unicef.org.mz/wp-content/uploads/2015/07/EN_Statistical_Analysis_Child_Marrige_Adolescent_Pregnancy_aw-Low-Res.pdf

accepted cultural norms contribute to the precarious status of women and girls in the country.

The impact of the cyclone has a differential impact on women and girls. There is an elevated risk of Gender-Based Violence.[62] At least 7,000 women in reproductive age are at risk of suffering rape in the next six months.[63] This is a direct result of greater exposure of women and girls to distant and unsafe locations, such as water collection points, sanitation facilities and health centers. The need to collect water more frequently and from greater distances and the use of public toilets and shared latrines increases the risk for women and girls. With the destruction of health facilities, pregnant women have limited access to safe deliveries. According to UNFPA, it is estimated that over 75,000 cyclone-affected women are pregnant, with over 45,000 live births expected in the next six months, and 7,000 of those could experience life-threatening complications.[64]

The recovery burden is particularly difficult for female-headed households (FHHs), including widows, who are both the income provider and main caregiver. In communities where people have returned to their land, women reported difficulty in being able to simultaneously rebuild homes, serve as the primary caregiver, and rebuild their livelihoods.[65] There is also concern for the long-term recovery of FHH due to the possible loss of their land as a result of land grabbing, which may accentuate the current disparities in land rights.

Without possessions, livelihoods, poor access to services and marginalization there is a significant possibility that the feminization of poverty will increase in Mozambique. Recovery efforts will need to give priority to vulnerable women and girls, and especially to FHH. Livelihood recovery will be particularly important considering that women comprise the bulk of the unskilled workforce in the country, especially in agriculture (63%). Agriculture is the predominant activity of women in the rural areas, and 76% of female-headed households depend on agriculture for their livelihoods.

Social Inclusion

Although the impact of the cyclone is widespread in affected areas, there are particular social groups that demonstrate especially high levels of vulnerability, due to increased exposure to risks or a lessened capacity to respond. This section identifies these groups, and calls attention to necessary considerations for their recovery.

62 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

63 Estimates from UNFPA 2019.

64 UNFPA calls on world to protect women in cyclone-affected Mozambique. https://reliefweb.int/report/mozambique/unfpa-calls-world-protect-women-cyclone-affected-mozambique

65 CARE. 2019. Rapid Gender Analysis. Cyclone IDAI Response, Sofala Province, Mozambique.
Photo Credit: Tina Kruger / Oxfam Novib

The Government of Mozambique provides ongoing social protection programs for vulnerable populations, yet it is not particularly prominent or well resourced. Coverage is only about 9%. Social protection departments (INAS & MGCAS) are not present in many affected districts. The PSSB program targets elderly, people with disabilities or chronic/degenerative diseases, children, child-headed households, and orphan children living in poor and vulnerable families. The PASP is a public works scheme targeting poor households with at least one member with labor capacity.

Children

Children in Mozambique are among the most deprived children in the world. According to the 2017 census children constitute more than half of the 28 million population. It is estimated that 6.1 million households are headed by children (12-14 years).[66] There are about 2 million orphans and vulnerable children. Only 47% of students complete primary school. This figure is higher for girls due to school based sexual harassment and abuse, early pregnancy, high rates of early marriage, and the lack of gender sensitive sanitation facilities at schools. Deprivations by children are deep and cumulative and have a “pull effect” on others. One in two children in Mozambique can be classified as multidimensionally poor and 49% as monetarily poor - rates higher than among the general population. This increases the risk of child labor - which prior to the cyclone was estimated at 22%.

Older people

A Rapid Needs Assessment of Older People[67] in Sofala found that, safety and security when accessing food items was the third priority highlighted by older people in temporary shelters. The assessment also found that 90% of the elderly respondents were food insecure in large part because they do not have any income, and a third of them have had to borrow money since the cyclone. Almost half depend on family or friends to meet their basic needs, while 81% care for an average of five dependents. There are estimates that over 75% of affected older people in Sofala and Manica provinces require urgent assistance.[68]

People with disabilities

It is estimated that between 2%[69] and 6%[70] of the total population of Mozambique and 14% of children aged 2-9 years[71] live with a disability, though this is likely an underestimate. 70% of children with disabilities live in rural areas.[72] In humanitarian contexts, adults and children with disabilities are more likely to be left behind and be separated from their caregivers and family members and face higher risks of violence, exploitation and abuse. Women and girls with disabilities are more vulnerable to violence and exploitation on the basis of gender, age and

66 INE. 2017 Census results. http://www.ine.gov.mz/iv-rgph-2017/mocambique.

67 HelpAge International, Initial findings - Rapid needs assessment of older people Cyclone IDAI - Sofala province, Mozambique, April 2019.

68 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

69 INE. 2017 Census results. http://www.ine.gov.mz/iv-rgph-2017/mocambique..

70 INE, FAMOD & SINTEF (2009). Living conditions among people with disabilities in Mozambique: a national representative study, National Institute of Statistics, Maputo, Forum of Associations of Disabled People in Mozambique, Maputo, & SINTEF Health Research, Oslo. Table 4, page 31.

71 National Institute of Statistics (INE). Multiple Indicator Cluster Survey. 2008. Table 11.7, page 113.

72 Child Protection Area of Responsibility, Child Protection Risks and Needs in Mozambique: Secondary Data Review, April 2019

disability.[73] People with disabilities reported that shelters were not accessible and therefore they did not have access to services. A partial assessment[74] by the Forum of Organizations of People with Disabilities in Mozambique indicates that 2,000 persons with disabilities were affected in the cities of Beira, Dondo, Nhamatanda, Buzi and Gorongoza alone. Light for the World estimates that 111,000 people with disabilities have been directly affected by the disaster. In the weeks following IDAI, there were few targeted actions to benefit persons with disabilities.

People living with HIV

People living with HIV (PLHIV) are particularly vulnerable in crises due to breaks in their treatments, and damage to health facilities and medical supplies or absence of health personnel. Almost 8,000 pregnant women affected by the cyclone are HIV+. Therefore, their babies are at risk of being born with HIV. Children living with HIV are more likely to experience abandonment and/or neglect and face separation from extended family and primary care givers. Gender inequality and discrimination based on disability status, gender identity and sexual orientation discourage PLHIV to seek services in a crisis, if any are available. Existing gender inequalities may be compounded as crises-affected populations fall back on negative coping mechanisms such as transactional sex, which increases vulnerability to HIV transmission, especially for women and girls. As a consequence of the loss of livelihood and lack of employment opportunities, there may also be an increase in sex work and survival sex, greatly increasing the chance of HIV transmission and abuse.

Internally displaced people

As of the end of April, 400,000 had been displaced, of which 160,927 were sheltering in 164 temporary accommodation centers across the four provinces. The resettlement and relocation of Internally Displaced People (IDP) influences the future drivers of inequality and the sustainability of early recovery efforts. For example, the MRA reports that 49 per cent of the assessed locations reported an increase in concerns about personal safety since the cyclone. This includes a reference to the lack of police, assault and theft.[75] As highlighted earlier, relocated families are at risk of losing access to their land. This is particularly true for FFH, which are unable to send members back to the home areas to protect their belongings and land.

Mozambique has experience from previous post-flooding resettlement schemes in 2000 and 2007.[76] Experience has shown that when communities are unable to access land or livelihoods in new locations, they will become impoverished and/or end up returning to their areas of origin to reclaim land and income – often in hazardous locations. Resettlement requires time to permit planning that investigates potential impacts on displaced and host communities, assures the sustainability of such resettlements and respects the rights of the displaced and local communities. It is essential that resettlement does not compromise people's ability to access livelihoods nor drive inequality – especially for vulnerable groups.

73 UNICEF, Guidance on including children with disabilities in humanitarian action, 2017. Page 13

74 Forum of Associations of Disabled People in Mozambique, Levantamento feito pelo FAMOD sobre a situação das pessoas com deficiência afectadas pelo ciclone 20 dias após o Ciclone IDAI, April 2019

75 INGC and others, Multi-Sectoral Rapid Assessment Post-Cyclone IDAI, Sofala and Manica Provinces 1-17 April 2019.

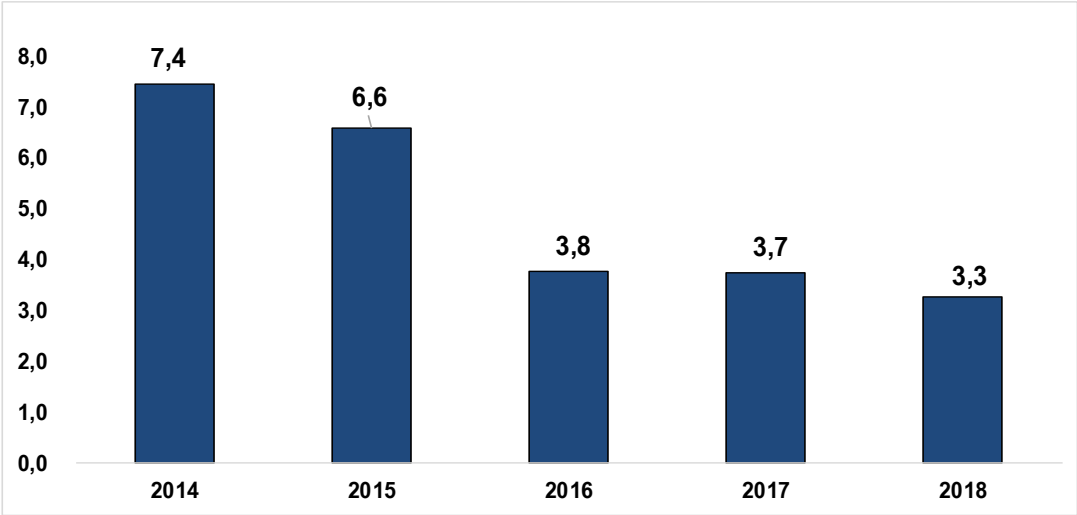
76 See for example: Artura, L., Hilhorst, D. "Floods, resettlement and land access and use in the lower Zambezi, Mozambique," Land Use Policy. 2014. 36:361–368. https://cgcmc.gov.mz/attachments/article/87/published-paper.pdf

THE MACROECONOMIC IMPACT

Sector Context

Mozambique's GDP in 2018 grew by 3.3% in real terms, falling successively from 6.6%, 3.8% and 3.7% during the previous three years, in a context of domestic demand still subdued, reflecting the combined effect of weak state financial capacity, restrictions on access to external financing and a restrictive monetary policy.

Fig. 16: Annual variation in GDP (%)

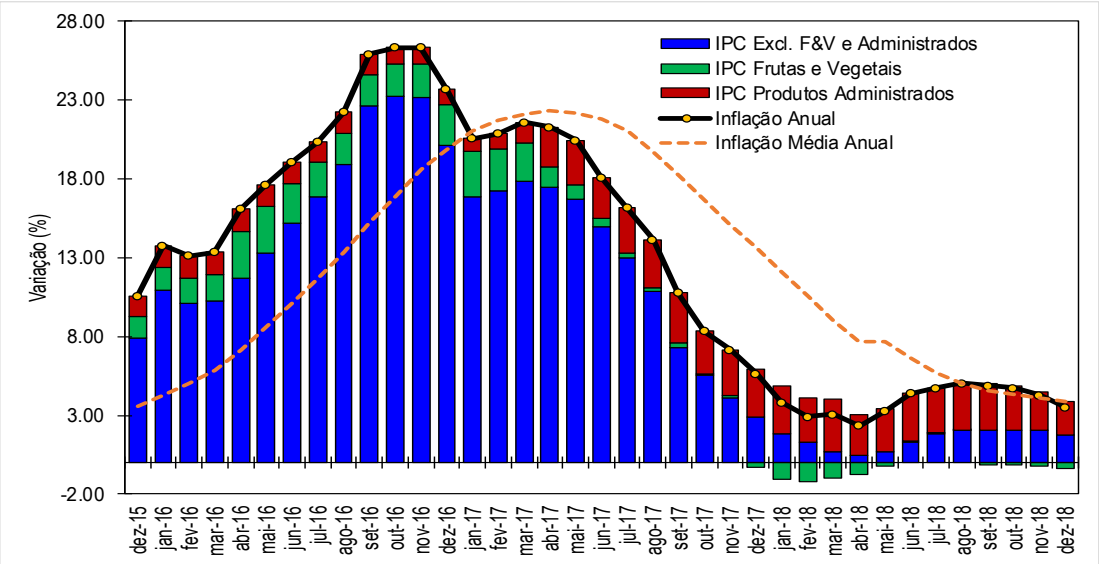


Source INE

The deceleration of economic activity reflected the slower dynamism of the agricultural sector (the sector with the greatest weight in the GDP), the extractive industry and transport and communication sectors, the climatic shocks that occurred in the fourth quarter of 2018, falling prices for the main export products, and continued weak domestic demand.

Data from INE for 2018 indicates that annual inflation in the reference year remained low and stable throughout the year. In fact, its highest point was observed in August when it reached 5.02%, after which it started a downward trend, which culminated at 3.52% in December, after standing at 5.65% in 2017. Meanwhile, annual average inflation continued the downward trend started in the previous year, rising from 13.65% in 2017 to 3.91% at the end of 2018.

Fig. 17: Annual inflation in Mozambique 2016-2018



Source: INE, 2019

In 2018, the current account deficit, excluding large projects, stood at USD 3,902 million (28.3% of GDP, after 28.8% in 2017), a slight improvement over the same period last year. However, in absolute terms, the deficit increased by USD 261 million, essentially reflecting the more pronounced increase in imports (USD 482 million) than in exports (USD 210 million) and the reduction in secondary incomes, with an emphasis on unilateral transfers.

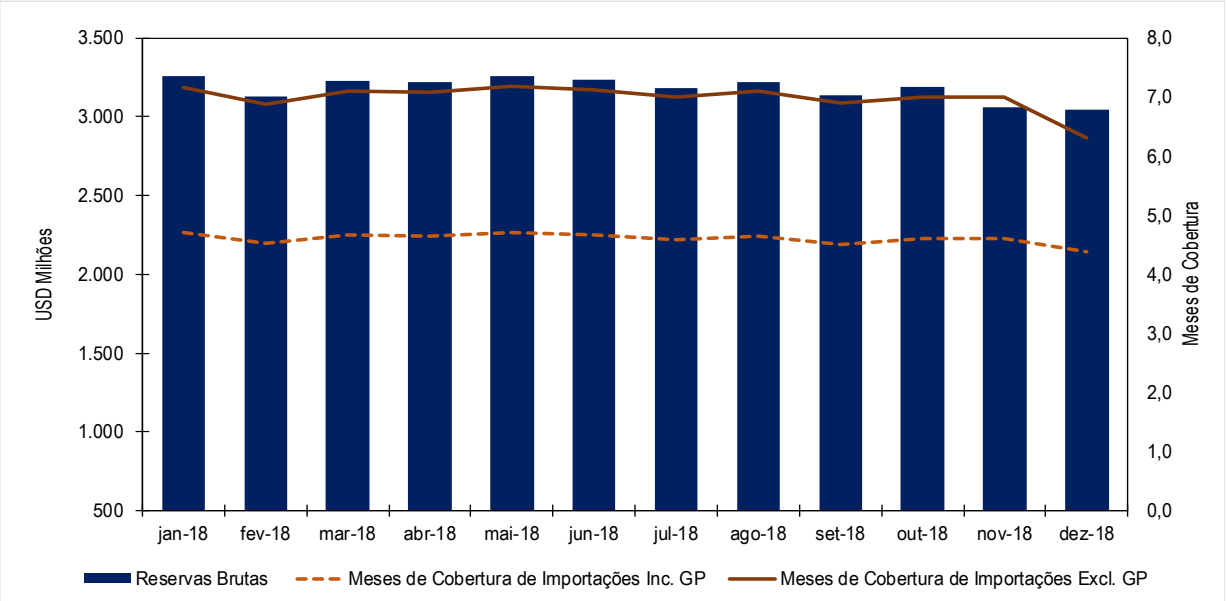
Table 14: Balance of payments (in USD millions)

	2018			Variation (2017-2018)			
	Excl GP	GP	Incl GP	Excl. GP	GP	Incl GP	Var (%)
Current Account	**-3.902**	**-525**	**-4.347**	**-261**	**-1.580**	**-1.762**	**68,1**
Assets Balance	-3.69	2.717	-973	-272	-204	-475	95,5
Exports	1.282	3.913	5.196	210	260	470	10,0
Imports	4.972	1.196	6.169	482	464	946	18,1
Service Balance	-277	-3.216	-3.431	226	-1.388	-1.100	47,2
Rend's Balance. Primary	-306	-5	-281	72	11	113	-28,6
Rend's Balance. Secondary	372	-21	338	-287	1	-300	-47,0
Capital Account	166	0	164	-38	0	-39	-19,2
Financial Account	**3.276**	**552**	**3.638**	**-1.216**	**1.624**	**218**	**6,4**
Of which							
IDE	679	2.013	2.692	-702	1.102	399	17,4
Other Balance	2.617	-1.462	943	-478	523	-168	-15,1
Global Balance	479	0	479	1.570	0	1.570	-

Source: World Bank

In order to finance the current account deficit in 2018, the Mozambican economy received foreign resources in the amount of USD 3,638 million (27% of GDP), which represents an increase of USD 218.3 million over the same period in the previous year. The balance of the financial account was essentially determined by the increase in foreign direct investment (FDI) of USD 399 million, with major projects (USD 1,101 million) outstanding. FDI in other sectors decreased by USD 588 million, which influenced the decline in Net International Reserves.

Fig. 18: Evolution of International Reserves (millions of USD and months of coverage)



Source: Banco de Moçambique

The reduction of international reserves in 2018 was due to payment of the public external debt and BM sales in the Interbank Foreign Exchange Market for Import Financing. The balance of net international reserves was USD 2,844 million in December 2018, corresponding to an annual loss of USD 218 million after the formation of USD 1,335 million in 2017. In fact, the balance of the Gross International Reserves was USD 3,040 million, equivalent to 6.3 months of coverage of imports of goods and services, excluding large projects.

The reduction of international reserves was mainly due to payment of the external debt service in the amount of USD 390 million (against USD 261 million in the same period of 2017); and net sales in the Interbank Foreign Exchange Market (MCI) in the amount of USD 374 million (compared to net purchases of USD 710 million in the same period of 2017).

The Macroeconomic Impact

The Potential Impact on Sector Growth in 2019 and 2020

Cyclone IDAI has directly affected aggregate supply through the destruction of productive capacity, mainly in agriculture, trade, transport, manufacturing and services. The preliminary data available suggests that there will be less pronounced growth in the following sectors:

Agriculture: The destruction of a total of 813,000 hectares of the total cultivated area, equivalent to about 14% of the area planned for 2019[77], plus 3,000 hectares of pasture affected, will reduce the growth of the agricultural sector to 2.0% in 2019, compared to 3.5% in 2018. This growth will come from production and productivity in other regions of the country, as well as from the expected positive effects of the second agricultural season of 2018/2019.

Industry[78]: The sector's economic growth rate is expected to be maintained at around 4.5% by 2019, driven largely by the boost of the extractive sector combined with the expected positive effect on the electric power sector and the reconstruction of infrastructure. The combination of these factors may mitigate the negative impact of cyclone IDAI on the country's manufacturing industry.

Services: The growth of the services sector is expected to slow to 1.7% in 2019, down from 2.4% in 2018, due to the destruction of infrastructure in the transport, communications, trade and tourism sectors. The port of Beira was paralyzed for a few days, and transportation and communications services were interrupted.

Table 15: Projected GDP by sector 2019

Branch of activity	2016	2017	2018	2019		
	Real	Real	Estimated	Law	Act. March	Pre Pos Idai
1. Agriculture. Animal production. Hunting and forest	3,1	4,5	3,5	5,5	4,0	**2,0**
2. Fishing	4,5	2,6	3,5	6,0	4,5	4,5
3. Extractive industry	22,5	40,8	11,7	14,0	13,0	13,0
4. Manufacturing industry	8,5	0,3	2,5	3,1	3,0	3,0
5. Electricity water and gas	12,2	-7,8	0,0	2,0	1,0	1,0
6. Construction	12	-12,4	-1,2	3,5	0,5	**1,0**
7. Trade and services	4,4	1,5	2,5	2,6	3,0	**1,0**
8. Hotels. Accommodation. Restoration and similar	8,2	0,8	2,7	3,5	3,0	3,0
9. Transport and storage. Information and communication	7,6	4,3	3,0	2,8	2,0	2,0

77 Estimate takes into account the forecast of cultivated areas of 5.8 million hectares foreseen in the Economic and Social Plan of 2019.

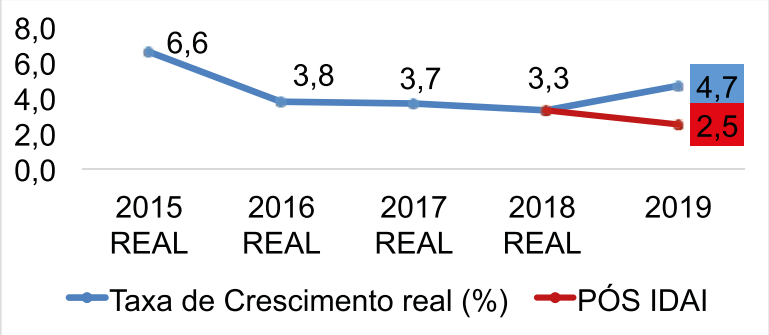
78 Industry includes manufacturing, construction, mining and distribution of energy, water and gas.

Branch of activity	2016	2017	2018	2019		
	Real	Real	Estimated	Law	Act. March	Pre Pos Idai
10. Financial services and Insurance	5,9	1,1	1,8	2,0	2,0	2,0
11. Public administration. Defense and Social Security	14,8	2,9	5,1	4,5	5,5	5,5
12. Education	7,4	2,6	6,1	5,0	7,0	7,0
13. Human health and Social action	10,2	2,7	2,8	4,5	3,0	3,0
14. Other Services	5,4	1,9	0,3	3,0	1,0	1,0
GDP Growth rate	**6,6**	**3,7**	**3,3**	**4,7**	**3,8**	**2,5**

Preliminary forecasts thus point to a slowdown in real GDP growth to 2.5% in 2019, compared with a planned growth of up to 4.7% in 2019. This preliminary estimate considers that the central region of the country has a weight of 30% in the Mozambican GDP[79] and it is assumed that the supply shock due to Cyclone IDAI has caused a fall of more than 60% of the productive capacity in that region of the country.

A recovery in economic activity is expected for 2020, with a forecast of 3.9% economic growth, reflecting the positive effects of the Reconstruction Plan in the central area of the country. The cost of recovery from cyclone IDAI has been estimated by the PDNA to be USD $2.9 billion.

Fig. 19: Projected GDP Growth



The Potential Impact on Inflation for 2019 and 2020

The supply shock caused by IDAI will generate pressure on prices in the short term, which will tend to dissipate over the medium term.

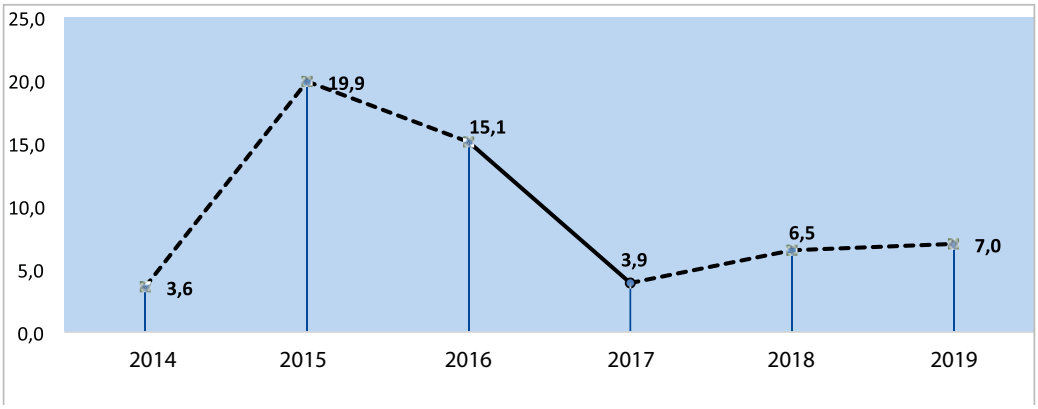
Short-term effects: the destruction of crops will result in a decline in the supply of agricultural products and consequently to an increase in the price of food products in the central zone of the country. The destruction of part of the industrial park and service companies will interrupt

79 Average of the last 5 years calculated based on INE data.

business and the commercial network, stimulating an increase in the price of non-food products. It should be noted that food products have a weight of 33% in the Beira CPI basket and 30% in the Mozambican CPI.

Medium-term effects: As resources for rebuilding and social assistance are channeled to the affected provinces, it may create additional stimulus in aggregate demand, thus generating pressure on domestic prices. In addition, in order to meet the deficit in the supply of goods and services in the affected areas, the import of miscellaneous goods is expected to increase, which may result in a deterioration of the balance of trade. This situation could lead to a pressure on the demand for foreign currency and consequently to induce more pressure on the foreign exchange market, even if moderate, taking into account the prospects of foreign aid inflows to mitigate the effects of the disaster.

Fig. 20: Mean Values of Projected Inflation 2019-2020



Source: INE, WB estimates

Given the combination of these effects, annual inflation for the band is expected to accelerate from 6.0% to 8.0% by the end of 2020, against the previous projection of 6% to 7%. Despite this slight upward revision, inflation is expected to remain in the single-digit. It should be noted that the city of Beira has a weight of 18.9% in the overall inflation of the country. The acceleration of prices in the city of Beira may be attenuated by the price stability that occurs in the cities of Nampula and Maputo which together have an aggregate weight of 81.1% in total inflation. Another consideration is the planned distribution of seeds that have short maturation to accelerate agricultural recovery.

The disaster will have a significant impact on the overall growth and inflation prospects of the country in the short and medium term and can condition the conduct of monetary policy.

Table 16: Evolution of Key Macroeconomic Indicators (2015-2019)

Macroeconomics indicators	2015	2016	2017	2018	2019		
	REAL			Est.	Law	Act. March	Pre Pos Idai
RIL (import coverage months)	5,91	4,19	6,81	6,28	6,0	5,4	**5,3**
Annual average exchange rate (MT/USD)	38,3	63,1	63,9	60,9	60,5	62,0	**64,0**
Exports (million USD)	3,413	3,328	4,725	5,196	5,160	5,591	**5,479**
Foreign direct investment (million USD)	4,034	3,093	2,293	2,692	5,769	2,796	**3,177**

Source: Bank of Mozambique

In general, the effect of monetary policy measures on a temporary supply shock such as that caused by cyclone IDAI is limited. In other words, the monetary policy instruments are inefficient to mitigate the effects of this type of shock. This was a supply shock that affected a specific region of the country. In this context, the evolution of consumption, business confidence and expectations of economic actors beyond the short-term horizon will be the subject of continuous monitoring by the Central Bank, given the potential impact of these indicators on growth and inflation projections over the medium term.

Previous experience in Mozambique with climate shocks reveals the potentially high impact on its economy. Between 1992 and 2016 disasters resulted in economic losses valued at 14% of GDP in cumulative terms.[80]

80 IMF (2018). "Enhancing Resilience to Climate Change in Mozambique: Risks and Policy Options". Republic of Mozambique Issues, IMF Country Report No. 18/66

SECTOR SUMMARY REPORTS

PRODUCTIVE SECTOR

AGRICULTURE

Sector Context

In Mozambique agriculture accounts for 25% of its Gross Domestic Product (GDP), and the sector employs about 80% of the country's workforce.[81] Up to 3.2 million smallholder farmers, with an average plot of 1.2 hectares (ha), account for 95% of the country's production, while 400 commercial farms produce the remaining 5%.[82]

The main growing season starts with the first rains in September in the south and December in the north. There is also a minor growing season, based on residual soil moisture, from March to July, accounting for approximately 10% of total output.[83]

Mozambique's major crops are maize with 29 % of the total cultivated area, cassava with 13%, sorghum with 11%, beans with 9% and rice with 5%. Maize is grown in all regions of the country by about 79% of rural households. The country's main cash crops are tobacco, cotton, sesame, sugarcane and tea. Tree crops, especially coconut and cashew, grown by smallholder farmers, are an important source of foreign exchange earnings, and contribute to household food security.[84] Exports are dominated by cash crops such as tobacco with 37% of agricultural exports, sugar with 12% and cotton with 7%.[85]

In Manica, Sofala, Tete and Zambezia, the four provinces most affected by cyclone IDAI, agricultural production is very important for the country, in terms of both food and cash crops. Prior to the cyclone, Manica and Sofala were the breadbasket of Mozambique, producing approximately 25% of the national cereal output.[86] Sofala Province, by itself, is responsible for about 75% of the national sugar production, and for an estimated 64% of all the country's cash crops, which contribute significantly to agricultural exports.

There are generally low levels of irrigation coverage in the country. About 180,000 ha are equipped with irrigation infrastructure and only about half of this is currently fully operational. The provinces of Manica, Nampula, Sofala, and Zambezia (three of the four affected provinces) have the highest agricultural potential, covering some of the most fertile soils in the country, along the Zambezi River basin, which accounts for about 17% of the irrigated land and 47% of the country's water resources.[87]

Although animal husbandry in Mozambique is an underdeveloped sector, cattle, goats, sheep and pigs are reared in extensive grass-based (ruminants) or back-yard scavenger systems. There is, also a small fast-growing modern poultry industry. Livestock population is estimated at 1.2 million heads of cattle, 4.5 million sheep and goats, 1.3 million pigs, and 18 million poultry. Beef production was estimated at 22,000 tons; pig meat, 91,000 tons; poultry meat, 22,000 tons; cows' milk, 75,000 tons; and hen eggs, 14 million.[88 and 89] The southern region is the heart of livestock activities because animals there are less prone to diseases.[90]

81 Economies Africaines, 2017

82 Food and Agriculture Organization, Emergency Mozambique Fact Sheet

83 World Bank, 2006, Mozambique Agricultural Development Strategy Stimulating Smallholder Agricultural Growt

84 Special Report FAO/WFP Crop and Food Security Assessment Mission to Mozambique, 2010

85 Food and Agriculture Organization, Emergency Mozambique Fact Sheet

86 FAO, 2019, Belgium contributes to enhancing the food security and nutrition of Cyclone Idai-affected populations in Mozambique

87 INIR. 2015. Programa Nacional de Irrigação

88 FAO Statistic Yearbook 2010 – Resources, retrieved 9 May

89 Mozambique at a glance, 2/25/2011 - World Bank

90 Mozambique Agricultural Development Strategy Stimulating Smallholder Agricultural Growth, World Bank, 2006

Mozambique depends on food imports to satisfy a large portion of its domestic food needs. It imports rice (18 % of agricultural imports), wheat (14 %) and oils (13%).[91]Countrywide, despite significant progress in the last decades, about 24% of households are food insecure and 43% suffer from chronic malnutrition, affecting almost one in every two children under the age of five.[92]

Prior to Cyclone IDAI, the country's food security situation had already deteriorated due to several months of drought during the 2017-2018 season. An estimated 1.78 million people were already classified as being severely food insecure from September to December 2018 in the country.[93]

The Effects on Agriculture

The disaster occurred close to the harvest period and caused extensive losses in food and cash crops and the death of hundreds of livestock in Sofala, Manica, Tete and Zambezia, thus compromising the performance of the 2018/19 agricultural season, livelihoods, income and food security.

The Crop Sub-Sector

At least 715,378 hectares of cultivated land were flooded by IDAI.[94]A total of 433,056 farming households were affected, 50,902 of whom are from Manica, 254,450 from Sofala, 11,017 from Tete and 110,395 from Zambezia province. Most farmers have reported losing all or a large proportion of their seed stores as well as the standing crops they were about to harvest.[95]

Cotton is a major cash crop produced in Sofala and Tete. Overall, 541 cotton producing households were affected; a total of 421 ha of cotton fields were flooded and 148,600 kg of the production was lost. The estimated value of the lost cotton production was about 3 million MZN at farm gate price. This will directly impact the affected households' incomes and, as a consequence, their level of food security and their ability to cover their basic needs. Secondly the stakeholders performance involved in the cotton value chain will be negatively affected as well as the country's export earnings.

Cashew was another cash crop that was heavily affected; cashew nuts account for a significant portion of the country's agriculture export earnings. Overall, 34,025 cashew nut trees were fully destroyed, mainly due to the strong winds or the floods that uprooted the trees, resulting in 388,300 kg of lost production and affecting a total of 1,640 cashew farming households.

In addition, a total of 20,437 cashew nut trees will experience a reduction in production by an estimated average of 50% from their normal production capacity. This is attributed either to the loss of fruits or the reduced fruit growth, while standing in flooded land. This affected a total of 739 cashew farming households.

91 USDA Foreign Agricultural Service – Mozambique 2015 Agricultural Economic Fact Sheet.

92 USAID, 2011, Demographic and Health Survey, Mozambique

93 SETSAN, 2018, IPC report October 2018

94 INGC, 17/04/2019, press release

95 FAO, 2019, Belgium contributes to enhancing the food security and nutrition of Cyclone Idai-affected populations in Mozambique

Table 17: Lost areas of food crops, yields and lost production

Crops	Destroyed area (ha)	Yield (kg/ ha)	Lost production (kg)	Crops	Destroyed area (ha)	Yield (kg/ ha)	Lost production (kg)
Manica Province				**Sofala Province**			
Corn	156,455	1,700	265,974	Corn	97,406	2,021	196,856
sweetpotato	20,791	6,000	124,746	Rice	442,100	244	107,758
Cassava	10,500	8,000	84,000	Millet	44,823	1,022	45,826
Beans	20,861	800	16,689	Casava	9,218	9,106	83,942
Fruits	20,861	12,000	250,329	Vegetables	7,664	8,464	64,865
Soja	13,038	1,400	18,253	Sweetpotato	5,055	6,620	33,465
Sesame	13,038	1,200	15,646	Sugar cane	408	56,581	23,085
Cotton	128	400	51,200	Beans	13,602	774	10,533
Vegetables	5,215	15,001	78,228	Sesame	26,988	687	18,550
				Groundnuts	7,730	800	6,184
				Cotton	330	340	112
Zambezia Province				**Tete Province**			
Corn	23,043	1,500	34,564	Corn	5,625	1,200	6,750
sweetpotato	10,820	6,000	64,921	Groundnuts	3,629	600	2,178
Cassava	54,702	7,000	382,913	Millet	2,178	800	1,742
Beans	14,026	700	9,818	Beans	4,537	800	3,629
Rice	93,775	1,500	140,662	Vegetables	2,178	14,997	32,663
Sesame	4,007	900	3,607	Cotton	91	400	36,400

The total value of the loss of cashew nut production is estimated at 568 million MZN at farm gate price. Again, the affected households' losses in income will impact their food security and living conditions. In addition, the earnings of the associated upstream value chain stakeholders will be reduced, as well as the export earnings of the country.

A remarkable number of cashew nut tree saplings were also lost (482,900 saplings) mainly in public owned nurseries but, to e lesser extent, also in privately owned nurseries. This will have a negative impact on the replacement of old cashew trees and/or on the expansion of new plantations.

The damage and loss to the crop sub-sector is estimated at 960.5 million MZN, of which 38% were in Manica, 36% in Sofala, 22% in Zambezia and only 3% in Tete province. The damage will result in income losses and additional expenditures for the affected farming households and the small, medium or large farming enterprises involved in the production of these cash crops (cotton, tobacco, Cashew, etc.). In addition to the economic loss for direct producers, there will be losses too along the different value chains.

The combination of floods and strong winds also destroyed agriculture infrastructure, such as farm roads, small dams, and farm buildings (warehouses, silos and other buildings). Floodwaters also damaged stored agro-related products (inputs or already harvested crops). Almost 91% were reported in Sofala, followed by 8% in Manica; the reported damages in Tete and Zambezia together account for less than 1%.

Animal Husbandry

The livestock sector was impacted in two ways. On the one hand, a great number of animals died as a result of the cyclone. On the other hand, the animals that survived are affected by the lack or low quality of pasture, spoiled fodder / feed, poor quality drinking water, as well as the higher probability of animal disease outbreaks. Zambezia, Tete and Manica, reported a high number of poultry losses, due to the higher number of poultry farms in the affected areas. In Sofala, the impact was mainly on cattle due to the presence of dairy factories nearby, and on small ruminants and pigs, where losses were higher compared to the other three provinces.

Table 18: Number of Lost animals and affected livestock heads, province specific

Province	Total number of dead animals				Total number of affceted animals			
	Manica	Sofala	Tete	Zambezia	Manica	Sofala	Tete	Zambezia
Milking cows	372	2,690	72	79	12,524	54,749	71,682	22,076
Other cattle	260	2,142	312	286				
Small ruminants	490	1,180	405	14	248,618	430,285	237,876	470,971
Pigs	180	2,686	142	126	19,627	24,637	11,209	54,303
Layers	18,674	6,803	26,123	74,729	1,336,604	1,217,785	383,202	294,766

In addition to dip-tanks, animal watering points and the associated boreholes, a large number of poultry farms and livestock stables were totally or partially destroyed. Also, some quantities of animal feed/fodder and an assortment of veterinary drugs and equipment stored at the farm level were lost. The overall value of the lost animal products are estimated at 2,754 million MZN; of that loss, Sofala accounts for 36% while the other three provinces each account for an estimated 22%. Out of the total value of 31 million MZN of lost animals, 50% were from Sofala, 24% for Zambezia, 14% for Mania and 12% for Tete province. The damages in livestock infrastructure and goods are estimated at 870 million MZN; Sofala accounts for more than 86% of the total.

Table 19: Summary of damage and loss by subsector and province

Sub sector	Damage (MZN)	Damage (US$)	Loss (MZN)	Loss (US$)	Public (US$)	Private (US$)
Crops (annual / perennial)						
Manica	76,134,243	1,189,598	12,410,904,560	193,920,384	195,109,981	0
Sofala	964,130,294	15,064,536	9,722,806,840	151,918,857	166,983,393	0
Tete	33,283,333	520,052	835,297,380	13,051,522	13,571,574	0
Zambezia	28,021,023	437,828	7,086,639,827	110,728,747	111,166,576	0
Total crops	1,101,568,893	17,212,014	30,055,648,607	469,619,509	486,831,523	0
Livestock						
Manica	75,234,350	1,175,537	599,354,720	9,364,918	10,540,454	0
Sofala	820,443,495	12,819,430	994,232,565	15,534,884	28,354,313	0
Tete	56,244,550	878,821	593,997,900	9,281,217	10,160,038	0
Zambezia	50,104,150	782,877	567,075,650	8,860,557	9,643,434	0
Total Livestock	1,002,026,545	15,656,665	2,754,660,835	43,041,576	58,698,240	0
Administratif infrastructures						
Manica	0	0			0	0
Sofala	46,082,140	720,033			0	720,033
Tete	0	0			0	0
Zambezia	0	0			0	0
Total admin. Infrastr.	46,082,140	720,033	0	0	0	720,033
Irrigation						
Manica	290,380,800	4,537,200			4,537,200	0
Sofala	189,817,344	2,965,896			2,965,896	0
Tete	41,472,000	648,000			648,000	0
Zambezia	384,173,798	6,002,716			6,002,716	0
Total Irrigation	905,843,942	14,153,812	0	0	14,153,812	0
Grand Total	3,055,521,520	47,742,524	32,810,309,442	512,661,085	559,683,575	720,033

Irrigation Infrastructure

An estimated total of 4,309 ha of irrigated land and the associated irrigation infrastructure have been affected. The impact was on either the concrete structures (small dams, gates, bypasses, etc.) or the actual irrigation channels or sprinkler installations. This affected about 3,391 enterprises, mainly small and medium scale farming enterprises.

Table 20: Affected irrigation area and number of beneficiaries

Province	Total area affected of irrigation (ha)	Beneficiaries
Manica	1,407	828
Sofala	920	1,541
Tete	120	30
Zambezia	1,862	992

The total value of the irrigation-related damages is estimated at 1,500 million MZN; about 43% is accounted for by Zambezia, 33% by Manica, 21% by Sofala and 3% by Tete province.

Sector Governance

There was partial or total damage to the administrative buildings of the Ministry of Agriculture (MASA) and those of some other agro-related institutions (e.g. cashew, cotton, etc.) in the affected districts. The majority of damage value (95%) is reported for Sofala province, with an estimated 46,082 MZN. The provincial capital city of Beira, where the cyclone made landfall, suffered substantial damages to its infrastructure. The province of Manica accounted for only 5% of the reported damages. As of the writing of this report, Tete and Zembiazia had not reported any damages to administrative buildings.

Recovery Needs

Given the extent of the damage, a holistic response must be considered in the affected areas, in order to re-establish the productive capacity of the agricultural sector. A pragmatic approach is to link the emergency / recovery response with development programmes, through a coordinated approach that ensures that emergency and recovery interventions reinforce the country's development goals.

The main recovery needs identified in the agricultural sub-sectors are:

- Reestablishment of annual food and cash crop production for small scale farmers and agro-enterprises, including infrastructure rehabilitation in order to ensure food security, income generation and commercially needed cash crop products (cotton, etc.);
- Recovery interventions for perennial crop production (cashew nuts, coconut), including infrastructure rehabilitation, to ensure the recovery of income by affected households and enterprises;

- Recovery of livestock activities at small scale and enterprise levels, including the rehabilitation of related infrastructure;
- Reestablishment of the affected irrigation infrastructure;
- Reinforcement of the sector's governance capacity through the rehabilitation of administrative infrastructure;
- Reduce the vulnerability and risks to future disasters for the agriculture and livestock communities.

Interventions in the short-term

The top recommended priority for recovery over the short-term is to restore the productive capacity of small-scale farming and livestock-keeping households. This is critically important in guaranteeing food and nutritional security, promoting employment and the well-being of communities. This would largely involve the provision of agriculture inputs, tools, irrigation kits (where applicable) as well as the replacement of lost livestock, focusing on poultry and milk cows to begin with; these are important for both nutrition and income security in the short-term. Also key in this early phase is the rehabilitation of tree nurseries for perennial crops, especially for cashew and coconut, as well as starting the cleaning of irrigation channels.

Interventions in medium-term

Over the medium term, recovery interventions should aim to rehabilitate public infrastructure, including extension offices, as well as other administrative buildings. A matching grant facility will be applied in support to the commercial SME commercial infrastructure rehabilitation programme (75% recovery programme and 75% for small-scale enterprise; 50% recovery programme and 50% medium-scale enterprise). Also important in this phase is the provision of small ruminants, pigs and other cattle to small-scale livestock owners who lost their animals.

Interventions in the long-term

Over the long-term, recovery actions should focus on replanting perennial tree orchards, and the rehabilitating irrigation structures and farm infrastructure. A matching grant facility will be used to support the large (25% recovery programme and 75% large-scale enterprise) enterprises commercial infrastructure rehabilitation programme.

The table below summarizes the recommended recovery interventions for the agricultural sector and their cost over the short, medium and long term. A total of 13,046,546.9 million MZN or USD$ 203, 852, 295 is required in total to finance all sector recovery needs, of which almost 56% are needed over the short term, 35% over the medium term and 9% over the long term.

Table 21: Summary of recovery needs (short, medium and long-Term)

Agriculture / Livestock / irrigation / DRR	Item	Priority	Description	Cost	
		(1 to 5)		MZN	USD
Short term	Provision of seeds and tools for field food and cash crops	1	Restart field crop activities	3.370.537.320	52.664.645,63
	Provision of poultry and milking cows	2	Restock lost polutry and cows	665.745.240	10.402.269,38
	Provision of vegetables seeds and tools for backyards	3	Reestablish backyard farming	3.128.424.000	48.881.625,00
	Provision of tools for canal cleaning Cash for work approach	4	Restore irrigation structures	56.654.278	885.223,10
	Reestablishment of tree nurseries	5	Restart replanting of perennial trees	1.678.545	26.227,27
	Capacity building	6	capcity building	244.929.805	3.827.028,20
Medium-term	Provision of cassava cuttings and sweetoatoes vines	1	Restore lost field crops	1.430.279.600	22.348.118,75
	Provision of small ruminants, other cattle and pics	2	Restock lost small ruminants, other cattle and pics	159.042.600	2.485.040,63
	Vaccination of surviving animals	3	Avoid losses of more animal assets	1.736.398.339	27.131.224,05
	Rehabilitation of irrigation structures	4	Concret structures and canal cleaning	505.793.237	7.903.019,34
	Rehabilitation of chcken farms	5	Restocr egg and poultry production	271.917.000	4.248.703,13
Long term	Rehabilitation of livestock infrastructures	1	Reestablishment of livestock production	408.382.200	6.380.971,88
	Replanting of perennial cash crops (cashew, coconut)	2	restart export perennial cash crops	400.690.023	6.260.781,61
	Matching grant facility for small entrpises registered damages (50%)	3	Rehabilitation of agro and livestock infrastructures	13.617.703	212.776,60
	Rehabilitation of irrigation structures	4	Concret structures and canal cleaning	340.147.348	5.314.802,31
	Matching grant facility for medium and large entrpises registered damages (50%)	5	Rehabilitation of agro and livestock infrastructures	255.201.812	3.987.528,31
	Rehabilitation of administrative infrastructures and assets	6	Improve public services	57.107.833	892.309,89

Implementation arrangements

Recovery in the sector will be led by the Ministry Agriculture and Food Security (MASA) in coordination with the Idai Post-Cyclone Reconstruction Office and Local Governments. MASA will create a Project Coordination Unity (PCU) consisting of a Coordinator, Monitoring and Evaluation Officer, a Financial Management Officer and a Logistics and Procurement Officer. The activities will be implemented through the signing of agreements and / or memoranda of understanding with Service Providers who will be responsible for implementing the recovery interventions identified in the programme, for example, the supply of farm equipment, the reconstruction of infrastructures and the supply of animals and vaccines. Provincial and district administrations of the affected provinces and districts will be directly involved in overseeing the effective implementation of the different recovery activities.

Monitoring and evaluation will be an indispensable component for informing and reorienting decisions that ensure effective and efficient implementation, such as the achievement of set targets and the performance of objective indicators. To the extent possible, monitoring and evaluation will align with existing mechanisms for monitoring government programmes. There will be a differentiation between, on the one hand, result indicators which assess the achievement of specific objectives, and, on the other hand, product indicators which measure the degree of compliance with the activities carried out and the combination of quantitative and qualitative measures for monitoring.

FISHERIES

Sector Context

According to the 2012 census and other references, the four cyclone-affected provinces of Sofala, Manica, Zambézia and Tete are home to 45,943 fisher-folks, 24,239 fishing gear sets, 19,407 fishing vessels, and 928 out-board engines.[96] The 4 provinces combined produced 144,638 tons of fish in 2017.

In territorial terms, about 25% of the total number of fishermen are in Zambezia Province, indicating the importance of this activity for the province in the absorption of labor.[97] The province of Sofala is divided into 13 districts, of which 7 are coastal (Marromeu, Cheringoma, Muanza, Dondo, Beira, Búzi and Machanga), home to about 18,000 artisanal fishermen.

*1 page+ 1 table*In aquaculture, the pre-cyclone situation was characterized by the existence of 1,595 small-scale fish farmers with 1,804 production units (ponds and cages), stocked with 3,129,240 fry and an expected production in 2019 of approximately 968 tons of fish. The fry and feed production unit, located in Beira, has an installed capacity of around 250 million fry per year.[98]

With regard to mari-culture, the first shrimp farming development was established in the mid-1990s in Zambezia Province, in the central-north region, one of the most suitable regions for shrimp culture, with an overall initial potential of over 6,000 Ha. In 2000, another joint venture (Mozambican-Chinese project) was established in Sofala Province for shrimp farming.

The Effects on Fisheries

It should be noted that by the time of writing this report, the situation was still very fluid and not all the required information had been collected in the fisheries sector. Therefore, while some of the tables presented herein may have the 'not available' (na) caption, it should not be interpreted to mean that there was zero effect.

Wind and floods brought by cyclone IDAI damaged fishing boats and equipment for the villages along the coastline as well as the infrastructures that supports aquaculture.[99] In fishing communities, the cyclone affected 2,774 fishermen, and damaged 2,107 vessels and 69 engines, with more than 85% recorded in the province of Sofala. A total of 2,412 fishing gear sets were lost, of which 81% were recorded in Tete province, with an estimated loss of 5,210 tonnes of fish production in Sofala province, but no data was obtained from the other provinces.

By the time of report writing, no information had been received with regard to the commercial fishing sector in Tete province.

The overall damage to fishery infrastructure was estimated to be 703.7 million MZN; about 92% of which was in Sofala province, 7% in Manica and 1% in Zambezia. The total losses were

96 PES, 2012, Censo da Pesca Artesanal, Boletim Estatistico da Pesca e Aquacultura & Relatórios de Balanço

97 INDPPA, 2016, Artisanal fishing census.

98 PES, 2012, Censo da Pesca Artesanal, Boletim Estatistico da Pesca e Aquacultura & Relatórios de Balanço

99 FAO, 12/04/2019, Belgium contributes to enhancing the food security and nutrition of Cyclone Idai-affected populations in Mozambique

estimated at 253.2 million MZN; 58% of which was in Sofala province, 39% in Manica and 4% in Zambezia.

In aquaculture, ponds and cages are usually built next to water bodies, especially riverbeds and in low sea areas, where the impact of the cyclone and flooding was severe. Thus, 895 small-scale fish farmers were affected, 562 ponds occupying an area of 170,935 m² were destroyed, and 375 tons of fish was lost. Other damage caused by the cyclone is presented in the table below.

Table 22: Summary of damage and loss in Fishery and Aquaculture

Damage and Loss	Damage Local Currency (MZN)		Loss Local Currency (MZN)	
	Public	Private	Public	Private
Total Fisheries	0	703.659.550	0	253.200.150
Total admin. Infrastr.	366.195.000	0	0	0
Total DRR	n/a	n/a	n/a	n/a
Total damages	366.195.000	703.659.550	0	253.200.150
Overall total	366.195.000	703.659.550	-	253.200.150

Many hatcheries were also affected, mainly the buildings and tanks where the fingerlings are produced. Over 1.7 million fingerlings were lost; 43% of which was in Manica, 29% in Sofala and 27% in Zambezia province.

Nearly all (99%) of the damages recorded on public administration infrastructure and buildings were recorded in Sofala. This is largely due to the fact that most of the research stations and hatcheries for the four provinces are located here. In addition, all the structures linked to fish and seafood exports, as well as the fish harbor and warehouses are located in the same province. The total damage to administrative infrastructure in Sofala is estimated to be 363,772 MZN.

In the city of Beira, the public fry and fish feed production unit, located suffered damages to its stored production and infrastructure, which plays an important role in the production and supply of fry and fish feed to the provinces affected by cyclone Idai.

Recovery Needs

The following are the main recovery needs identified in the fishery sector.

- Reactivation of fishing and aquaculture activities for small scale fishing communities;
- Supporting the small and medium capture-fishing and aquaculture enterprises through the rehabilitation / replacement of the affected infrastructure;
- Reinforcing governance through the rehabilitation of administrative infrastructure; and
- Reducing the vulnerability and risk of disasters in fishing communities, including aquaculture activities and small and medium enterprises.

Table 23 summarizes the cost of recovery for the fisheries subsector. Over US$12 million is required to cover recovery needs, of which almost 1/3 is needed for short-term interventions.

Short-term recovery

The top priority is to restore the productive capacity of artisanal fisheries and aquaculture because they play an important role in guaranteeing food and nutritional security, promoting employment and the well-being of communities. For the artisanal fisheries, this largely relates to the replacement of canoes, provision of improved fiberglass boats, as well as the replacement of fishing gear and the purchase of out-board engines.

For small-scale aquaculture, the focus will be on the reconstruction of ponds/tanks in safer locations, with protection dikes, as well as the provision of environmentally friendly cages. This will be followed with the stocking of the ponds/tanks and cages. A continuous availability of fry/fingerlings will be essential for the recovery of the aquaculture subsector; this will be achieved through the rehabilitation of the main hatcheries, such as the fry production facility located in Beira. In addition around 260 tons of feed will be also provided.

Table 23: Summary of short and medium-term recovery cost

Fishery / aquaculture	Item	Priority (1 to 5)	Description	Cost	
				MZN	USD
Short term	Rehabilitation of ponds / cages	1	Rehab damaged ponds	75.777.291	1.184.020
	Provision of gears	2	Replacement of lost fishing gear / caches	20.215.741	315.871
	Provision of fingerlings	3	Restocking of ponds / caches	12.892.455	201.445
	Provision of small fishing boats, support enterprises	4	Replacement of lost canoes , fibreglass and engines support enterpises	388.457.775	6.069.653
	Rehabilitation admin infrastructures	5	Rehabilitation damaged hatchery	148.308.975	2.317.328
	capacity building admin staff	6	trainings workshops	1.037.700	16.214
Medium term	rehabilitation admin infrastructures	1	Rehabilitation damaged admin intrastructures	346.054.275	5.407.098

Medium-term recovery

The priority over the medium term will be on the rehabilitation of public infrastructure and administrative buildings, as well as access roads to fishing centers, fish markets and corresponding structures. A matching grant approach will be applied in support of the small and medium enterprises' commercial infrastructure rehabilitation programme. Other sectors will be responsible for the rehabilitation of houses for extension workers (housing sector) as well as for the infrastructure damaged in the fishing port of Beira (transport sector), which play an important role in the value chain.

Implementation arrangements

Institutionally, recovery activities in the fisheries and aquaculture sub-sector will be led by the Ministry of the Sea, Inland Water and Fisheries in coordination with the Post-Cyclone Idai Reconstruction Office and Local Governments. MIMAIP will create a Project Coordination Unity (PCU) consisting of Coordinator, Monitoring and Evaluation Officer, Financial Management Officer and a Logistics and Procurement Officer.

Sector recovery activities will be implemented through the signing of agreements and/or memoranda of understanding with Service Providers who will be responsible for carrying out actions to restore the needs identified in the recovery programme. Such activities will include, for instance, supplying boats and engines, building ponds/tanks and cages, and supplying fish feed and fry. Provincial and district administrations in the affected districts will be directly involved in overseeing the effective implementation of the different activities.

Monitoring and evaluation is indispensable for informing and reorienting decisions to ensure effective and efficient implementation, ensuring the achievement of targets and the performance of objective indicators. To the extent possible, monitoring and evaluation will align with existing mechanisms for monitoring government programmes. There will be differentiation between result indicators which assess the achievement of specific objectives, and product indicators which measure the degree of compliance with the activities carried out and the combination of quantitative and qualitative monitoring.

INDUSTRY AND COMMERCE

For the assessment of the industry and commerce sector, a technical team from the Confederation of Economic Associations of Mozambique (CTA) traveled to Beira City to collect relevant information, assess the damages and gather the views and recommendations of the local business community on measures needed to support recovery. The same exercise was carried out in the provinces of Manica, Tete and Zambézia through the Provincial Business Delegations. This sector chapter constitutes a preliminary report of the results obtained during the assessment carried out.

The Effects on Industry and Commerce

The damage caused by Cyclone Idai to the private sector in the 4 affected provinces is estimated at USD 115 million in relation to 356 productive units. The greatest losses were registered in the province of Sofala with a weight of 99.5%, as shown in Table 24.

Table 24: Estimated Damage on Businesses in the Four Affected Provinces

Província	Affected Districtis	Businesses Covered	Damage (Valores em Mil USD)	% of Total
Sofala	Cidade da Beira, Dondo, Nhamatanda, Búzi, Muanza, Gorongosa	311	119.306,6	99.5%
Manica	Chimoio, Gondola, Macate, Mossurize, Vandúzi, Manica	115	286,2	0.2%
Tete	Mutarara, Doa, Tete, Moatize, Chiúta e Changara	3	282.72	0.2%
Zambézia (a)	Chinde, Lugela, Maganja da Costa, Mopeia, Namacurra, Pebane, Mocuba, Molumbo, Morrumbala, Nicoadala, Derre, Gurué, Gilé	ND		
Total		429	119.875,5	100%

Note: Zambézia's information refers to losses generated by the destruction of public infrastructure to support agricultural production, impacting mainly small family farmers.

Sofala Province

In Sofala province, it was possible to collect information from 246 companies, and it was found that 90% of the warehouses in the industrial park were partially damaged. In addition, it was possible to infer that the greatest damage suffered by the companies in general was the destruction of the roofs of the warehouses, the offices and manufacturing facilities.

However, some companies, especially companies in the industrial sector, mentioned that they also suffered heavy damage to the machinery and various work equipment due to the heavy rains and flooding of facilities which adversely affected the machines and equipment of the factories.

This scenario meant that economic activity in the province of Sofala, mainly in the city of Beira, was totally suspended for 6 days after the cyclone occurred according to the companies interviewed. However, companies have been gradually process resuming their activities, aware that there is a huge challenge associated with rebuilding their business plans and requalifying the viability of their enterprises.

Table 25 shows the "indicative" value of the damage caused by cyclone IDAI in all business sectors of activities in Sofala. The overall damage in relation to the 246 companies interviewed is approximately USD 114.9 million.

Table 25: Estimated Damage by business activity in Sofala

Subsector	Nº of Bussinesses Covered	Nº de Trabalhadores	Valor do Prejuízo em Milhares de USD
1. Industry	28	2,745	31,248.95
2. Agro-business	17	735	28,493.18
3. Commerce	53	2,397	17,166.22
4. Transporte & Logistics	35	2,560	14,290.82
5. Services	64	2,152	9,885.13
6. Construction	36	1,590	6,337.14
7. Fishery	6	2,314	6,311.63
8. Hotels and Restaurants	29	589	4,622.29
9. Poultry	35	143	803.90
10. Planing	8	292	147.33
Total	**311**	**15,517**	**119,306.59**

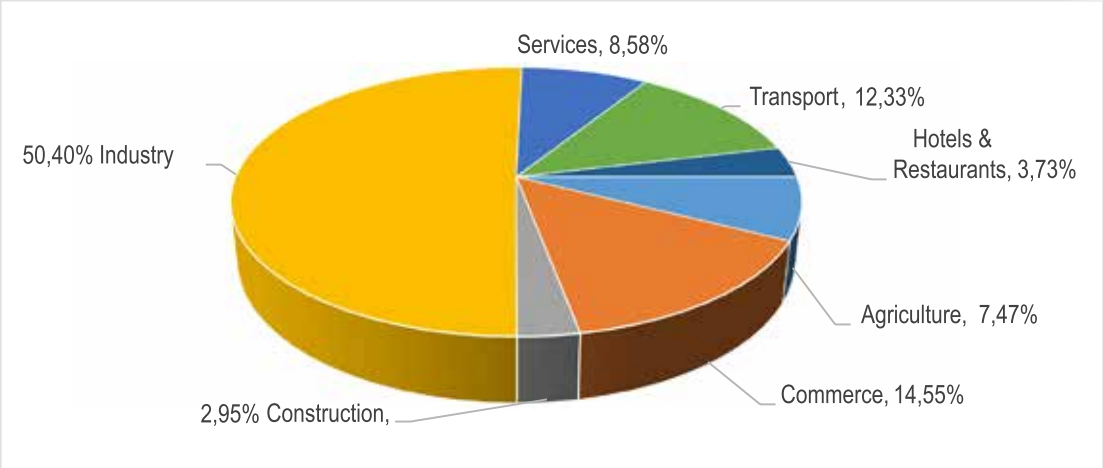
Impact from a Sectoral Perspective

The most affected sub-sector was industry with estimated losses of USD 31.2 million, due to the widespread destruction of infrastructure, machinery, raw materials, office equipment, and protective equipment.

The Agriculture sector had an estimated loss of USD 8.5 million. Of the 39 companies covered in the agribusiness sector, 64% (25 companies) are in poultry production and 7.7% (3 companies) are in fisheries. Of the total losses in the agribusiness sector, about 70% (USD 6 million) is in the fisheries sector.

In summary, as shown in Fig 21, the Industry sector, which contains about 36 companies out of the 246 companies evaluated, had the largest loss, corresponding to 50.4% of the total loss, followed by the Commerce sector whose loss amounted to 14.6% of the total.

Fig. 21: Damage share by Subsector

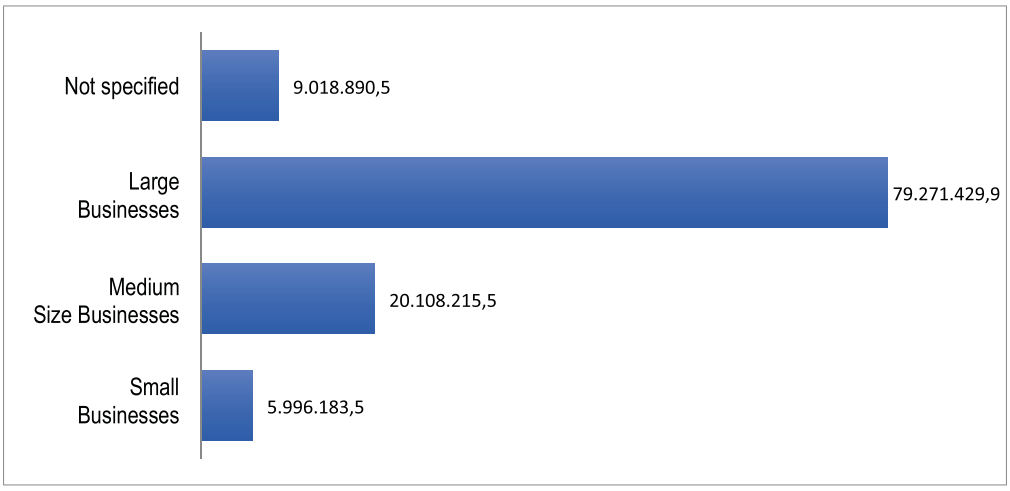


The service sector, which is the predominant sector in the business sector of the city of Beira, with about 56 companies out of a total of 246 evaluated, had an estimated loss of USD 9.85 million, corresponding to 58% of the total loss.

Impact by size of company

With regards to losses in terms of the size of companies, it is observed that the Large Companies, which employ more than 100 workers, recorded the highest estimated loss of USD 79.2 Million. The medium-sized companies, which employ between 11 and 100 workers, recorded losses estimated at USD 20.1 million, while Small Businesses, which employs less than 10 workers, recorded losses of USD 5.9 Million.

Fig. 22 Damage by Size of Business



However, it has been found that small firms, although they have suffered less losses compared to medium and large companies, are the ones most in need of support for the recovery of their activities, and the ones that present a greater risk of job losses due to their nature and vulnerability to extreme economic shocks.

It should be noted that the figures presented in this report are indicative only and, according to some companies interviewed, may be well below the actual value of the loss incurred,

since these figures do not include losses due to the non-compliance with contracts, delays in the supply of goods and services, and misrepresentation of economic links and business prospects.

Impact on Strategic Infrastructure

Manica

In Manica province, preliminary estimates from a survey of 115 productive units indicate losses of around USD 286,211 as shown in table 26.

Table 26: Damage estimate by subsector of activity in the Province of Manica

Type of Business	Nº of Businesses Affected	Type of Damage	Costo of Damaage USD
Commercial Buildings	96	Destruction of roofs (Chapas IBR)	39,077.5
3,465.1	56		
d.q. Bancas de Construção Precária	56		
Shops/Stores	8	Destruction of roofs, wall and loss of goods/stock	161,294.6
Hotels and Restaurants	7	Destruction of roofs, fence walls, lighting posts, glass in doors and windows	63,747.3
Planing	1	Destruction of roofs	581.4
Agro-business	2	Destru	9,107.3
Poultry	**1**	Destruction of roofs covering laying hens and loss of bags of food	**12,403.1**
Total	**115**		**286,211.2**

The stockholders recorded the highest loss estimated at USD 161,294, corresponding to 56.4% of the estimated loss value in Manica. The trade and hotel and catering sectors absorbed a weight of 13.7% and 22.3% of the loss respectively.

Tete and Zambézia

In Tete province, two hotel units and one poultry unit had estimated damages of about USD 282.7 million. However, micro and small farmers in the districts and represented in the District Business Councils report loss of production, although to date they have not provided any estimates of loss.

In the province of Zambézia, there is no indication of the effects of cyclone Idai on businesses. The greatest negative impact was in the low regions where family agricultural activity predominates.

Recovery Needs

In view of the impacts of Cyclone IDAI on the economic and social fabric of the central area of the country described above, it is urgent to adopt exceptional and urgent measures to mitigate the effects of the cyclone and create incentives for the recovery of local economic activity. In this context, this section presents some measures announced by the Government and their impacts as well as the measures proposed by the local business class.

Recovery Measures Announced by the Government

Two weeks after IDAI, His Excellency Filipe Nyusi, President of the Republic, announced a package of measures to mitigate the effects, which will last until December. These measures include the following:

- Reducing the cost of electricity by 50% for industry and commerce invoices, reducing rail tariffs by 50% for passengers on the Seine and Machipanda lines crossing the center region, including the transport of building materials.

- The other measures include the free distribution of 1,000 tonnes of seed to farmers and 100,000 agricultural implements.

- The approval of a decree benefiting economic operators in cyclone-affected areas by offering an early exit permit for imports of construction materials and food products.

- In addition to these measures announced by the Government, some measures were also taken at the municipality level, such as: (i) Suspension of the presentation of construction permits and (ii) suspension of payment of municipal taxes, shall be valid for two (2) months.

With regard to the above measures, the local business community expressed its appreciation, although it acknowledges that these measures are not sufficiently robust and realistic to effectively mitigate the effects of the cyclone on the business sector of the central zone. The main problem of these measures is their timeframe of less than 12 months, which is considered insufficient time to rebuild businesses and resume operations. The local business sector considers that measures need a minimum duration of 5 years. In addition, the business sector in the central zone considers that the government should adopt a specific package of measures aimed at rebuilding the business sector in affected areas.

Measures Proposed by the Local Business Sector

As a result of a survey of businessmen on the proposals for measures that should be adopted to boost economic activity in the central zone of the country, three main groups of measures were highlighted, namely Fiscal Measures, Financial Measures and other measures.

(i) Fiscal Measures
In the fiscal area, the main measure proposed by the local business community is associated with tax relief through exceptional policies such as: (i) suspension of payment of tax charges for a period of not less than 5 years, mainly IRPC, IRPS and VAT ; (ii) Total foreclosure of corporate tax debts in the affected areas; (iii) Immediate regulation of state debts with companies arising from the supply of goods and services and regularization of VAT refund; and

(iv) Total exemption from customs duties and miscellaneous taxes on imports of construction materials and agricultural inputs.

With these measures it is believed that the business fabric of the cyclone affected areas could have a reasonable basis to feed the operational life of their enterprises and mitigate the effects of the cyclone on the economic activity of the country in the medium term.

(ii) Financial Measures
One of the business concerns is with the availability of financing for the replacement of infrastructure and production equipment damaged by the cyclone. In this context, entrepreneurs propose measures such as: (i) Creation of a non-refundable financing line or subsidized interest rates, with a grace period of 1 to 2 years and (ii) establishment of a special (low) to be used in the import of construction materials and agricultural inputs. In relation to these measures, it is reiterated that the financing lines should take into account the reality of local companies, which are predominantly small, most of which is agribusiness. It is therefore necessary that they have relatively simplified requirements, since these companies have lost a large part of their capital, which makes it difficult to provide eligible guarantees for financing in traditional ways.

(iii) Other measures
The other measure proposed by entrepreneurs in the context of a stimulus package for the recovery of local economic activity is the adoption of a preferential policy on the contracting and subcontracting of works for the process of reconstruction of damaged public infrastructures as well as the supply of goods and services, giving preference to the award of local companies. This measure stems from the fact that, with the damage caused by the cyclone, there is a business opportunity for local entrepreneurs, as there will be a need for reconstruction of damaged public infrastructure, namely schools, hospitals and various public administration facilities.

Table 27 and 28 present the strategy proposed for the recovery of the industry and commerce sector.

Table 27: Proposed Business Recovery Programme (PAREPI) May 2019 – May 2022

	Support Area A	Support Area B	Support Area C
Support Area	AS1: Technical assistance service	AS2: Business support and recovery fund	AS3: Policy support for business recovery
Scope	Produce data on losses and needs for recovery of activities.[1]	Allocate financial resources to recovery of activities.	Establish a framework of provisional legal measures.
Activity 01	Inventory of Damages and Losses	Guarantee fund	Exemptions from Customs Duties[2]
Activity 02	Loan Restructuring Plan	Investment Fund for Recovery Infrastructure and Equipment	Extension of deadlines for the submission of VAT, ISPC, IRPC.
Activity 03	Residual Property Valuation	Stock Replacement Fund	Exemption of fees in the Transport and Energy Sectors.
Activity 04	Business plan	Recovery insurance	
Activity 05	Project management	Grants	
Stakeholder profile	✓ Consulting Associations ✓ Professional Orders ✓ Cooperation Agencies	✓ Associations of Banks ✓ Development Funds ✓ Cooperation / Development Agencies ✓ Diplomatic Missions	✓ Office of the Prime Minister ✓ Ministry of Economy and Finance. ✓ Ministry of Industry and Commerce. ✓ Ministry of Transport and Communications. ✓ Tax Authority
Total	**$2,500,000.00**	**$25,000,000.00**	**$2,500,000.00**

Table 28: Proposed support recovery activities

Support activities A:	Support activities B:	Support activities C:
Technical Assistance Services • Loss / Loss Assessment • Business Plan Design (for recovery) • Asset Capability Assessment • Restructuring of Other Loans and Debts;	Business Recovery Fund • Guarantee Fund; • Capital Expenditure Financing • Operational Expenses Financing • Financing (Lost Funds) for strategic activities in a situation of "total loss"	Favorable Policies for Corporate Rescue: ▪ Temporary adjustment of Customs Duties for Priority 1 activities (Construction, Health, Transport / Logistics and Food); ▪ Delayed Remission of Value Added Tax (60 days); ▪ Asset Capability Assessment ▪ Restructuring of Other Loans and Debts;
Support activities A: ▪ Order of Engineers ▪ Order of Accountants and Auditors ▪ Consultancy Firms and Economical or Business Studies	Support activities B: ▪ Insurers ▪ Financing Agencies ▪ Strategic Partners ▪ Cooperation Agencies	Support activities C: ▪ Central Government ▪ Provincial Government ▪ Municipal Administration

SOCIAL SECTOR

HOUSING AND SETTLEMENT

Sector Context

The lack of adequate housing at the national level is estimated to be more than 400,000 units per year. In the areas affected by the cyclone the annual rate of urban population growth is 4,4%, and almost half of the urban growth is absorbed by small and intermediate towns. Medium-sized towns, with a population that ranges from 100,000 to 250,000 people, show an increase in the population growth over the past decade of around 40% as in the case of Caia and Tete. Urban areas are characterized by an extensive lack of infrastructure and services. Population growth has not been accompanied by investments in basic infrastructure or improvements in urban service provision.

Much of the area severely affected by the cyclone falls within or near the Beira Corridor covering the three provinces of Sofala, Manica and parts of Tete, which is facing increasing land pressure due to the corridor development, particularly the outskirts of Beira and Tete which are secondary growing urban poles. These trends are pushing more people to areas at risk of disasters.

Most of the cyclone-affected areas have low elevation and are within proximity of river basins known for their extreme vulnerability to flooding. Floods frequently occur along major river basins and in poorly drained urban settlements.

Such disasters affect an already weak urban environment, where both mixed or conventional houses are built with inadequate materials.

Many households operate businesses from their homes. About 37% of all households operate micro, small and/or medium sized business (the productive households). The 2017 census indicates that 32% of households in the region are headed by women.

The Effects on the Housing Sector

It is estimated that 240.000 houses were partially or totally destroyed by cyclone IDAI. Roughly 60% of these were conventional homes within urban areas, particularly in informal settlements with high levels of environmental, social and economic vulnerability. This urban disaster accounts for 70% of the entire economic damage of IDAI in the housing sector, equivalent to USD$ 410 million.

It is estimated that about 8,000 families are living in temporary accommodation camps and will need support in relocating into new resettlements (*Bairro de Reassentamento*). In addition, the housing reconstruction strategy will need to rebuild homes for 225,000 households who need support to rebuild their homes. Affected households will also need support to obtain new administrative certifications, construction licenses, property and land title as well as identity documentation. Another key consideration for the recovery of the sector is the provision of support to those households who lost their home-based businesses and consequently their family income, as well as those who lost income from rent or who face additional rental costs during the recovery process.

Table 29: Summary of Damage and Loss in the Housing Sector

	Damage Million MZN	Loss Million MZN		Damage Million USD	Loss Million USD	
	Private	Public	Private	Private	Public	Private
DAMAGE						
A) Houses Totally Destroyed by typology	16,340.1			255.3		
a1) Conventional materials	11,360.8			177.5		
a2) Mixed materials	3,549.7			55.5		
a3) Traditional Materials	1,429.5			22.3		
				-		
B) Houses Partially Destroyed by typology	6,285.9			98.2		
a1) Conventional Materials	5,661.8			88.5		
a2) Mixed Materials	406.8			6.4		
a3) Traditional Materials	217.3			3.4		
				-		
C) Domestic Goods (utensils)	3,643.6			56.9		
LOSS				-		
D) Loss of livelihood -domestic activities			847.3	-	-	13.2
E) Loss of income from rented houses			90.4	-	-	1.4
F) Additional rental costs for affected			43.0	-	-	0.7
G) Demolition and debris removal			2,665.8	-	-	41.7
F) Administrative losses			301.2	-	-	4.7
H) Increased risk and vulnerability		485.7	-	-	7.6	-
Total	**26,269.6**	**485.7**	**3,947.6**	**410.5**	**7.6**	**61.7**

* All damage has been classified under Private, Loss identified are both, Private and Public

Integrating a risk reduction approach in the housing and human settlements sector will need to address key constraints to promote resilience such as: (i) adequate land use planning based on an assessment of hazards and vulnerability, to ensure safety in the location of new homes, and appropriate risk mitigation schemes (ii) integrate disaster resistant design features and safe building materials into the construction strategy (iii) enforce proper control measures over land use and building regulations. Considering the high exposure to floods and other hazards, these adaptation strategies will be critical to reducing future risks. Communities should receive support as well in disaster prevention, early warning and community-based contingency planning.

The recovery of the housing sector will need to consider community participation and mobilization as a central feature of the strategy, social protection measures, as well as specific measures to ensure that vulnerable households receive the support they need. This means giving priority to landless households, elderly people, widows, single mothers, people with physical disabilities, and others identified jointly with communities.

Recovery Needs

The impact of Cyclone Idai in central Mozambique represents an opportunity to operate a paradigm shift in the development model of the country and build a culture of resilience at all levels.

Homes need to be safer and built better to withstand future disasters. Rebuilding should be inclusive, ensuring that women, youth, the elderly, and other vulnerable groups participate in the process, empowered to make decisions for themselves, working together to address their common socio-economic and physical needs, rebuilding safe community infrastructure and developing skills to build back safer. When this process is supported through social mobilization, technical assistance and material support, people can recover faster and more effectively.

Short-term recovery (24 months)

A first step in housing reconstruction is to undertake a Neighborhood Participatory Damage Assessment, house-to-house and case by case, using trained engineers and/or other building professionals in order to standardize the types of site and housing damage, systematizing common failures, to identify priority households and locations and the needed improvements in construction methods. The assessment should also produce valuable data for allocating financial assistance to households, and for estimating demands for materials and other inputs.

Some of the recommended recovery principles and strategies for the sector include:

- Develop and disseminate guidelines for housing repair and reconstruction based on the principle of 'building back better', using innovative resilient housing models such as elevated platforms and windproof solutions;
- Neighborhood urban planning action frameworks and micro community-based work intensive physical interventions to support the repair of roads, drainage systems, etc.
- Support owner driven implementation.
- Deliver proper trainings to community master builders and homeowners and provide qualitative supervision of repair / reconstruction projects.
- Design and tailor financial assistance to different income groups and housing typologies
- Integrate livelihood-generating mechanisms in the process (possibly including a Construction Materials Bank system, with voucher or FFW schemes, as well as supporting local financial rotating schemes).
- Consider subsidies or fiscal exemption systems to facilitate reconstruction (lesson learned from previous emergency experiences should be capitalized and adapted).

In relation to the ongoing resettlement process for 8,450 families is following a classic procedure, where institutional coordination at central and local level results in a quick relocation to identified safer areas (within the same district but often to locations far away from cultivated land, and sometimes to areas that are not safe enough to resist stronger hazards).

Recovery should consider undertaking an in-depth social, economic and environmental impact evaluation before continuing the resettlement process. Resettlement is typically a highly challenging undertaking prone to flaws, including a high economic cost to support operations (estimated to be around USD$25 million), high intensive institutional demands, and coordination challenges for local and central governments. An evaluation will ensure a well-designed and sustainable process over the long-term.

Table 30: Short Medium and Long-term Initiatives and Costs

	Item	Priority (1 to 5)	Description	Cost	
				Million MZM	Million USD
Short term	**A) Physical interventions in totally destroyed houses**				
	a1) Temporary accommodation on-site	1.1	Provision of shelter materials and assistance for temporary reinstallation	1,067.5	16.7
	a2) Resilience and quality increase reconstruction	1.2	Provision of technical and material assistance for resilient reconstruction of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	25,117.1	392.5
	B) Physical interventions in partially destroyed houses				
	b1) Temporary accommodation on-site	1	Provision of shelter materials and assistance for temporary reinstallation	1,385.4	21.6
	b2) Resilience and quality increase reconstruction	1	Provision of technical and material assistance for resilient rehabilitation of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	6,600.2	103.1
	C) Relocation in safe areas				
	c1) Fisrt relocation phase - preliminary installation	1.1	Provision of shelter materials and humanitarian assistance for temporary relocation in new plots	870.2	13.6
	c2) Provision of plots with infrastructure/ services	1.2	Basically, plots with basic infrastructure in resettlement camps (barrios) - not including water and sanitation	801.1	12.5
	D) Demolition and debris removal	1	Demolition of conventional houses and debris removal (not including asbestos special treatment)	2,665.8	41.7
	E) Technical assistance for local construction MSME	1	Specific training programs for local construction micro-enterprises, neighborhood skilled labor, on resilient construction techniques	32.0	0.5

Table 30: Short, Medium & Long-term Recovery Initiatives and Costs (USD)

	Item	Priority (1 to 5)	Description	Cost MZM	Cost USD
Short term	**Physical interventions in totally destroyed houses**				
	Temporary accommodation on-site	1.1	Provision of shelter materials and assistance for temporary reinstallation	1,067,539,200	16,680,300
	Resilience and quality increase reconstruction	1.2	Provision of technical and material assistance for resilient reconstruction of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	25,117,065,056	392,454,141
	Physical interventions in partially destroyed houses				
	Temporary accommodation on-site	1	Provision of shelter materials and assistance for temporary reinstallation	1,385,404,800	21,646,950
	Resilience and quality increase reconstruction	1	Provision of technical and material assistance for resilient rehabilitation of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	6,600,158,880	103,127,482
	Relocation in safe areas				
	First relocation phase - preliminary installation	1.1	Provision of shelter materials and humanitarian assistance for temporary relocation in new plots	870,233,856	13,597,404
	Provision of basically infrastructured plots	1.2	Basically infrastructured plots in resettlement camps (barrios) - not including water and sanitation	801,120,000	12,517,500
	Demolition and debris removal	1	Demolition of conventional houses and debris removal (not including asbestos special treatment)	2,665,770,300	41,652,660
	Technical assistance for local construction MSME	1	Specific training programs for local construction micro-enterprises, neighborhood skilled labor, on resilient construction techniques	32,000,000	500,000.00
Medium term	Human settlements resilience and vulnerability reduction interventions	2	Basic and work intensive neighborhood infrastructure rehabilitation for improved resilience (micro-drainages, public spaces, access roads etc.)	160,000,000	2,500,000
	Technical assistance for local authorities dealing with housing and human settlements	2	On the job capacity building for local authorities to deal technically with housing and human settlements reconstruction process, m&e, revision of plans, codes and regulation considering disaster impact etc.	128,000,000	2,000,000
Long Term	Structural retrofit to increase resilience for future disasters	3	Housing retrofit program for improving quality and resilience in non affected structures in disaster area in mid-long term	1,296,960,000	20,265,000

Medium term (2 years)

- Facilitate access to financing for housing reconstruction tailored to different socio-economic groups and strengthen saving mechanisms
- Introduce appropriate technologies using locally available materials and affordable techniques
- Deliver capacity building training to local authorities on resilient and risk-sensitive planning (risk reduction and resilience plans and regulations).
- Provide support for retrofitting also to non affected households to ensure they are also resilient to future disasters.
- Support the integration or revision of the national legislative framework to include the principles of risk and vulnerability reduction, both in urban and rural areas.

Long term (5 years)

To maximize the benefits of the housing and human settlement reconstruction, the longer-term goal should be to institutionalize the principles of risk reduction and building back better, by introducing or revising building codes and regulations and relevant legislative framework at the national level, reinforcing interventions of urban upgrading and renewal, working with local authorities and communities to activate a rural redevelopment (reordenamento rural) to reduce vulnerability through resilient housing and infrastructure.

Implementation arrangements

The Housing and Human Settlement Sector is probably the most expensive and most complex section of the entire Post-Idai Reconstruction Plan, with almost 620 million USD of total needs, addressed in different actions that need to be promoted (house reconstruction and rehabilitation, neighborhood infrastructure rehabilitation, institutional technical assistance, professional construction training).

Public (central and local authorities) and private (families and communities) should work closely to joint efforts and implement a functional and efficient process of recovery and resilient reconstruction, optimizing external support of international, civil society and non governmental organizations, technical bodies and financial institutions.

The following Housing and Human Settlements implementation arrangements are suggested, for the Central Reconstruction Office to guide field intervention closely with local authorities (provinces, districts and municipalities) and decentralizing the action as much as possible, to the level that is closer to the communities.

HEALTH AND NUTRITION

Sector Context

Health status: over the years Mozambique has made progress in improving some health indicators but remains modest. Life expectancy is 59 years (but lags behind the African average of 62 years) and maternal mortality is 443 per 100,000 births. The infant mortality rate is 78.5 per 1000 live births, higher than national targets. Additionally, 43% of children under five years are considered stunted and 6% are wasted. In the four provinces most affected by cyclone IDAI, health status indicators are not better than the national average.

Inequity in health indicators: Poor health indicators are exacerbated by significant inequities between urban and rural populations and also income groups, underpinned by inequalities in access to health services. For example, the 2011 DHS shows a 54% supervised delivery rate with significant variation between urban (80%) and rural (44%), which worryingly declined from 32% to 26% in Zambézia Province.[100]

Communicable diseases: 65% of deaths in the country are due to communicable, maternal and nutritional diseases, of which HIV/AIDS is of particular concern with a high prevalence of 13.2% in 2015.[101] Three of the provinces most affected by the cyclone have HIV prevalence above national averages – 16.3% in Sofala, 15.1% in Zambezia and 13.5% in Manica. Furthermore, malaria is one of the biggest health challenges accounting for 10.3 million morbidities in 2018 and 39% prevalence in children under 5,[102] while recurrent outbreaks of cholera and diarrheal diseases continue to be of public health concern especially within the affected provinces.

Non- Communicable diseases (NCDs): NCD account for 27% of the mortalities in Mozambique,[103] particularly cardiovascular disease (9%) making it the leading cause of morbidity and mortality, with hypertension as the number one risk factor with a national prevalence rate of 35%. In 2003, the prevalence of diabetes for people aged 20 and over was 3.1%.[104] Chronic malnutrition accounts for 30% of deaths among children under 5 years. Persons suffering from these NCDs stand a higher risk of suffering complications in the light of disrupted health service delivery due to the cyclone disaster.

Healthcare delivery system and coverage: The Mozambican healthcare system is structured into quaternary, tertiary, secondary and primary health facilities or types I to IV. Prior to the cyclone disaster, there were about 8,425 health facilities made up of 4 Central Hospitals, 8 Provincial hospitals, 2 military hospitals, 7 General hospitals, 24 district hospitals, 19 rural hospitals, 1,320 Health Centers and 91 Health posts across the country. For the most affected Provinces, infrastructure and human resources for health service delivery were already constrained. For instance, outpatient consultations per capita was 2.07 in Sofala, 1.78 in Manica, 1.17 in Tete which were already higher than the national average. Meanwhile, there was a general inadequacy in the health workforce in the country as the density of Doctors, Nurses and Midwives per 10,000 population estimated at 6 – Sofala (8.1), Manica (6), Tete (4.2) and Zambezia (4.2). The composite coverage index for Mozambique is estimated at 0.36 in 2017[105] while out-of-pocket health expenditure is estimated to be less than 10%.

100 Ministry of Health.

101 Ministry of Health MOH, *Survey of Indicators on Immunization, Malaria and HIV/AIDSSupplemental Report Incorporating Antiretroviral Biomarker Results* (Maputo: Ministry of Health, Mozambique, March 2019) <https://dhsprogram.com/pubs/pdf/AIS12/AIS12_SE.pdf> [accessed 2 May 2019].

102 OrganisationMondialee de la santé, *World Malaria Report 2018*, 2018.

103 World Health WHO, *Summary Non-Communicable Disease Burden in Mozambique* (Geneva, 2016) <https://www.who.int/nmh/countries/moz_en.pdf?ua=1> [accessed 3 May 2019].

104 Ministry of Health.

105 World Health WHO and World Bank, *Tracking Universal Health Coverage: 2017 Global Monitoring Report*, 2017 <http://

The Effects on Health

Damage on Infrastructure and Physical assets: The health sector was severely affected by the passage of cyclone IDAI, particularly its infrastructure. A total of 94 health units suffered some degree of damage, of which 4 were completely destroyed and 90 were partially damaged including their equipment, furniture, essential medicine and medical supplies. It is estimated that 14% of the health infrastructure in the affected provinces suffered damages – mostly in Sofala (Beira City) followed by Manica, Tete, Zambézia and Inhambane.

Changes/losses in Access to Health Services: As noted the cyclone affected 1.8 people and displaced 400,000, with 160,927 people sheltering in overcrowded temporary accommodation centers. Cholera outbreak and an upsurge in diarrheal diseases, fevers and malaria ensued, further overwhelming the constrained health system in the affected areas. In this context, the restoration of Primary Health Care services has become one of the main priorities to address the health consequences of displacement, damaged infrastructures, limited access to safe drinking water, lack of proper sanitation and disruption/insufficiency of healthcare resources. It is estimated that the health sector losses in terms of disaster response efforts and foregone economic flows is US$ 108,836,973. The risks to nutrition are also significant given the already existing underlying vulnerabilities which will now be exacerbated especially for young children. The displaced population's access to food is heavily constrained with most relying on assistance to meet their needs, yet access to sufficient and quality food assistance remains severely constrained. Therefore, the risk is very high for deterioration in the prevalence of acute malnutrition rates in the short term.

Table 31: Estimation of Health and Nutrition Sector Damage and Loss

Description	Cost in Million MZN		Cost in Million US Dollars		Total Needs	
	Public	Private	Private	Public	Local Currency	US$
Damage Total	5,144.4	70.8	1.1	80.4	5,215.1	81.5
Cost of total damage	601.1	-	-	9.4	601.1	9.4
Cost of damage to supplies	1,921.4	28.7	0.4	30.0	1,950.1	30.5
Cost of damage to equipment and furniture	1,099.4	19.1	0.3	17.2	1,118.5	17.5
Cost of partial damage	1,522.5	22.9	0.4	23.8	1,545.5	24.1
	-	-	-	-	-	-
Loss Total	**6,967.0**			**108.9**	**6,967.0**	**108.9**
Governance	572.7	-	-	8.9	572.7	8.9
Infrastructure	202.1			3.2	202.1	3.2
Risks reduction	1,626.1	-	-	25.4	1,626.1	25.4
Service delivery and access	4,566.1			71.3	4,566.1	71.3

pubdocs.worldbank.org/en/193371513169798347/2017-global-monitoring-report.pdf> [accessed 20 November 2018].

Changes/losses in Governance and Decision Making Processes: As a response to the emergency situation, the Government has created and supported national and provincial emergency operation centers. In terms of coordination, mechanisms were established between the different emergency clusters to facilitate comprehensive needs and risk assessments with the affected population, local leaders, health professionals and institutions. The increased cost of coordination and governance decision-making processes in the health sector is estimated at US$ 7,857,396 which will increase to US$ 8,971,658 by the end of the emergency response and health sector recovery processes.

Increased Risks and Vulnerabilities: The flooding and stagnation of water has increased the risk of communicable diseases and created favorable conditions for the breeding of mosquitoes. Major health risks include cholera and other acute watery diarrhea, bloody diarrhea, vector-borne diseases, including malaria, dengue as well as other epidemic-prone diseases such as measles and malnutrition. Malaria cases are increasing in the four affected provinces, with a cumulative number of 83,138 cases to date. Preventive measures are underway, such as distribution of bed nets and an indoor spraying campaign.

Since the declaration of the cholera outbreak on 27 March 2019, and up to 29 April 2019, 6,727 cases and 8 deaths have been reported in four districts of Sofala Province: Beira, Buzi, Dondo and Nhamatanda. As part of the ongoing Cholera response, the Ministry of Health has concluded on 10 April 2019 a successful six-day emergency cholera vaccination campaign that reached more than 800,000 people (98% of the targeted population) in four districts.

The cost of damaged health-related infrastructure and assets are estimated at US$81,486,404, while the rebuilding / rehabilitation will require an additional US$12,074,398 to incorporate technical solutions for resilience over the next 5 years.

Recovery Needs

The disaster recovery process for the health and nutrition sector should focus on accelerating the reconstruction of damaged health facilities to restore service delivery to the pre-disaster levels or better, thereby minimizing the interruption of treatment for pre-existing chronic illnesses (with specific attention to gender and vulnerable groups). It should also address the prevailing risk of disease outbreaks. Resilience building should be integrated into the recovery process, by investing in disaster risk reduction and disaster risk management capacities, and by building back better the sector's infrastructure and services.

Given the ongoing risks arising from the impact of the disaster, the proposed sector strategy prioritizes epidemiological surveillance; prevention and control of infectious diseases; reconstruction/rehabilitation of damaged health facilities; capacity building for service delivery, monitoring and evaluation; and health promotion through community outreach among vulnerable groups, especially for vector- and waterborne disease prevention and treatment.

The recommended short, medium, and long-term recovery strategies are summarized below, along with the table summarizing the costs.

- **Short-term recovery** (12 months): target life-saving interventions through curative and preventive approaches
- **Medium-term recovery** (12-36 months) : improve health care access by restoring health facilities, improving capacities of the health workforce, and promoting disaster risk reduction
- **Long-term recovery** (36-60 months) : in line with other development plans, promote ongoing health sector reforms, strengthen health facilities and the health information system.

Table 32: Short, medium and long-term recovery initiatives and costs

Description	Short-term	Medium term	Long term	Total Cost (Million US$)
	Up to 12 months (Million US$)	1 -3years (Million US$)	3- 5 years upwards (Million US$)	
1. Needs for increased resilience, risk and vulnerability reduction	3.6	9.4	6.3	19.3
Accelerate safe hospital program	0.0	7.2	4.8	12.1
Build capacity for NEMTs	3.6	2.2	1.4	7.2
2. Reconstruction of infrastructure and physical assets	48.7	21.5	14.4	84.6
Cost of damages	33.9	10.3	6.8	51.0
Cost of infrastructure loss	14.8	11.3	7.5	33.6
3. Restoration of health sector governance and decision-making process	7.9	0.7	0.4	9.0
Costs for additional coordination and disaster management needs, including for nutrition response	7.9	0.7	0.4	9.0
4. Resumption of access to and delivery of health services	39.5	19.2	12.8	71.5
Community health workers (apes)	2.2	0.6	0.4	3.2
Compensation (rehabilitation)	2.9	0.0	0.0	2.9
Higher expenditures for epidemic disease, (cholera, malaria, diarrhea, measles, poliomyelitis,)	0.2	0.0	0.0	0.2
Higher expenditures for overall increased case load	5.4	3.5	2.3	11.3
Higher expenditures for treatment and long-term care for physical and mental trauma	2.4	1.0	0.6	4.0
Higher expenditures of patients referred to other facilities	4.0	1.6	1.1	6.7
Higher expenditures to treat acute malnutrition (distinction for interventions in facilities vs community-based interventions)	11.5	6.9	4.6	23.0
HIV treatment (ITS, HIV)	2.0	0.0	0.0	2.0
Information systems	0.0	2.4	1.6	4.0
Malaria (diagnoses and treatment)	4.8	0.0	0.0	4.8
Maternal, newborn, child health	3.1	3.1	2.1	8.3
Temporary recruitment	0.1	0.0	0.0	0.1
Tuberculosis (TB)	0.6	0.1	0.1	0.7
Urgently train 123 health workers on the emergency response processes especially skills Transfer from EMTs	0.1	0.0	0.0	0.1
5. Risks reduction and Building Back Better - BBB	17.3	0.4	0.3	18.1
Higher expenditures to mitigate disaster-related risks	17.3	0.4	0.3	18.1
Grand Total	**117.0**	**51.2**	**34.2**	**202.4**

Implementation arrangements

Short-term, medium-term, and long-term recovery programs will need to be accompanied by strong mechanisms that track aid, coordinate programs, and monitor progress. Existing monitoring and evaluation systems will also need to be enhanced at all levels. Effective progress monitoring and aid tracking will be critical for ensuring that the government, international partners, and the private sector achieve the sector objectives. It would be equally important to ensure regular reporting on progress toward recovery targets, challenges faced during recovery, and the impact of assistance provided. Finally, the recovery programs must include a mechanism for feedback from communities on the support provided and adjust priorities according to their needs.

EDUCATION

Sector Context

Over the past decade and a half, Mozambique has seen significant improvements in education. Primary and secondary school enrolment is around 7.2 million (MINEDH Statistical Survey 2017). Primary school enrolment now is at 97 percent. Intake of children aged 6 years old is over 80 percent.[106]

However, many challenges remain for delivering basic education in Mozambique. Primary completion rates have been stagnating at around 47 percent over the past few years. It is estimated that 2.4 million Mozambican children, adolescents and youth are out-of-school, including 606,000 primary school-age children, 920,000 lower secondary school-age adolescents, and 879,000 upper secondary school-age adolescents and youth.[107] Gender disparities, prevail with regards to out-of-school children and youth; in Mozambique, girls represent 60% of primary school-age out-of-school children, 54% of lower secondary school-age adolescents and 53% of upper secondary school-age adolescents and youth. While 94 percent of girls in Mozambique enroll in primary school, more than half dropout by the fifth grade. Factors related to poverty and socio-cultural norms keep children from finishing school, such as early marriage and pregnancy, as well as distance from home to schools, lack of safe school spaces, overcrowded classrooms and a lack of adequate number and quality teachers.

Table 33 indicates the number of children enrolled in primary and secondary school, disaggregated by girls and boys. Girls and boys do not benefit equally on primary and secondary education. Girls are less likely than boys to progress to secondary school.[108] Such inequities need to be highlighted, so they can continue to be addressed and considered particularly in the post-disaster context.

Table 33: Number of children enrolled in school (EMIS 2018)

Provincia	Sub-sector	No. of Girls	No. of Boys
Sofala	Primary	227,459	488,837
	Secondary	37,743	86,701
Manica	Primary	255,630	539,091
	Secondary	34,434	87,012
Zambezia	Primary	750,211	1,595,992
	Secondary	45,023	104,557
Tete	Primary	279,180	568,551
	Secondary	23,602	52,717

106 http://www.unicef.org.mz/en/our-work/what-we-do/education/

107 UNESCO report on Education Policy Review, 2018.

108 http://uis.unesco.org/sites/default/files/documents/global-initiative-on-out-of-school-children-eastern-and-southern-africa-regional-report-2013-en.pdf

Learning achievement is also low in primary schools. On average fewer than one out of ten children in grade 3 have basic reading competencies.[109] The low learning achievement is reflected across the four affected provinces. According to the national learning assessment, the four affected provinces' literacy and numeracy rates are overall lower than the national average. Manica reflects the lowest rates in both literacy and numeracy.

Table 34: Literacy and Numeracy Rates in 4 affected provinces

Province	Literacy Rate	Numeracy Rate
Sofala	10%	9.92%
Manica	2.8%	5.95%
Zambezia	5.4%	8.85
Tete	4.8%	9.92%

Among children who finish primary school, nearly two-thirds leave the system without basic reading, writing, and math skills.[110] The national assessment of learning indicated that there are links between low learning and key-issues such as teacher absenteeism, teacher capacity, school management, the use of Portuguese as a language of instruction and unconducive learning environments.

Given the pre-Idai learning data showing low levels of literacy and numeracy rates in all four provinces, it is important to ensure that access to education, learning quality and achievement are not negatively affected, and to seize the opportunity to build back better the quality of education and learning.

In addition, it is estimated that between 2% and 6% of the total population of Mozambique and 13.5% of children aged 2-9 years are experiencing a disability – with an estimate of 70% of children experiencing disabilities living in rural areas (2007 National Census). Given that children with disabilities are more likely to be left behind, abandoned, neglected and be separated from their caregivers/family and have a higher vulnerability to violence, exploitation and abuse, there is a recognized urgent need to support children experiencing disabilities in the recovery process.

The Effects on Education

Effects on education infrastructure and physical assets

Overall, the impact of Idai affected a total reported **31** preschools, **1,306** primary schools, **26** secondary schools, **11** technical schools, **3** universities and **3** teacher training institutes. Across all sub-sectors, pre-primary through university, a total of **4,222** classrooms were damaged. The impact of Idai alone on primary and secondary school affected **332,301** students and **9,616** teachers.

109 National assessment of learning achievement, 2016.

110 ibid

Table 35: Primary and secondary schools affected by province

Province	No. students affected	No. teachers affected	No. classrooms damaged
Sofala	237,186	7,232	2,055 conventional, 1,160 precarious & mixed
Manica	70,991	1,283	179 conventional, 11 precarious & mixed
Tete	19,524	196	47 conventional, 174 precarious & mixed
Zambezia	7,314	78	8 conventional, 68 precarious & mixed
Inhambane	1,200	26	10 conventional

The most affected province is Sofala followed by Manica, Tete and Zambezia. In Sofala, 13 districts were affected, and the five most-affected were: Beira City, Buzi, Nhamatanda, Dondo and Muanze. The three teacher training institutes affected are in Sofala. Also, in Sofala, damage to a specialized school supporting children experiencing disabilities (with 5 classrooms) affected 89 students and 11 professors. In Manica, 10 districts were affected; the most-affected include: Sussundenga, Manica City and Barue. In Tete 5 districts were affected; the most-affected include: Moatize, Tsangano and Tete City. And, in Zambezia province only two districts were hit: Chinde and Inhassunge. (The province of Inhambane is also included in the table above as 8 schools with a total of 10 classrooms were affected.)

Table 36: Damage by Province

Province	Millions MZN		Millions USD	
	Province	Damage	Loss	Damage
Sofala	779.5	274.7	12.2	4.3
Manica	143.5	49.2	2.2	0.8
Tete	20.6	23.5	0.3	0.4
Zambezia	13.3	6.9	0.2	0.1

The total net value of the damage and loss to the education sector is estimated at 20.4 million USD. Of this, the damage to infrastructure and assets is estimated at 14.9 million USD. Further, the sector encountered a loss of 5.5 million USD mainly on account of activities associated with the establishment of temporary learning centers, child-friendly and gender-sensitive WASH facilities, removal of debris (including proper removal of asbestos) and cleanup and minor repair costs from the use of intact schools as temporary shelters. Overall the public sector suffered more damage and loss, accounting for 97% of the total. A snapshot of the damages and losses is seen below – table 4 presents costs of damage by province and table 5 showcases an itemized list of damages and losses.[111]

111 The data reflected in the PDNA is from received Provincial data as of 29 April 2019 and was used for the purpose to make cost estimates on the post-disaster situation. It is recognized that the data is constantly changing and being updated by DPEDH and SDEJT as information is collected and verified. Therefore, these PDNA figures of affected classrooms, etc. should not be viewed as static.

Table 37: Itemized list of Damage and Loss

Damage and Loss	Damage		Loss	
	Million of MZN		Million of MZN	
	Public	Private	Public	Private
Itemized list of Damages				
Primary schools – conventional classrooms	318.7	6.7		
Primary schools - mixed + precarious classrooms	16.7	0.0		
Primary schools – teacher homes + administration blocks	39.8	0.8		
Pre-primary/ECD (early childhood development)	4.0	0.0		
Secondary schools (+equipment)	32.2	1.6		
TVET (technical vocational ed training + equipment)	1.3	3.7		
Universities (+ equipment)	4.1	1.1		
Teacher Training Institutes (IFP) (+ equipment)	1.3	0.2		
School furniture	233.6	0.0		
School materials (teaching and learning)	209.6	2.6		
Washrooms and toilets/latrines	79.0	0.7		
Itemized list of Losses				
Temporary Learning Spaces (TLS)			251.0	2.8
Rubble removal			79.0	1.3
Repair to schools used as temporary shelters			0.3	
Teacher Training – psychosocial support (PSS)			19.6	
Loss of revenue in private school sectors			0.1	
Cost of school/classroom relocation to safer areas (includes - transportation, tax and per diem for technical provincial expert)			0.2	
Total MZN	**940.3**	**17.5**	**350.1**	**4.1**

The impact of the disaster is not only reflected by the damage and the loss of infrastructure, but it is also clear that the effect on the education sector is felt through the loss and risk to human capital and human development. There has been a reported decrease in both boys and girls attending school since the crisis. From consultations with children over half of the children said they had friends or knew other children who are not currently going to school.[112] The primary reasons cited are economic – such as boys finding paid labor to earn money for their families and girls staying home when funds are limited and families prioritize boys' education,[113] followed by the lack of safety at schools. The effects on education are organized under the INEE Minimum Standards, 3 of the 4 domains (INEE 2010)[114]: *teaching and learning*, *teachers and other education personnel* and *education policy*.

112 According to Save the Children's Impact on Children Child Protection and Education in Emergencies Assessment (2019) which included consultations with 567 children aged 10-18 years across the four provinces.

113 CARE. 2019. Rapid gender analysis Cyclone Idai response.

114 https://toolkit.ineesite.org/resources/ineecms/uploads/1012/MS_2010_Portuguese_lowres_final.pdf

Effects on teaching and Learning

The cyclone has caused fear, distress and loss in students resulting in a lack of concentration. When teachers and parents/caregivers were asked how they felt their students had been affected by the disaster, the majority felt children had been affected moderately or severely, including distress, isolation, being scared, nervousness, not playing with others among others.

The cyclone caused a loss of days of classes ranging from one to two weeks. Delays were due to damage of infrastructure, closure of schools for cleaning and minor repairs and the use of schools as accommodation centers. Many TVET and University students also missed classes because they had returned to their home villages and took a long time to return to the city to resume their classes. In an interview with the school board and some teachers, it was revealed that to minimize this situation, classes will also take place on weekends and the holidays will be used for recovery classes. In some cases, students from the second cycle of secondary education in the accommodation centers do not have classes as there is no the corresponding level of education in the temporary learning spaces/schools.

The destruction, loss and/or damage of homes, lack of electricity and transportation also affects the process of teaching and learning. Students reported having difficulty in doing their homework in the evenings due to the lack of electricity/light, arriving late to school due to lack of transport and feeling insecure because they have lost their homes. All of this results in an increased distraction in class and reduces their school performance. In the future, there may be an increase in dropout due to the loss of livelihoods of vulnerable families and an increase in early marriages as forms of negative coping strategies.

Effects on teachers and other education personnel

Teachers reported being distressed by the cyclone and unable to help their students. Muitos professores perderam as suas casas ou ficaram danificadas, sendo obrigados a se refugiarem em casa de familiares e sem poderem aceder a qualquer tipo de ajuda.Many teachers lost their homes, or they had them damaged, being forced to take refuge in the homes of relatives and unable to access any kind of help. As professoras em particular, tinham preocupacoes acrescidas nao so pela danificacao da casas mas plea seguranca dos sues filhos enquanto trabalhavam.Teachers (females in particular) had greater concerns not only for the damage of their homes, but for the safety of their children while teaching. Isto afecta sobremaneira o seu desempenho no trabalho.This affects their performance at work greatly. Apresentaram preocupaçao de falta de apoio psicosocial para eles e capacitaçao para poderem ajudar seus alunosbem comoa necessidade de acesso à ajuda para reabilitar as suas casas e retomar a sua vida normal.They expressed concern about the lack of psychosocial support for themselves and the lack of training to help them support their students as well as aid to rehabilitate their homes and to resume their normal lives.

Effects on service delivery and governance mechanisms (& education policy)

Many facilities in the education sector at the provincial and district levels have been damaged which may affect their performance. Houve relatos de danificaçao dos documentos da area dos recursos humanos e administraçao, bibliotecas, e meios informaticosque podera comprometer os mecanismos normais de funcionamento eagestao das diversas instituiçoes. There were reports of damage to documents in human resources and administration, libraries and computers that will compromise the normal functioning of the various education institutions.

O envolvimento dos técnicos da educaçao nos processos da avaliaçao e mitigaçao dos efeitos do ciclone poderao também afectar o seu desempenho normal, a curto prazo.The involvement of the school management (e.g. the school directors and education officers) in the assessment and mitigation of cyclone effects may also affect their normal performance in the short term.

Emerging risks and vulnerabilities

During interviews with members of the school councils, school boards and students, it was claimed that the domestic violence, school related gender-based violence and sexual abuse particularly against girls and children experiencing disability may increase. Reasons given include additional stress caused by the reduction of family income, student movements at night to relatives' homes to do homework (due to lack of electricity) utilizing overcrowded buses at night and lack of security in damaged houses where students board. As raised above, there is also a risk of increased early marriage, early pregnancies and infection from HIV,leading to an increase in school drop-outs.As raised above, there is also a risk of increased early marriage, early pregnancies and infection from HIV with the potential to lead to an increase in school drop-outs.

Recovery Needs

The overall aim of the recovery and reconstruction strategy in the education sector is to ensure uninterrupted education service delivery. This calls for a focus on both the structural and non-structural aspects of the education system to ensure that all education institutions are built back better – to ensure they are resilient against multi-hazards and offer an enabling learning environment.

Table 38: Summary of Recovery Needs

NeedsNeeds Million MZN		NeedsNeeds (Million USD)	
PublicPublic	PrivatePrivate	PublicPublic	PrivatePrivate
8,132.0	20.0	122.3	0.3

Recommendations forDRR andBuilding Resilience in SectorRecommendations for DRR and Building Resilience in Sector

The MINEDH has adopted the standards of resilient rehabilitation for damaged education infrastructure. A estratégia visa a transformação a escola num espaço seguro para as crianças. MINEDH's strategy is to transform the schools into inclusive and holistic safe spaces – physically and socio-emotionally – for children.

Under the technical leadership of MINEDH's DIEE, efforts have been undertaken to mainstream disaster risk reduction (DRR) and school safety in all education facilities. Muitas das escolas construídas com custos controlados, apresentam problemas sérios na estrutura. Many of the schools have been built at low-costs with precarious materials and pose serious structural problems. Para uma reabilitação resiliente, por vezes temos que betonar a viga de coroamento onde será encastrada as pecas metálicas para a ancoragem da estrutura da cobertura, tornando a resiliente. DIEE recognizes that for resilient rehabilitation, a major factor is to ensure there is a resilient roof. For a resilient roof, it is often necessary to include a

concrete crown beam and embed the metal parts for the anchorage of the roof structure. DIEE has made significant efforts to build resilient schools with resilient roofs across Mozambique, and between 2017-2019 has built 980 resilient classrooms. In 2019, DIEE has a target to construct 1,040 resilient classrooms (nationally, 38,723 conventional classrooms exist while 30,718 primary school classrooms remain in precarious conditions).

It was clear across the Idai-affected four provinces that the resilient built schools did not experience any damage. To ensure principles of DRR and resilient construction, MINEDH DIEE has approved the major elements below to building conventional and mixed classrooms back better:

Building back better – resilient conventional classrooms

Resilient emergency construction projects will be used for the construction of resilient classrooms. These projects are divided into six packages, namely: Package 1 – Earthquake I and cyclones 210 km/h; Package 2 - Earthquakes and cyclones 180 km/h; Package 3 – Earthquake I and cyclone III-IV 120 km/h; Package 4 – Earthquake II-III and cyclone I 210 km/h; Package 5 – Earthquake II-III and cyclone II 180 km/h; and, Package 6 – Earthquake II-III and cyclone III-IV 120 km/h. During cyclone Idai as every district experienced a different wind speed, the recommendation to build back better is to ensure that every district utilizes risk mapping to identify which package is necessary in reconstruction. Further, all construction departments of the provincial directorates have drawings, technical specifications and bill of quantities of these packages for the execution of the resilient project, according to a mapping already carried out in Mozambique.

Building back better – “resilient-mixed” classrooms

The strategy for the implementation to build back better mixed and precarious classrooms draws on the involvement of NGOs with the support of local communities to meet an objective of empowering local people. A gain is to empower communities with appropriate techniques to build their schools and other infrastructure with longer lifespans. The mixed and precarious classrooms will be built back better as a resilient-mixed classroom with a cement foundation, wooden pine pillars (minimum 10x10 centimeters) and a roof utilizing the conventional design. This updated resilient-mixed classroom is designed to better withstand storms and strong winds.

Table 39: Cost of Short, Medium and Long-Term Recovery Interventions

Priority	Item	Description	Million MZN	Million USD
Short term	Provision of Temporary Learning Spaces (TLS)	Ensure the resumption of learning	253.8	4.0
	Psychosocial Support (PSS)	Provision of PSS for both teachers and students	288.1	4.5
	Retrofitting & repair of schools	Build Back Better safe and inclusive schools	2,727.1	42.6
	WASH in Schools	Build Back Better inclusive facilities and water systems	2,943.7	46.0
	Emergency School Feeding	Provision of emergency school feeding	1,446.6	22.6
Medium Term	Disaster Risk Reduction (DRR) Teacher Training	BESP (Basic Emergency School Plan)/PEBE Training	288.1	4.5
	Advocacy and campaigns	Disseminate awareness on key risks and issues	56.0	0.9
	Improve monitoring mechanisms	Systematize reporting of enrolment and attendance within schools	44.8	0.7
	Strengthen EMIS	Incorporate school safety, EiE and DRR	56.0	0.9
Long Term	Strengthen School Councils and Children's Clubs	Awareness building and training of children and community members	84.7	1.3
	School counselor rooms & training	Support school counselors at the secondary school level	21.6	0.3
	Inclusive education	Support teachers and schools to be inclusive	80.6	1.3
	Multi-purpose super-cyclone school	Introduce a super school in each province	76.8	1.2
	Strengthen capacity of higher education system	Set-up a research center to conduct research on disaster related topics	3.0	0.05
		Total	7,829.1	122.3

SHORT TERM NEEDS (0-1 years) - These include the immediate and transitional needs that are required to resume the delivery of education services until reconstruction and rehabilitation of permanent structures is complete. The short-term needs include:

- Resumption of learning through the provision and running of Temporary Learning Spaces (TLS): Given that school repair and reconstruction will require the next couple of years, the resumption of learning spaces is needed through the provision of essential education in emergencies (EiE) supplies, such as the provision of teaching, learning and recreational kits (teaching and learning materials) and the set-up of temporary learning spaces via tents and/or tarps (opportunity to use a community tarp-a-tent approach).

- Psychosocial Support: All the teachers of the 875 zones of pedogogical influence (ZIPs) across the four provinces will benefit from psychosocial support (PSS) and capacity building in PSS to equip them with the needed knowledge to help their students. The 875

ZIPs will train other teachers at school-level within their ZIP's network. It is encouraged that other interested partners and institutions will work directly at the school-level to provide additional/complementary PSS mentoring/support and further build the capacity of the teachers.

- Retrofitting and repair of schools: All affected education institutions should be resilient to future disasters (resilient buildings, with inclusive access for all children). Through a detailed assessment of damaged classrooms, conventional classrooms with the majority of having roof damage will be repaired with resilient roofs and precarious classrooms will be built back better as "resilient-mixed" classrooms. Retrofitting should also continue for prioritized vulnerable schools.

- WASH in Schools: To build back better, WASH in schools need include separate facilities for girls and accessible for children experiencing disabilities, with the inclusion of MHM (menstrual hygiene management/dignity) kits for adolescent girls. According to consultations with girls, 84% shared that they do not have access to menstrual hygiene items.[115] In addition, to build back in a gender-sensitive fashion, MINEDH is advising that the facilities be built with 6 toilets for girls and 2 for boys plus the urinals (versus the earlier standard of 4 toilets for girls and 4 toilets for boys). Building back better includes ensuring the provision of minimum enabling conditions for enhanced learning such as clean water. Thus, WASH in schools need include the water system, such as the harvesting of rain water or drilled borehole and handpump, etc. where applicable.

- Emergency school feeding: The Government of Mozambique is advocating for emergency school meals to primary school children in the most affected districts - for 556,773 school-aged children over 150 effective school days. The school feeding program will facilitate the return of children to schools, ensure one nutritious meal while in school and thus contribute to household's overall food security and prevent children from being taken out of school to assist poor households earning a small income. MINEDH plans to phase-out the emergency school meals through complementary activities under the National Program for School Meals (PRONAE) which is the Home-Grown-School Feeding. This is a regular school meals program whereby smallholder farmers provide locally produced food to schools and promotes school gardening. MINEDH is building and expanding PRONAE all over the country, so some selected schools may be absorbed under PRONAE. The key is to ensure increased/stable enrolment, attendance, gender equity and pass rates through the provision of school feeding.

MEDIUM TERM NEEDS (1-2 years) - Medium-term needs include a focus on training, advocacy campaigns and strengthening oversight mechanisms to ensure school safety in the affected provinces. The medium-term needs include:

- Disaster Risk Reduction (DRR) Teacher Training: Establishment and training of School Committee of Disaster Risk Management (CEGRC) (training teachers and pupils on natural hazards, risks, impacts and procedures during a disaster cycle) and participatory elaboration of Basic Emergency School Plan (BESP/PEBE) per school, includes participatory risk mapping and planning; identification of DRR actions, first aid, early warning, resilient infrastructure maintenance, definition of evacuation routes, procedures during emergency, WASH, etc.

- Advocacy Campaigns: To promote the retention of children in school, especially girls, through awareness campaigns with the use of social media, theater and music. Other

115 According to Save the Children's Impact on Children Child Protection and Education in Emergencies Assessment (2019).

campaigns may promote positive WASH practices, elimination of school-related gender-based violence (SRGBV) and early marriage. Advocacy amongst community leaders and other decision makers should be promoted to address cultural practices and other issues affecting the participation of girls in school. The advocacy platform will also be an opportunity to share lessons learned from disaster risk reduction processes in cyclone Idai.

- Improve monitoring mechanisms: To ensure reporting of enrolment and attendance within schools with a focus on the creation of equity profiles and the tracking of emerging disparities (training and support by ZIP).

- Strengthen EMIS: To address the social impact of the disaster, inclusion is a key component of building back better to ensure schools are safe and accessible to children experiencing disabilities. Therefore, there is a need to strengthen data collection on children experiencing disabilities in the affected areas, including equity profiles. As a result, there will be a need to introduce a diagnostic and referral mechanisms in the affected area. Further, there is a need to strengthen the EMIS' capacity to collect, analyze and disseminate information on school safety and DRR.

LONG TERM NEEDS (beyond 2 years) - The longer-term needs go beyond the response and focus on longer term development issues to put in place and carry out multi-hazard preparedness of education institutions.

- School Councils: Strengthen the capacity of School Councils to reduce DRR and prevent early marriages and SRGBV and gender-based violence (GBV) in communities. Schoolcouncils were identified by MINEDHas the most important platform for communities to engage in school life.School councils were identified by MINEDH as the most important platform for communities to engage in school life. A school council kit, including materials on absenteeism, dropout, gender-based violence and violence against children has been developed to be promoted and used in every school.A school council kit, including materials on absenteeism, drop out, gender-based violence and violence against children, has been developed to be promoted and used in every school.

- Children's clubs: Creation and/or strengthening of children's clubs in schools as child empowerment platforms for children to prevent and address issues such as early marriage, SRGBV and GBV that hinder girls and children experiencing disabilities from participating in the teaching and learning processes.

- School counselors: In every secondary school where a counseling room does not exist, the MINEDH guidance is to establish a standalone counseling room to ensure privacy and avoid distractions to the academic classes. In addition, training of secondary school counselors in psychosocial support, sexual health and reproductive rights and SRGBV is an identified need. Os estudantes também serao treinados sobre o aconselhamento a seus pares.To support this, training of secondary students on peer counseling is also advised.

- Inclusive education: Support for specialized items, such as assistive devices and mobility equipment, proper communication materials/interventions and teacher training (inclusive of support to students experiencing cognitive and mental disabilities)
- Multi-purpose super-cyclone school & inclusion of accessibility for children experiencing disabilities: As the MINEDH DIEE has successfully piloted multi-purpose super-cyclone schools in other provinces, there is interest to introduce one in each affected province's critically vulnerable zones.

- Strengthen the capacity of higher education system to conduct research on disasters related topics: Set-up/pilot a dedicated center for research and management of disasters.

Implementation Arrangements

Implementation arrangements for recovery will vary by the specific sub-sectors within the Education Sector. The MINEDH and the MCTESTP play the key coordination role, setting the strategy and monitoring all education stakeholder to ensure standards and quality are upheld. Further, the MINEDH and MCTESTP ensure the capacity building at all education levels – Provincial and District. The MINEDH's DIEE ensures strict adherence to norms and standards in the design and construction of education facilities. In addition, the civil society organizations bring the voice of the community to the governmental decision-making process while also mobilizing the communities to participate in the recovery effort. While the developmental partners work closely with the governmental bodies bringing the global perspective to ensure international standards and human rights are upheld.

CULTURE

Sector Context

Mozambique is known for its rich traditional heritage and contemporary culture, which is defined through a unique combination of African, Latin, Portuguese, and Eastern influences.

The Island of Mozambique *(Ilha de Moçambique)*, a former Portuguese trading post on the route to India situated in the Province of Nampula, was inscribed as a UNESCO World Cultural Heritage Property in 1991. Its architectural unity is a testament to the consistent use, since the 16th century, of the same building techniques, material (*macuti*) and decorative principles[116]. Sites on the Tentative List for nomination as World Heritage status include *Manyikeni and Chibuene* (Province of Inhambane); *The Quirimbas Archipelago* (Province of Cabo Delgado); *Vumba Mountain Range* (Province of Manica); and *Ponta de Ouro Protected Marine Area* (Province of Maputo). Other sites of historical and cultural significance include Ibo Island and Quirimbas Biosphere Reserve (Province of Cabo Delgado) recently hit by the cyclone Kenneth.

In Mozambique, the majority of museums, repositories, and cultural institutions, are concentrated in the capital city of Maputo. These include the Historical Archives of Mozambique, the Museum of the Revolution, the National Money Museum, the Museum of Geology, the National Museum of Art, and the Museum of Natural History, which, together, contain the principle collections, archives, and libraries. The National Museum of Ethnology, located in the city of Nampula, also contains large collections of Mozambican artifacts. A number of cultural institutions, such as the *Casa da Cultura* in Beira, Buze, and Marromeu, act as important hubs for the organization of various cultural events and festivals.

For intangible cultural heritage (ICH), secular knowledge and practices, such as rain dances and other traditional dance forms used in rites of birth, marriage, and death, are tributes of the living heritage of Mozambique. Two elements of Mozambique's ICH – *Chopi Timbila* and *Gule Wamkulu* – were inscribed in 2008 on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity. Other intangible cultural heritage unique to Mozambique includes the traditional dances of *Xigubo*, *Tufo* and *Mapico*.
With particular emphasis on the tourist areas, cultural and creative industries (CCI), including the production of various cultural goods (e.g. literature; basketry; pottery), and the organization of cultural events (e.g. gastronomy; fashion; music) in various public spaces, cultural institutions, and galleries, among others, enable the patronage and enjoyment of individual and collective cultural expressions at the national and local levels, while presenting an opportunity to generate income for those employed in the sector. CCI associations include *Arterial Network Mozambique*, *Kucha Ka Dambu*, *Mugachi*, and *Kudumba*, amongst others, with the majority being based in the capital city of Maputo.

The Effects on Culture

Damage on Infrastructure and Physical Assets

Culture sector-related infrastructure suffered mostly from roofing damage and water infiltration which, in turn, affected the internal supporting structures at various sites. In some cases, this resulted in extensive damage to moveable heritage, including items related to the production of culture and creativity (e.g. crafting tools, musical instruments, and related equipment, etc.), books, and culture-related documentation.

116 https://whc.unesco.org/en/list/599

Culture Sector impact will show significant repercussions for organizations, associations and the livelihood of communities and individuals. Most of the assessed places and objects are expected to be either completely inoperational or with major reduction in functioning and revenue for at least six months. Depending on the infrastructural rehabilitation progress, cultural resources may see an improvement in the context of tourism also later this year.

Changes in Production of Goods and Services and Access to Goods and Services

The affected Provinces are home to a colorful and dynamic mix of practices and expressions that constitute the identity and social fabric of its communities. Although it is a challenge to assess damage and losses for ICH in general, it is likely that the effects of the disaster will be limited to the short-term - with a temporary interruption in the access to, practice and transmission of, ICH elements, mainly due to the loss of resources for traditional activities - and not necessarily a cessation of these practices in the medium and long-term. For example, the association of fishermen at the Port of Beira - *Associacao de Pescadores Mponese* - depend largely on the availability and use of traditionally-built canoes (*Ngalayiwa*) and nets to undertake long-established fishing activities, the process of which is linked to a unique set of skills and local knowledge. While it is believed that these skills and knowledge are not at risk of being lost in the immediate term, it is still important to consider strategies that ensure the safeguarding of such traditional fishing practices, with the view to prevent communities from adopting alternative fishing methods - including the use of plastic boats - which may be more disruptive to the environment. Such strategies would include the implementation of capacity-building workshops on the process of building the canoes, which would specifically target the younger generation in order to promote the continuity of this practice in the future. NB. Exchange established with the Fisheries sector in terms of households' losses caused by the interruption of fishing due to the losses of some 1000 traditional boats.

Similar impacts were observed in terms of loss of resources (medical plants) used for traditional medicine and the temporary cancellation of some practices. If this cancellation proliferates over a longer timeframe, we may observe the deterioration, and consequently the disappearance of these ICH elements which will constitute an irreparable loss for communities in particular, and for the Mozambican cultural diversity in general.

More direct economic losses have been observed in the component of cultural and creative industries, i.e. crafts production where the infrastructure damages resulted in almost 90% of reduction of productive activities.

One of the more important losses is the aspect of human impact in the culture sector identified in terms of access to culture. Specific examples of such cultural resources include the Casa Provincial da Cultura in Beira, which serves as a regional hub of culture for the Province of Sofala and other neighboring Provinces. Inability to perform activities by a variety of individual artists and craft persons in the damaged structure represent primarily a negative human impact to the individuals, their families as well as the communities to which they belong. The assessment efforts indicated however a monetary value considered necessary to facilitate the recreation of the conditions for restarting of the activities that took place in the pre-cyclone period.

Effects on Governance and Decision-Making Processes

Government building in Beira hosting the directorate for culture among others has suffered significant damage of working space and equipment. Staff employed having experienced damages of personal property as well as difficulties impacting their families, experienced reduction in working capacity and therefore reduction in the sector's responsiveness to the recovery processes. This effect is expected to last for several months, depending on the overall pace of recovery.

Increased Risks and Vulnerabilities

The impacts from the cyclone have largely exacerbated the preexisting lack of clarity in the role of the Direction of Culture (Sofala) in the ongoing administrative processes of rehabilitation of historical buildings. For instance, any architectural intervention on a registered heritage building would require a preliminary agreement and subsequent supervision of the culture directorate. As this has not been the case preceding the cyclone, there is a justifiable risk of such "non-compliance" proliferating throughout the recovery period with a sharp increase in potential loss and irreversible damage to historical structures.

It is therefore necessary to foresee a specific support to the cultural administration in terms of strengthening their capacity in communicating and coordinating with other relevant stakeholders in the recovery process. This support should also envisage developing a functioning Disaster Risk Reduction, Management and Mitigation strategy for the Sector.

Overlaps with other sectors e.g. administrative buildings that are registered heritage buildings and need to consider specificities in terms of restoration that requires involvement of cultural administration.

Table 40: Summary of Damage and Loss for Sector (in local currency and USD)

Damage and Loss Per component	Damage Local Currency		Loss Local Currency	
	Public	Private	Public	Private
Cultural Public Administration	160,945,167	0	354,000	0
Built Heritage, Culture/Natural Sites, and Monuments	14,526,840	0	480,000	0
Moveable Heritage, Repositories, and Institutions	0	1,000,000	0	215,000
Intangible Cultural Her	200,000	777,880	0	0
Cultural and Creative Industries	2,375,000	1,073,000	0	81,000
Total	**178,047,007**	**2,850,880**	**834,000**	**296,000**

Recovery Needs

The priority should be the rehabilitation and restoration of all built heritage to ensure the safeguarding of movable heritage objects and that these spaces (re)start generating revenue. Access to all the concerned sites (cultural centers and libraries e.g.) should be reactivated in the shortest possible time. For the cultural and creative industries, and specifically the craft sub-sector, natural resources availability will need to be assessed from the sustainability point of view.

The estimated recovery needs for the culture sector is **USD 3,856,643** and incorporates the principles of Build-Back-Better (BBB) and Disaster Risk Reduction (DRR).

The core of the short-term (2019-2020) strategy for recovery focuses on the rehabilitation/ restoration works at key sites (roof replacements). Maintaining the historical or cultural value of these sites is critical to ensuring that it retains their listed status.

Table 41: Recovery needs

Recovery Needs	Needs Local Currency		Needs USD	
	Public	Private	Public	Private
Cultural Public Administration	173,695,967	0	2,713,999	0
Built Heritage, Culture/Natural Sites, and Monuments	59,950,077	0	936,720	0
Moveable Heritage, Repositories, and Institutions	0	1,420,000	0	22,188
Intangible Cultural Her	350,000	6,400,000	5,469	100,000
Cultural and Creative Industries	2,555,000	2,454,100	39,922	38,345
Total	**236,551,044**	**10,274,100**	**3,696,110**	**160,533**

In the medium to long-term, continued rehabilitation will be ongoing, along with targeting enhanced opportunities for cultural producers through e.g. regeneration of raw materials, capacity-building initiatives to sustain and augment skills in cultural products, traditional building...
Knowledge management, capacity building an advocacy for DRR of the culture sector must be strengthened...to fully integrate DRR of the culture sector into national and provincial-level DRR plans.

The recovery process should therefore bring an encouraging sustainable economic, social and environmental development strengthening the intercultural understanding, and valuing heritage through quantitative and qualitative actions and a follow-up commitment to the rehabilitation of cultural and tourist sites and related activities for the benefit of affected communities and Mozambique as a whole.

Recovery efforts should also focus on ensuring local capacity building to better manage assessment of impacts on cultural heritage, managing disaster risks and developing and implementing mitigation plans. A regional technical coordination meeting should be organized to undertake an assessment of disaster recovery needs and elaborate a common strategy for the recovery of the Culture Sector, as well as to build capacities in conducting PDNAs of the

Culture Sector at the regional level.

Recommendations for DRR and Building Resilience

- Policy needs to be strengthened to include disaster mitigation strategies and effective implementation plans, particularly in the event of disasters such was the cyclone Idai (e.g. Category 3 and higher) with the specific attention to the process activation in holiday periods;
- Training for culture sector stakeholders (CCIs and heritage) on mitigation planning and implementation strategies;
- Ensuring up to date inventories of heritage resources to better inform strategies as well as the digitization of heritage collections and inventory documents;
- Undertake a study to determine on a case by case basis of heritage places how to mitigate
- against flood damage;
- Build safer storage areas for craft and cultural objects to minimize water damage in the event
- of flooding;
- Provide a conducive environment for the mobilization of intangible cultural heritage practice
- and transmission as a key resource of resilience.

Table 42: Short, Medium & Long-term Recovery Initiatives and Costs

	Item	Description	Cost	
			Local Currency	USD
Short term	Rehabilitate damaged infrastructure, access to cultural institutions and spaces and cultural assets. Create conducive environment for intangible cultural heritage practice and transmission	Cultural & Research Institutions, Moveable Heritage, Collections, Depositories, Intangible Cultural Heritage & Creative Industries	234,141,919	3,658,467
Medium-Term	Undertake a more detailed restoration, inventories and reduce risks	Built Heritage and archaeological sites, complete inventory of all cultural assets and resources	11,983,225	187,238
Long Term	Update Cultural Policy and reinforce culture and heritage expertise	Governance, capacity building in traditional knowledge and conservation techniques	700,000	10,938

Implementation Arrangements

Implementation arrangements should seek to build long-term capacities and resilience. A project-based approach should be used in most instances ensuring that all partners and actors are fully engaged in the process.

Fig. 23: Coordination mechanism for recovery in the Culture subsector

FOOD INSECURITY

Sector Context

Before Tropical Cyclone IDAI struck Mozambique, the country was already facing high levels of food insecurity. Agricultural productivity and production for the 2018-2019 main season was already expected to be quite low due to drought conditions. The onset of the rainy season was late and a dry spell fell mid-season. The combination resulted in moisture stress and wilting of the early-planted crops in many central and southern areas of the country (the same regions in which the provinces most affected by cyclone IDAI are located). This led to below average agricultural productivity in the affected areas. In addition to the drought-related yield decreases, incidences of armyworm infestation were reported, which contributed to a further drop in productivity.

Between September and December 2018, 1.78 million people were severely food insecure in the country, according to the Integrated Phase Classification (IPC) and Mozambique's Technical Secretariat for Food Security and Nutrition (SETSAN). Of these, an estimated 814,700 were severely food insecure in five provinces: Sofala, Tete, Cabo Delgado, Gaza, and Inhambane. The most affected provinces were Tete (more than 359,300 people) and Gaza (more than 318,200 people).

The Effects on Food Security

While assessments are currently ongoing to determine the full impact of IDAI on household food security, preliminary findings indicate that the impact of the cyclone has seriously worsened levels of food insecurity in the country.

Food availability in the affected districts was severely affected in several ways: a) through the destruction of barns where family reserves are kept, b) the destruction of crops in the field, c) the destruction by flooding of markets and local shops, and d) the total or partial loss of access to markets due to physical or infrastructure constraints. In affected districts it is unlikely that there will be harvest to sell during the next commercial year, and several markets will depend entirely on imports from other districts or neighboring countries.

Access to food is therefore severely compromised, and most displaced populations will depend on food assistance to meet their needs. The primary way to obtain cash by poor households is through the sale of the remaining food crops and animals. Others subsist on what they could recover from their stocks but much of this food is of poor quality, already germinating or rotting. Even those who may have some access to healthy food do not have the utensils to prepare it. Other documented coping strategies include limiting portion sizes, reducing the number of meals eaten per day, and eating wild foods.

Negative livelihood coping strategies have not been identified, and the sale of assets or out-migration has not been reported. However, food coping strategies are prevalent, particularly the reduction in the number of meals consumed per day.[117] Households also report having to depend on food assistance or gifts to meet their food needs. Over half of the consulted communities have access to food assistance. However, they report that the food aid is not enough to meet their needs.[118]

117 WFP, and other, 2019, EFSA – Idai cyclone- Mozambique

118 OCHA, 2019, Multi-sectorial rapid assessment, Post cyclone Idai, Mozambique

Malnutrition, both acute and chronic, is expected to increase in the most vulnerable population groups due to the lack of food, the deteriorating hygiene and sanitation conditions, and the underlying levels of vulnerability prior to the disaster. This is especially true for children, pregnant and lactating women, elderly and the chronically ill. Some communities have not yet received any emergency aid because they are inaccessible, and their food security is likely to be significantly worse than what has been documented in other affected communities.

Among children under-five, stunting has remained at 43% since 2008 and stunting is acknowledged as a national concern. The country has suboptimal levels of Infant and Young Child Feeding Practices for children aged below 2 years, particularly for exclusive breastfeeding and the quality of complementary feeding, which is often exacerbated by high levels of household food insecurity.

Currently, it is estimated that in the next few months, there may be around 100,000 children 6 to 59 months of age with acute malnutrition and 130,000 pregnant and lactating women with moderate malnutrition, including those with HIV, and 70,000 older people with moderate to acute malnutrition, due to food insecurity, poor sanitation and overall poor living conditions. Nutritional deficits will most likely increase because of poor diets and the low absorption of nutrients due to infectious and parasitic diseases.

Recovery Needs

The affected population will require food assistance, at least until the next harvest, with priority for the internally displaced families, female-headed households, pregnant and lactating women, children under five, the elderly, people with disabilities, and other vulnerable groups. The recovery needs in the food security sub-sector is estimated at USD$ 353.7 million.

INFRASTRUCTURE SECTOR

WATER AND SANITATION

Sector Context

In Mozambique the Ministry of Public Works, Housing and Water Resources (MOPHRH) is the government entity responsible for water supply, sanitation and rainwater drainage services and management of water resources. The MOPHRH is also responsible for the elaboration and development of water sector policies and strategies. The water supply and sanitation subsector can be divided into 3 main areas: (i) systems providing water to urban areas, the provincial capitals and strategic cities, (ii) systems providing water to district capitals and (iii) systems providing water supply to administrative posts and locality capitals and also water points providing water supply to the village populations in rural areas.

In relation to water quality control, the Water Law states that the Ministry of Health is responsible for controlling water quality for human consumption. The Water Services Regulatory Authority (CRA/AURA) has an important role in setting the water and sanitation services standards and monitoring the service quality provided by the different services providers.

In 1998, the Mozambican Government approved the Delegated Management Framework (DMF) for urban water supply. The DMF establishes the separation of functions between provision of water services and economic operation and regulation for water supply and sanitation services. The introduction of the DMF aimed to alter the progressive deterioration of water supply and sanitation systems in urban centers. On this basis and independent and autonomous entity for Water Supply and Sanitation Services Regulation - CRA/AURA was established. In addition, the entity FIPAG was created in order to mobilize investments and manage the water supply systems in the provincial capitals, strategic cities and other large cities.

The DMF was extended to district capital water systems through the establishment of AIAS in order to expand and improve the quality of water supply and sanitation services. Under its responsibility, AIAS has approximately 130 systems, providing services over 3.8 million people. These systems are managed by autonomous entities or by private operators. In addition to water supply, AIAS is also responsible for the sanitation and rainwater drainage for all urban centers.

Water supply for those not covered by FIPAG or AIAS systems is provided by small water systems or individual water points under the national responsibility of DNAAS. The Provincial Directorate of Public Works, Housing and Water Resources (DPOPRH) and the District Planning and Infrastructure Service (SDPI) exists in every province and district, respectively. The DPOPHRH and SDPI are the local entities responsible to plan, contract and monitor the implementation of water supply and sanitation projects at their levels. The management of water supply systems for sub-district Administrative Posts and localities are done by autonomous entities or by the private sector. The management and maintenance of rural water point is done by community based water committees.

At the national level, safe water supply service coverage reaches 50.9% of the population (83.1% in urban areas and 36.7% in rural areas). With regard to improved sanitation, the coverage rate at national level is 26.9% (57.8% urban and 13.2% rural areas)[119]. In the Central Region (Sofala, Manica, Zambézia and Tete provinces) affected by Idai cyclone, the coverage rates of water supply (urban and rural) fluctuate from 29.7% (Zambezia) to 60,7% (Sofala). In

119 INE: IOF 2014/2015

relation to improved sanitation coverage (urban and rural) its vary from 24.6% (Zambezia) to 46.8% (Manica).

Table 43: Access to safe water and improved sanitation in the 4 affected provinces

Province	People with safe water access			People with improved sanitation solutions		
	% Average	Urban	Rural	% Average	Urban	Rural
Sofala	60,7	786.275	544.757	44,9	710.711	273.381
		86,4%	42,5%		78,1%	21,3%
Manica	45,9	468.921	378.670	46,8	313.560	234.271
		76,3%	30,7%		51,0%	19,0%
Tete	49,9	440.284	832.161	44,3	431.126	696.610
		80,9%	41,5%		79,2%	34,8%
Zambézia	29,7	481.556	1.000.492	24,6	377.093	725.739
		53,60%	24,40%		42,20%	17,70%
4 Provinces included in PDNA	42,5	2.177.036	2.756.080	32,4	1.832.490	1.930.001
		73,2%	31,9%		61,6%	22,4%

The Effects on Water and Sanitation

The interruption the energy supply due to the Idai cyclone affected all systems that relied on power supply for the operation of the different water supply components such as: intakes, pumping stations, pipe line pumps, distribution network, water treatment and wastewater treatment plants. Some systems had alternative power systems through generators or solar panels and were able to continue operating and were not affected by the floods or cyclone.

On the other hand, many water points in rural areas based on wells and boreholes, fitted with hand or electromechanical pumps were affected by floods, leaving more than 40,000 families without access to safe water (quantity and quality).

Table 44: Shows the water systems and the affected population

Water/sanitation facility type	Number facilities affected	People affected
Wells and borehole (rural)	705	211.500
Secondary water supply systems (urban)	42	462.000
Main water supply system (urban)	5	1.177.244
Latrines and septic tank (urban)	118.604	593.020
Latrines and septic tank (rural)	71.349	356.745

The major losses reported by the water sector are those related to the non-payment by water and sanitation services[120], to alternative water supply provision, for the rent or purchase power generators, and due to the increased costs of water treatment due to input water increased turbidity. In addition, losses included the necessary repairs on different components of water and sanitation systems to increase partial or total functionality of storm damaged system. In the case of FIPAG, this has impacted its ability to manage its debt service. It is estimated that the non-payment for services could extend over 3 or 4 months.

Many families that were directly affected by the cyclone, including those that had their water supply service interrupted, were forced to buy bottled water or to get water from trucks with prices during the crisis up to 10 times higher than normal market values.

The precarious conditions of water and sanitation services after the cyclone had a direct impact on the well being and health of the population, ultimately resulting in the emergence of the Beira cholera outbreak. This is a clear secondary impact of damaged WASH services due to the storm.

Effects on urban water supply systems

In general, the Beira/Dondo water supply system, managed by FIPAG, was significantly affected, being totally disrupted for 10 days, affecting more than 340,000 people. The water supply system was partially restored to service on March 22, 2019 with the support of UNICEF and DFID after having suffered from the unstable and damaged energy supply system, the lowering of the water level collection intake, loss of chemicals for the water treatment and significant ruptures in the distribution network.

From March 22, 2019, the Beira and Dondo water system was reestablished at 90% of its capacity, however there still remains significant damaged infrastructure in the network with temporary rehabilitation actions taken to date needing to be permanently fixed in order not to compromise the future functioning of the system.

The water supply systems managed by FIPAG in Manica Province, specifically in the cities of Manica, Chimoio and Gondola, were also interrupted immediately after the cyclone due to lack of energy resulting from the fall of power lines poles as well as considerable damage in water distribution network, impacting almost 350,000 people. The restoration of the system has been progressive but the systems are still not fully functional with works ongoing to repairs leaks and erosion points.

In Tete province, FIPAG also provides water to Tete and Moatize Cities, serving a population of approximately 350,000 people. These services from these systems were also interrupted, mainly due to the flooding of well fields, damages into electromechanical equipment (pumps, generator, electrical panels), and damage to the water distribution network due to erosion.

In Zambezia province, the FIPAG managed Quelimane water system suffered minor damage, including ruptures in the water main pipeline, damage to three water boreholes and damage to the distribution network. This resulted in low network pressure and irregular provision of water services.

The main actions in response to the various damages to the various systems affected included providing power generators for key water supply components, providing water-trucking services to at risk populations, and the procurement of chemicals for water treatment.

120 The management model and rates vary according to the type of operator and system

Secondary and rural water supply systems

The main impact of the cyclone to the secondary water supply systems as well as to rural water systems included the increased of inlet water turbidity, collapse of the electrical network, damage to operational support infrastructure (pumping stations, chemicals warehouses, laboratory and offices), damage to the water treatment systems, and damages in main pipeline and secondary distribution networks.

For rural water systems, the flooding has cause sedimentation and failure in boreholes and hand pumps. In some cases, the boreholes and wells were completely under water, polluting the entire system. Some small rural water systems that had solar power systems reported damage or loss of solar panels.

Although some of the damaged systems are already partially working there remain problems and constraints that need a quick intervention in order to reestablish service levels, ensure the reliability and continuity of drinking water supply, in order to avoid put population at risk to face water-borne diseases.

The general, response actions in these systems include the provision of power generators, chemicals for water treatment, distribution of filters for water treatment at the household level, hygiene kits, provision of (Chlorine bottle- CERTEZA), mobilization of compact water treatment plant, water trucking and emergency water supply in shelters. In addition, contaminated boreholes and well will require cleaning and disinfection.

Effects on urban sanitation systems

Beira City is one of the few cities in Mozambique with a conventional sanitation system. Due to the heavy rains of the storm and subsequent high soil water content, there has been differential fissure in the foundation of the civil works. There is an urgent need consolidate the structure in order to avoid an eventual collapse.

Other damages assessed in the Beira sanitation system were the obstruction of pumping stations, sunken sewage collectors as well as inspection boxes, obstruction of collectors due to coarse materials entrainment such as branches, sand and solid waste, and sewage spills due to the rupture of some sewerage pipelines.

Both in parts of Beira City as well as other urban areas, where the conventional drainage system is not implemented, households have individual on-site sanitation solutions such as septic tanks or latrines. In the case of septic tanks, most were flooded thus exposing its contents to the communities and required cleaning and repair. In the case of latrines, most were mostly destroyed and the latrine pit flooded.

Effects on rural sanitation systems

In the rural areas the primary sanitation solution was on-site household latrines which suffered the same damage as latrines in peri-urban areas. Typically though. The rural latrine superstructure and slabs were made of less durable materials and were essentially 100% destroyed.

Table 45: Summary of damage and losses for the WASH Sector (in local currency and USD)

Damage / Losses	Damage (Meticais) x 10^3		Losses (Meticais) x 10^3		Damage (USD) x 10^3		Losses (USD) x 10^3	
	Public	Private	Public	Private	Public	Private	Public	Private
Damage	572.160	384.000			8.940	6.000		
Water supply	512.000				8.000			
Sanitation	51.200	195.200			800			
Drainage system (Beira)	8.960	188.800			140			
Losses			183.040	175.680			2.860	2.745
Water supply			144.000	24.640			2.250	385
Sanitation			39.040	151.040			610	2.360

Effects on the drainage system of Beira

The rainwater drainage system in the urban area of Beira was built in the 1960s and basically consists of a classic network of collector culverts. This rainwater drainage collector network serves the consolidated urban area of Beira City. The drainage network has approximately 57 km of culverts. The network was rehabilitated in the 2006 -2011, under a project financed by the European Union for approximately 60 million euros.

Under a World Bank funded project completed in 2018 (US$52 million), approximately 11.5 km of open channels were rehabilitated. In the same intervention, the Palmeiras channel was rehabilitated, which is the main component of rainwater discharge to the sea. In addition, this project implemented 6 control stations equipped with 29 gates and created the retention basin of Maraza, a temporary water reservoir with 300,000 m^3 capacity. Other secondary infrastructure as service roads, crossings and bridges were included in the project as well.

In general, the drainage system in Beira responded positively to the rains, with only temporary flooding in some neighborhoods. This was identified to be due to the lack of secondary and tertiary drainage network linked to the main channel (Palmeiras channel). As a result of the rehabilitated system functioning correctly, the rainwater was drained to the sea and the system prevented material loss and prolonged flooding.

During the cyclone Idai, once again, the system was efficient and contributed to the rapid water disposal in the districts covered by the drainage network. The exception was for the areas of Chipangara, Macuti, Macurungo, Estoril and Chota, whose channels (A1 and A3) were not rehabilitated and therefore not able to handle the high levels of rain.

Regarding drainage system itself, damages were limited to of control stations (windows, roof, doors), secondary infrastructure (antennas, public lighting and Maraza fence) and housing units that were built during the drainage project construction. The drainage system crossing roads, access roads, handrails and floodgates system did not suffer any type of damage[121].

The rehabilitated system is still within the responsibility of the contractor for the rectification

121 AIAS, PFT PLANGE, Fase (2019) Rehabilitation of the Drainage System of the City of Beira - Cyclone Idai - Report of damages in the Drainage System of Beira and Cost Estimate of Repair (March-2019)

of defects until September 7, 2019. The limited damages by cyclone Idai are not covered by the contractual terms of the period of liability, because it applied to construction defects or equipment installed, therefore this situation leaves the responsibility for repairs to the Beira Sanitation Autonomous Service (SASB).

Beyond the minor drainage system damages, the drainage project contractor´s main camp (installations, vehicles and equipment) were completely destroyed. However, some equipment was partially insured.

Crosscutting Issues

Damage to the sanitation systems has had negative effects on the environment due the lack of wastewater treatment in Beira city. As the treatment site was not functional during the power cuts, raw sewage was draining directly to the Púgue River until power was restored. In addition, the overflow of fecal material from household latrines and septic tanks in both rural and peri-urban areas produced environmental and public health risks. Hence the urgent need to restore these services in the short term, as well as provide improved sanitation solutions to avoid open defecation.

The current limited water and sanitation services expose women and girls to a greater gender-based violence risk, since they have to travel more often and/or cover longer distance for the water collection. Also, use of shared public toilets and latrines (many times without lighting) increases the risk for women and girls. Therefore, water and sanitation services should observe and follow the actions included in the national Water and Sanitation Gender Strategy and Action Plan (2017) to ensure that the water and sanitation sector contributes to gender equity in access, use and control over water resources and adequate sanitation.

People with disabilities, as well as the elderly suffered disproportionally as a result of the storm. Especially those with movement disabilities. Moving forward, any reconstruction needs to design in accessibility requirement for water and sanitation facilities, particularly in resettlement areas, schools and health centers. In order to insure the accessibility and inclusion, it is only expected to increase overall project costs by 0.5-1%, if designed in from the start of the project.

Recovery Needs

The reconstruction program strategy will prioritize the normalization of the life of families who are in the resettlement areas (Annex 2 list some the resettlement areas). For the sector, this means initially guaranteeing water supply by water trucking or small water treatment plants, as well as the provision of household level water filters. The goal in the initial response stage is to ensure that every person has access to at least 20 liters of safe water per day. In the medium term, construction of boreholes or wells will be required to provide water to families in resettlement areas. In cases where the resettlement area has more than 1,500 people, the construction of small multi-use water supply system or the extension of an existing system will be considered.

In the remaining rural areas of affected districts, water sector actions will promote the rehabilitation of flooded water points. Rehabilitation work will consist in cleaning boreholes, repairing the apron and replacing damaged pump components. For small rural water systems, the works will include the replacing of solar panels and other damaged system components. For water supply systems in main cities and secondary towns, priority will be given to those

areas where the current water supply is being provided through emergency systems (e.g. through water trucks, mobile water treatment plant) due to damages of the water supply system or the system still inoperative, such as Buzi in Sofala Province. To those systems that have already been partially restored, such as systems in Beira, Chimoio, Tete and Quelimane, actions will focus on rebuilding damaged components resiliently to return to the coverage levels that existed prior to cyclone. Additionally, CRA will strengthen the water quality control monitoring program in Beira and Dondo cities, as well as the prepare water safety plans in Beira, Chimoio, Tete and Quelimane.

Table 46: summary of recovery needs

Needs	(Meticais) x 10^3		(USD) x 10^3	
	Public	Private	Public	Private
Total Needs	6.674.496	125.440	104.289	1.960
Water supply	802.176		12.534	
Sanitation	624.320	125.440	9.755	1.960
Drainage system (Beira City)	5.248.000		82.000	

In rural sanitation, the program will initially prioritize the construction of public sanitary blocks in the resettlement areas. These emergency blocks will be used by all population in the resettlement area while they are constructing their own family latrines. The preferred approach will be to apply the national sanitation strategy and the CLTS (Community Led Total Sanitation) and PHAST (Participatory Hygiene and Sanitation Transformation) approaches. These approaches target the community as a whole and not the individual family to improve their environmental sanitation situation. This is normally done through a “triggering” event where the community rejects open defecation. Once the community commits to becoming ODF (open defecation free) and initiates their sanitation action plan, household latrine construction can be complemented by the slabs distribution for families that are at the impacted areas.

With regards to urban sanitation, special attention will be given to promoting sanitation activities in peri-urban areas of Beira, Quelimane, Chimoio and Tete cities in order to prevent cholera and diarrhea cases.

Finally, having been demonstrated the effectiveness of Beira drainage system to prevent and mitigate floods in Beira, it is necessary expand this rainwater drainage system and complete the rehabilitation of the remaining canals.

Table 47: Short, Medium &Long-term Recovery Initiatives and Costs

Term	ItemItem	Priority (1 to 5)	Description	Cost	
				(Local Currency Meticais) x10^3	USD x 10^3
Short term	Water	1	Water systems to resettlement areas	28.800	450
	Water	1	Wells, boreholes and water systems to rural areas	217.600	3.400
	Sanitation	1	Sanitation solution to resettlement areas	124.800	1.950
	Water	1	Strengthening water quality and monitoring program (Beira e Dondo)	2.176	34
	Sanitation	2	Sanitation promotion in peri-urban areas	27.200	425
	Water	2	Water supply system Urban[3]	486.400	7.600
	Water	2	Secondary water supply systems (urban)	54.400	850
	Sanitation	3	Sanitation promotion in rural areas	72.000	1.125
	Sanitation	3	Latrines reconstruction (urban)	105.280	1.645
	Sanitation	4	Latrines reconstruction (rural)	74.240	1.160
	Sanitation	4	Septic tanks rehabilitation (urban and rural)	26.240	410
Medium Term	Water	1	Water safety plans	12.800	200
	Sanitation	1	Rehabilitation sanitation (sewerage) system of Beira City	320.000	5.000
Long Term	Drainage	5	Drainage system expansion Beira systems (main channels)	5.248.000	82.000

Recommendations for DRR and Resilience

Taking into account the changing climate, it is necessary to take specific actions to strengthen the infrastructure in areas susceptible to floods, droughts and cyclones. The adaptation of infrastructure and increased community resilience are essential for the sustainability of water and sanitation services. Some considerations to keep in mind during the reconstruction of the different components of the affected water and sanitation systems are the following:

- Anchor roofs of buildings, warehouses, stations and other type in order to withstand the forces of wind.
- Consider alternative, decentralized power systems (generators, solar panels) to supply energy for critical components.
- Stock chemical for water treatment in warehouses before raining season starts to deal with increase water turbidity.

- Implement water intake protection system against floods.

- Design and locate electromechanical equipment and other key water components above flood level.

Implementation arrangements

The post-Idai reconstruction program will be led by the Mozambique government at all levels and in particular through the post-Idai Reconstruction Office. The Reconstruction Office will ensure sectoral coordination, implementation and achievement of the Program goals.

To avoid duplication, the water sector will set up a sectoral coordination platform for cooperation partners and national institutions. This mechanism will facilitate dialog and active participation of donors, as well as promote better program implementation.

The program will be implemented using existing structures of government particularly FIPAG, AIAS, DINAAS, as well as the Provincial Directorate of Public Works, Housing and Water Resources, and Planning and Infrastructures District Services of Sofala, Manica, Tete and Zambezia. For direct implementation of activities and supplies, the private sector will be involved. The private sector will also be involved in the sanitation promotion following the national sanitation strategy. Civil society organizations will be involved in the activities of community mobilizing and strengthening the capacity of community structures.

ENERGY

Sector Context

Mozambique has significant infrastructure assets in electricity generation, transmission and distribution. The country has approximately 2,800 MW of installed generation capacity and close to 20,000 GWh of generation a year, predominantly hydropower and smaller portion of gas-fired power generation. There are two separate power subsystems in the country – the Southern subsystem that includes the capital Maputo, and central-northern sub system. The provinces hit by cyclone Idai, such as Sofala, Manica, Tete and Zambézia, are served by central-northern subsystem.

A range of electricity infrastructure was operating in the affected areas. In Manica province, Chicamba and Mavuzi hydropower plants, with combined capacity of 90 MW, were dispatching power to the grid. Near the provincial capitals, a number of substations and distribution lines were serving electricity to approximately 570,000 users. It is noted, however, the majority of people and institutions in affected provinces did not have access to electricity. The electrification rate in Sofala, Manica, Tete and Zambézia ranged between 10% to 32%, compared with a national electrification rate of 30%. The majority of grid connections were in urban areas near the provincial capitals.

Table 48: Electricity infrastructure assets in Beira, Chimoio, Tete and Quelimane.

Generation	2 plants	Chicamba (52MW) & Mavuzi plant (38MW)
Transmission Lines	1,345 km	20 transmission lines connecting various generation plants and substations in the region
Substations	30 stations	Major substations: Matambo, Chimuara, Marromeu, Ceramica, Catandica, Manica, Chibata, Chimoio, Gondola, Inchope, Dondo, Lamego, Guara-guara, Mafambisse and Munhava
Distribution lines	10,216 km	4663 medium-voltage lines and 5463 low-voltage lines
Distribution transformers	3,990 units	Including EDM-owned transformers and private owned ones.

The electricity infrastructure in affected areas are primarily operated by the Electricidade de Moçambique (EDM), government-owned utility, which owns most of the assets in the sector. In addition, Hidroeléctrica de Cahora Bassa operates a 2,075MW hydropower plant in Tete province and a 533kV High Voltage Direct Current line from Tete to South Africa. Fundo de Energia (FUNAE) also had some assets such as mini-hydro generations plants, as well as standalone solar PV systems for health centers and schools. These decentralized generation assets were serving rural settlements not the main electricity grid. EDM and HCB were also exporting electricity to Southern Africa Power Pool (SAPP) and bilateral contracts.

The Effects on Energy

Significant portion of electricity infrastructure in affected areas have been damaged. These include damages to hydropower plants, transmission lines, primary/secondary substations, distribution lines, transformers and standalone solar PV systems. These damages disrupted electricity supply to households and institutions in the affected areas. It is estimated

that 570,000 customers were affected, and the provision of new grid access had to pause due to the resource needs to rehabilitate the damaged grid infrastructure.

The cost of physical damage to the electricity infrastructure is conservatively estimated to be $133.5 million. The largest damage was in Beira, which was hit hardest by Idai, followed by Chimoio, Quelimane and Tete. However, the detailed assessment of the damage has not been possible due to continued presence of flooded water and damaged roads. Therefore, more damage may be identified as more detailed survey of the impacted area is carried out. The cyclone has also impacted EDM's business as usual in other regions of the country as spare materials and human resources were allocated to Sofala and Manica to support the recovery efforts.

Revenue loss is estimated at approximately $48 million but may grow further, see Annex 4. EDM's sales and revenues have been negatively affected due to its inability to supply its customers. EDM may have also incurred minor loss due to the delay in adding new customers to the grid. Monthly loss of US $3.8 million, which is 8-9% of EDM's pre-cyclone average monthly revenue, towards the end of 2019 is expected. The scale of loss will vary depending on how rapidly the supply of electricity can be restored in affected areas. No major damage of loss to the private sector (e.g. independent power producers) has been reported. HCB has lost revenue of $15 million due to damages to its transmission infrastructure and its inability to export power to SAPP.

Petromoc, the national fuels distributor, has also incurred some damages and losses. Damage has been recorded in the Beira Oceanic terminal, in the GPL terminal, at the terminal of the INPETRO, at the terminal of PETROBEIRA, in the aero-installation of Beira and refueling stations. These damages can be summarized as the collapse of the roofing of administrative and operational buildings and some ceilings of diesel storage tanks. No critical damage that impedes business continuity of Petromoc has been recorded.

Table 49: Summary of Damage and Loss

Damage and Loss	Damage US$ million		Loss US$ million	
	Public	Private	Public	Private
Generation	$30.0	NA	NA	NA
Transmission (including substations)	$27.7	NA	$15.4	NA
Distribution	$70.3	NA	$32.5	NA
Fuel stations	$1.4	NA	$0.2	NA
Others	$4.1	NA	NA	NA
Total (US$)	US$ 133.5		US$ 48.0	
of which Sofala province	$78.3	NA	$22.6	NA
of which Manica province	$52.4	NA	$20.3	NA
of which Zambezia province	$1.6	NA	$5.0	NA
of which Tete province	$1.1	NA	$0	NA

The sector responded rapidly to restore electricity services in the affected areas. Immediately after the aftermath of cyclone Idai, EDM mobilized its in-house engineers and local contractors to restore electricity services. It has hired diesel generators to supply power to the critical lifeline

facilities such as hospitals and water treatment facilities. This cost of the diesel generation is estimated to be around US$ 500,000. The generators, which have operated 34 days, have now been demobilized and returned to the owners. EDM has also mobilized its available warehouse stock of pole and line materials, as well as available supply from local suppliers to restore distribution lines.

However, the sector has limited resources to continue the restoration effort. EDM's warehouse stock of spare materials has depleted, making it a challenge to continue the service restoration effort. In addition, as EDM has been in weak financial standing when hit by Idai, it has limited financial resources to mobilize. The cost of temporary diesel generators and fuels may become a burden for EDM unless the grid supply is restored to end of use of temporary solutions. All the materials mobilized from the local suppliers were on credit basis, which will add pressure to already weak financial situation of the EDM. Similarly, FUNAE is also in the shortage of financial resources beyond the basic repair.

Crosscutting issues

The lack of electricity services affected critical social lifelines such as hospitals and water treatment as well as other public services in and near provincial capitals. Lack of these services affect effective disaster response and recovery. In addition, the following crosscutting impacts have been identified.

Employment and livelihoods - there is likely to be impact on employment and livelihoods in the provincial capitals due to the inability of industries to operate their assets (e.g. manufacturing machines, water pumps, hotels).

Environment - Loss of electricity and gas services may increase health risks associated to increased use of traditional fuels (e.g. fuelwood, charcoal, kerosene) and result in accelerated deforestation to supply wood-based fuels.

Governance – lack of electricity services to provincial government facilities compromised their administrative functions and availability of communication tools.

Recovery Needs

The immediate priority of the sector is the procurement of materials needed to restore electricity service. These include replacement materials for transmission distribution lines as well as transformers, for which warehouse stocks of EDM are largely depleted. Given the level of emergency, fast-track procurement is key to reduce the lead time. Administrative waivers may be considered to enable such fast-track procurement.

Priorities of service restoration will be given to areas with highest economic and human impact. These include i) economic activities, such as industrial zones, agriculture, trading and tourism industries; ii) high density population and high electricity consumption; iii) social infrastructures such as like hospitals, schools and water treatment plants; iv) administrative functions for public services.

Table 50: Short, Medium & Long-term Recovery Initiatives and Costs (local currency & USD)

	Item	Priority (1 of 5)	Description	Cost (US$ million)
Short term	Procurement of materials required for rehabilitation	1	Supply of materials for distribution and transmission infrastructure to enable continuation of EDM's restoration efforts in 2019 & 2020	10.3[4]
	Rehabilitation of Chicamba & Mavusi hydroelectric dams	2	Recovery of 90MW from Chicamba end Mavusi Dam important for stabilization of the center system and the energy balance	23.3
	Rehabilitation of mini-hydro facilities	2	Rehabilitation of 4 mini-hydro plants in Sembezeia, Chiuraírue, Muôha and Rotanda, totaling 815kW	3.9
	Rehabilitation of standalone solar PV systems	2	Rehabilitating 227 PV systems in health centres, schools, administrative posts and households	2.3
	Reconstruction of collapsed towers in all transmission lines	3	Recovery of the security of supply of the center region which is now operating in contingence	12
	Reconstruction of new DL2 in still towers	4	Reconstruction of the old and damage 70km 66KV line in still towers feeding 5 districts	8.7
	Reconstruction of Munhava substation	5	Rehabilitation of the old Munhava substation feeding Beira, proximately 70MW and 200,000 consumers.	2
	Subtotal			62.5
Medium Term	Replacement of damaged roofs in substations	1	Chimuara - Ceramica - Mocuba - Alto Molocue - Substation Roof Replacement	0.13
	220 000 km of MV in Beira	2	Reconstruction of 220 km of MV /LV lines in Beira Chimoio and Qulimane	24
	Station transformers.	3	Reconstruction of 41station transformers in Beira, Chimoio and Qulimane	0.87
	Reconstruction of EDM commercial offices	4	Reconstruction of EDM commercial offices, houses and vending stations	4.1
	Subtotal			29.1
Long Term	Rehabilitation of MV underground cables	1	Rehabilitation and upgrade of the old and damaged MV underground cables in Beira	2.3
	30,000 LV energy meters	2	Supplying of 30 000 energy meters for Quelimane, Chimoio and Beira	2.5
	Supply of MV panels	3	Supply of 33kV AIS containerized switchgear with 6 panels each	1.5
	Subtotal			6.3
Total				97.9

Based on the above criteria, EDM's priority areas of rehabilitation would be; i) distribution lines serving areas with high population density, relatively large economic activities, social infrastructure and public services, ii) transmission lines and substations feeding Beira and Chimoio, as well as those operating in a radial basis (single village supply line), iii) rehabilitation of damaged hydroelectric plants. The estimated cost of short, medium and long-term recovery is $97.9 million.

Recommendations for DRR and Building Resilience in Sector

Modified technical specification can strengthen the resilience of the grid infrastructure. These include i) use of self-supporting transmission towers, ii) use of concrete distribution poles, which is less vulnerable to floods than wood poles, iii) strengthened pole foundations, including the use of better land near Beira roads; iv) use of shorter spans between poles; iii) raising the platform of new substations 1-2 meters above the ground, iv) additional flood protection to existing substations. Use of stay wire is not suitable as debris from the flood can be trapped in the stay wires and add addition force to damage the poles. These need to be included in the technical specification which contractors will comply.

Implementation Arrangements

MIREME is coordinating sector entities for electricity service restoration and rehabilitation. EDM is leading the implementation of the restoration efforts for grid-connected population. FUNAE is leading the restoration of services in off-grid areas served by mini-hydro plants as well as standalone PV systems.

Existing contracts by sector entities can be broadened to include restorative work into the scope. EDM is already working with 4 local contractors to expedite the rehabilitation. Provision of construction tools will also help EDM staff work at multiple sites in parallel. Additional contractors can be engaged once resources become available.

TRANSPORT

Sector Context

Road transport: The N6 Beira-Machipanda road, part of the Beira Corridor, is the principal import-export route linking the port of Beira to the landlocked countries of Zimbabwe, Malawi, Zambia and the Democratic Republic of Congo. The Corridor serves as a key supply route for 60 million people, and the N6 road has recently been upgraded. The principal road links in the region affected by Cyclone Idai are the N1 and N7 north-south routes, and the N6 and N11 roads which run east west. The total length of the road network in the region is 12,243 km, 3,274 km of which is paved. The unpaved roads that provide access to rural communities are particularly vulnerable to damage by heavy rainfall and flooding and have suffered from a lack of maintenance in recent years.

Rail transport: The Beira-Machipanda (Zimbabwe) line (318 km), the Beira-Moatize line (575 km) and the Nacala-Moatize line (913 km) pass through the region affected by the cyclone. The Sena and Nacala lines carry substantial volumes of coal from Moatize to coal terminals in the ports of Beira and Nacala.

Road transport services: The port of Beira and the associated road and rail transport corridors are major sources of employment. It is estimated that the road transport sector supports an 30,000 people in Beira. Some 200 companies are registered to provide road transport services: they range from large companies employing over 500 staff to small family-run businesses. These companies collaborate to satisfy demand, providing a fleet of between 4,000 and 5,000 trucks.

Air transport: 8,196 internal and international flights carrying a total of 208, 632 passengers passed through Beira International Airport in 2018, generating an income of over 14 million USD. Four airlines operate scheduled flights from Beira, and three air charter companies are based at the airport. Mozambique's national flight information center, which controls all movements in the country's airspace, is based at the airport. The airport is equipped with lighting and navigation systems that allow 24hour operation.

Port: The port of Beira handled a total of 9.5 million tonnes of cargo in 2016. The port has terminals for containers, general freight, grain, coal, bulk liquids and petroleum fuels.

Telecommunications: Three mobile telecommunications operators, Movitel, Tmcel and Vodacom serve the provinces of Manica, Sofala, Tete and Zambezia. National market shares in terms of subscribers are reported as 27%, 30% and 42% respectively.

The Effects on Transport

The damages caused by the cyclone and heavy rains in the Central Region, impacted roadways the most: about 1,962 km of roads, 90 culverts, 15 bridges and 24 drifts were damaged, resulting in the impassability of 4,613km. This situation resulted in reduction of the transit ability in the four provinces by about 24% for the network of the central region and 7% for the national classified network. Although provisional access has been restored in many cases, the repairs are temporary, and roads will become impassable in the event of future rainfall.

Table 51: Damage to transport by province

Province	Culverts damaged (No)	Bridges damaged (No)	Drifts damaged (No)	Total Exention affected (Km)	Total Exention damaged (Km)	% of extendion damaged related to the national network
Sofala	55	1	0	1,450	1,011	3.00
Manica	8	5	4	667	69	0.23
Tete	10	4	8	1,003	89	0.30
Zambezia	17	5	12	1,493	793	3.00
Total	90	15	24	4,613	1,962	6.53

In addition to the National Roads, massive damage was inflicted on the municipal and district roads, which were in bad shape to begin with due to prior poor maintenance and upkeep.

The Beira International airport witnessed damages to its Cargo and Passenger terminal buildings. Damages from cyclone winds include runway lighting, navigation equipment, hangars, and communication/ IT equipment. The airport witnessed three days of interrupted services, impacting various airlines and charter operations. Several light aircraft were badly damaged.

The Port of Beira suffered moderate damages and losses. The coal terminal was the most impacted impacting the throughput of the terminal significantly, followed by the Fuels terminal. The quays (platform) 2, 5,9 and 10 suffered damage. The lighting towers and the bonded warehouse suffered moderate damage as well. Meteorological and port management facilities were damaged, along with dredgers. While the Port operations saw some interruption and damages, the impact was moderate.

The railways infrastructure in the impact area suffered losses resulting in the closure of the Sena and Machipanda lines. Significant damages were reported to the warehouses, equipment, company facilities and communications system of the railways operator. The closure of rail lines, impacted the freight by diverting to the already damaged road system, further impacting the roadways. The telecommunications sector was seriously impacted by the cyclone with high winds uprooting many cell towers, resulting into a cell outage for up to 10 days for the customers in the cyclone impact area. The major damage was seen on telecommunication towers, long haul microwave, Optic fiber etc.

The trucking and logistics companies were directly impacted, and due to interruption in services, the trade with landlocked countries was also majorly affected. On the municipal level, the storm paralyzed the public transportation system (Mini bus, Chapa, Mylove, etc.) impacting the access, mobility and livelihood in the urban areas.

Table 52: Damage and Loss for Sector (in local currency and USD)

Transport Sector		Damage		Loss	
Loss and Needs		MZN		MZN	
Categories	Sub-Categories	Public	Private	Public	Private
Road Network	National Roads	19,843,603,571	-	31,961,000	6,612,800,000
	Municipal Roads	1,461,177,753	-	-	-
	District Roads	1,066,372,433	-	-	-
Railways		650,185,143	-	-	-
Trucking/ Logistics		-	1,180,442,667	-	543,710,000
Public Transport			702,181,818		1,663,990,442
Port	Beira	775,296,000	-	-	-
Aviation	Airport	324,772,913	106,676,667	7,372,473	-
	Airlines			857,392	2,572,175
Telecommunications	Mobile Operators	949,690,358	1,212,864,066	297,301,864	616,901,914
Totals- Metical		25,071,098,171	3,202,165,218	337,492,729	9,439,974,531
Totals - USD		391,735,908.93	50,033,832	5,273,324	147,499,602

Crosscutting issues (Gender, Environment, Governance, Disaster Risk Reduction)

In the post disaster situations, risk of Gender based violence is heightened due to destitution and depravation. The civil works implementation agencies would have to be very vigilant in enforcing contractor code of conduct. There should be a concerted effort to make sure that environmental commitments are not sacrificed to speed-up civil works. To ensure disaster risk reduction in the future, principles of resilient designs should be imbedded in the bidding documents to ensure that the rebuilt infrastructure will be “Built Back Better”. This includes coastal erosion protection works.

Recovery Needs

The calculated recovery needs in the table below has largely been calculated on the Resilient “Build Back Better” strategy, if there was reliable data available.

The following are the four main priorities for recovery:

Priority 1: Emergency repairs to ensure immediate health and safety of the cyclone victims.

Priority 2:

- Ensuring connectivity for critical transport and telecommunication links (free cell use)
- Providing temporary solutions quickly: Detours, Bailey Bridges, etc.

Priority 3: Rebuilding resilient infrastructure in the most affected region/ affecting most people

Priority 4: Rebuilding resilient infrastructure in rest of the affected regions.

A prioritization tool is being refined in roads sector, where factors such as: Average daily traffic, level of damage, increase in distances due to detours, number of affected people, risk from climatic events, hydrology and topology, relevance in trade and logistics, environmental and social significance, etc. could be factors to rank and prioritize reconstruction. The same principles can be applied to other sub-sectors.

Table 53: Recovery Needs

Transport Sector	Needs		Needs	
Loss and Needs	MZN		USD	
Categories	Public	Private	Public	Private
Road Network	27,781,045,000	0	434,078,828	0
	1,899,531,079	0	29,680,173	0
	1,279,646,920	0	19,994,483	0
Railways	975,277,714	0	15,238,714	0
Trucking/ Logistics	0	1,227,660,374	0	19,182,193
Public Transport	0	702,181,818	0	10,971,591
Port	966,284,800	0	15,098,200	0
Aviation	533,333,333	106,666,667	8,333,333	1,666,667
	0	0	0	0
Telecommunications	1,234,597,466	1,576,723,285	19,290,585	24,636,301
Totals- Metical	**34,669,716,312**	**3,613,232,144**	**541,714,317**	**56,456,752**
Totals - USD	**541,714,317**	**56,456,752**	**541,714,317**	**56,456,752**

Recommendations for DRR and Building Resilience in Sector

Mozambique's geography and long coastline, coupled with changing land use patterns and the impacts of climate change, mean that it regularly affected by extreme weather events, principally flooding. The road and rail networks have suffered extensive damage over the last 20 years, with substantial sums being diverted from network improvement to the repair of flood-related damage.

In the road sector, emergency repairs are a major constraint on improved service provision. Growing awareness of strategies for coping with disasters has led to the increased use of resilient designs that will reduce the impact of severe weather on the transport network. The following actions will assist in improving the resilience of the road network to resist future events:

- Vulnerability and resilience assessments to be carried out for critical roads, with resilient designs being implemented on vulnerable sections of road.

- Year-round road maintenance contracts to be in place, in particular during the rainy season, to allow minimal access to be restored rapidly and more permanent repairs implemented without delay.
- Embankments designed to resist overtopping.

Table 54: Short, Medium & Long-term Recovery Initiatives and Costs (Metical & USD)

	Item	Priority (1 to 5)	Description	Cost	
				Local Currency	USD
Short term (0-6 months)	National Roads	1	Emergency Repairs	192 million	3,000,000
	Municipal Roads	2	Emergency Repairs	64 million	1,000,000
	Airport	3	Emergency Repairs	96 million	1,500,000
	Railways	4	Emergency Repairs	64 million	1,000,000
	Telecommunications	5	Restore operations	96 million	1,500,000
Medium Term (6m- 1 year)	National Roads	1	Restore connectivity	2.48 Billion	32,000,000
	District Roads	2	Restore connectivity	320 million	5,000,000
	Port of Beira	3	Full operations	320 million	5,000,000
	Beira Airport	4	Restore major functions	864 million	13,500,000
	Telecommunications	5	Full rebuild and operations	1.1 Billion	17,500,000
Long Term (1- 6 years)	Beira Airport	1	Fully rebuilt, including building	640 million	10,000,000
	National Roads	2	Rebuild the damaged system	25.2 Billion	399,000,000
	Railways	3	Fully restored	908 million	14,200,000
	Municipal Roads	4	Full Restoration	1.83 Billion	28,680,000
	District Roads	5	Rebuild the damaged system	960 million	15,000,000

Implementation Arrangements

The implementation arrangements in the road sector would be via the national road agency ANE, who would also coordinate with Municipal and district road administrations. The implementation arrangements in other sectors are yet to be determined.

CROSS-CUTTING ISSUES

GOVERNANCE

Sector Context

Cyclone IDAI struck Mozambique at a time when key events and processes were expected to unfold which are vital to the country's stability, in particular the general elections to be held in October, the new decentralization package of agreements, a peace process between the Government and Renamo, and the process of Demobilization, Disarmament and Reintegration (DDR). The national scope of these processes, as well as the time limits for achieving them, make them especially sensitive. Moreover, these are perhaps the most important steps for the consolidation of Mozambican peace and democracy.

The general elections in October will elect a new President, members of Parliament and for the first time, the governors of 10 provinces. Of the $ 97 million budgeted for the 2019 elections, the government has about 40 percent, posing a risk for its implementation in a safe and uniform manner in all provinces. These elections are also intrinsically linked to the other two processes: the new decentralization pact and DDR. This is due to the fact that the peace negotiations between the representatives of the Government and RENAMO anticipate the approval of the decentralization package and the finalization of the DDR before the October elections. Therefore, recovery of the governance sector must take into account the political and economic ramifications resulting from any delays that may occur with these processes.

Before the cyclone IDAI, the Electoral Bodies had already formulated all the organizational logistics of the process taking into account the reality of the country at all levels. The electoral calendar had already been approved and disseminated. Polling places had already been identified, as well as the resources required for their adequacy, such as physical space and equipment acquisition.

The justice sector worked regularly before the cyclone in its functions in citizen registration services, legal representation and assistance, and correctional services. However, the sector was facing challenges such as insufficient presence of justice institutions, and inadequate infrastructure, limited number of judicial and public magistrates, overcrowded jails and poor access of citizens to legal and judicial services. Its performance for the year 2018 indicated that 86.80% of criminal cases had been tried, 86.80% clarified, 39.36% of the population was a carrier of Biometric Identity Card and only 29% of children had benefited from the birth registration (Ministry of Economy and Finance, 2019).

The Police and public function and local administration also performed their functions regularly prior to cyclone Idai. The usual challenges to its operation did not differ much from that of other institutions of Governance.

The Effects on Governance

Cyclone IDAI damaged or destroyed many government offices, their infrastructure, equipment and records. This has had a direct impact on the government’s provision of services in affected areas. The total damage in the four affected provinces, stand at 760,904,545 MZN, corresponding to USD 11,889,133.

Elections, Peace Dialogue and Decentralization

The office of the electoral administration body STAE in the affected areas was severely damaged. Despite efforts by STAE to try to open 7,700 census counts in the country and involve more than 5,000 brigades, the voter registration process in cyclone-affected areas has been delayed due to logistical problems. STAE has sought to address these challenges, especially in Sofala.

Due to the impact of Cyclone Idai, the Government approved the 15-day postponement of the start of the voter registration, keeping the date of the elections unchanged. Electoral registration is one of the first and most important activities on the electoral calendar and can play a very important role in the legitimacy of a country's political and democratic stability.

Election officials believe that despite the effects of the cyclone, voter registration will proceed satisfactorily and that the next electoral phases of the electoral calendar will not be affected. Despite this positive view of STAE, there are opposition political parties that have been calling for a postponement or extension of the voter registration period and suggesting the possibility of postponing the voting date, based on the argument that areas affected by the cyclone may not be prepared.

Justice and public safety

In the justice sector, all services were affected, with damage to infrastructures, equipment, furniture, archives, and various crops and animals from penitentiary centers. The province of Sofala was the most affected followed by Manica. Most of the impact was on the Penitentiary and the Registries and Notaries.

Some offices have had to transfer legal documentation to other apparently safer areas (but which are now also at serious risk due to the threat of further damage to this new infrastructure). With reference to the loss of documentation by the affected population, the JCRM is organizing Free Birth registration campaigns as a priority intervention. With respect to the prison population, the sector has transferred inmates from penitentiaries from heavily affected areas to safer places. With regard to public order and security, there has been a considerable increase in crime, assaults, as well as episodes of violations.

An estimate was made of the total losses caused by IDAI to this sector, related to the identity documents and other legal documents of the families that lost them, since their replacement is indispensable in order to ensure their participation in the electoral process, as well as in the resettlement phase. The housing sector estimated losses at 304,051,548.16 MTZ, corresponding to USD $ 4,705,805. To avoid duplication in the PDNA exercise, this additional cost is recorded in this sector report.

State Administration and Public Administration

According to The Ministry of State Administration and Public Function (MAEFP), due to the effect of the cyclone, much of its infrastructure is not yet fully operational due to the destruction of buildings where technical and administrative services operate. This is affecting the regular functioning of public services and local government departments in the affected provinces, districts, and local administrative posts.

Table 55: summary of damage, loss and recovery needs

Province	Damage (MZN)	Loss (MZN)	Needs (MZ)	Damage US$	Loss (US$)	Needs US$
Manica	21,191,251	0	24,369,938	331,133	0	380,780.00
Sofala	647,791,413	0	744,960.125	10,121,740	0	11,640,001
Tete	82,120,000	0	94,438,000	1,283,1250	0	1,475,593.75
Zambézia	9,801,881	0	11,272,163	153,154	0	176,127
Reposição de documentos legais	0	304,051,548	304,051,548	0	4,705,805	4,705,805
TOTAL	760,904,545	304,051,548	1,179,091,775	11,889,153	4,705,805	18,378,309

Recovery Needs

Principles and guidelines for recovery in the governance sector

Support for governance functions in the post-disaster period is key to reconstruction, economic recovery, peacekeeping and strengthening democracy. It is also an opportunity to build back better in the governance sector, that is, to use reconstruction not only to improve relations between government and civil society, but also to strengthen the capacity of the state to protect its citizens, especially those most vulnerable. To this end, the principles and guidelines below will guide the reconstruction in the area of governance:

- The political processes underway in 2019 and which are of central importance for the strengthening of Mozambican democracy must be prioritized. Financial, technical, and infrastructure efforts can be made available for elections, decentralization and peace dialogues;
- Reconstruction should focus on peace and security for the entire population, especially those sectors most vulnerable to sexual exploitation and exclusion. All recovery actions will be accompanied by an integrated gender and social cohesion plan. It is envisaged that there will be expanded patrolling in collaboration with the population to deal with issues of gender violence and to control human trafficking and child labor;
- Strengthening the capacity to coordinate, participate and distribute equal and equitable resources and opportunities for different sectors of the population;
- Services for the most vulnerable populations and their access to the courts, justice and rights, as well as those relating to the provision of public safety and rescue should be prioritized;
- Recovery will be done in a participatory manner, covering the private sector, civil society and government, and will include mechanisms for listening, dialogue and conflict mediation together with a communication system for the population;
- Coordination and training of technical staff at national, provincial and local levels will be prioritized as an objective of developing national capacities to respond to disasters.

Table 56: Proposed recovery (short, medium, long-term)

Short term (12 months)	Medium term (12 - 24 months)	Long term (24 - 36 months)
Coordination		
• Strengthen the coordination and technical support power of the Reconstruction Office; • Promote participatory conflict analysis; • Recruitment and training of personnel who will work at the decentralized level for the reconstruction office; • Baseline and reconstruction plans for municipalities and districts; • Creation of accountability mechanisms; • Create a communication plan for local populations; • Creation and capacity building of a unit for the coordination of the relocation and resettlement;	• Establish a permanent secretariat and contingency fund plan for all areas of governance; • Provide technical assistance to districts, municipalities and provinces in matters of planning and financial management. • Provide technical assistance to civil society to monitor and dialogue with government; • Provide training and implementation of mediation and complaint resolution structures	• Integration of the planning and financing code;
Training		
• Initial baseline for additional human resource needs; • Immediate hiring of the most necessary functions in the first months of the emergency; • Training of personnel in the areas of gender and sensitivity to peace; • Training and mobilization of civil society for reconstruction; • Hiring and training of public safety maintenance forces;	• Assessment of planning and technical support needs and review of the human resources plan; • Preparation for the resilience phase; • Participatory evaluation of civil society and gender mainstreaming and peace issues. • Assessment of public safety conditions and planning for the coming years.	Implementation of the long-term plan
Technical Secretariat of the Electoral Administration		
• Campaign to mobilize funds for the elections; • Immediate purchase of support material lost in floods; • Emergency restructuring of the census stations; • Plan for mitigation and risk of electoral violence; • Immediate hiring of support staff for the elections		
Ministries		
• Make the rebuilding baseline; • Make temporary structures for government buildings, including penitentiaries; • To list the list of lost and damaged equipment and start purchasing the most urgent; • Establish a participatory monitoring methodology for reconstruction, • Initiate the restructuring of archives and records in the provinces; • Train (and send) technical personnel to support the reconstruction of the buildings; • Train decentralized government officials to deal with reconstruction; • Hire the additional cadres for the reconstruction, • Repair partially damaged buildings;	• Repairing completely damaged buildings and rebuilding lost buildings; • Purchase necessary equipment and equipment for governance services; • Conduct a social and participatory audit of reconstruction programs; • Restructure the judicial, court and police file system with national and provincial databases;	• Explore funding mechanisms for disaster mitigation activities; • Promote risk transfer mechanisms (insurance) through government; • Give priority to community financial resilience

Implementation arrangements

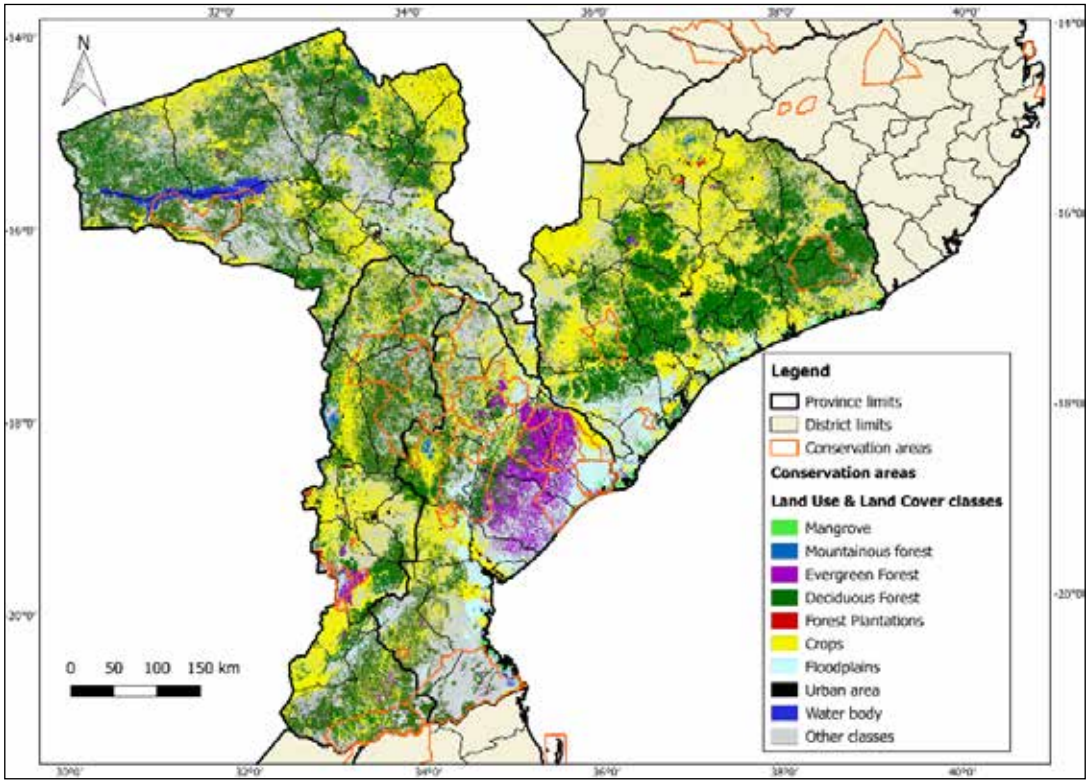
Implementation of recovery actions will be under the responsibility of the Secretariat of the Steering Committee whose coordination will be done by the Reconstruction Office with the technical support of the United Nations. In turn, the Steering Committee will be composed of representatives from the ministries referred to here, civil society, the private sector and development partners. The Committee will meet every three months to evaluate progress, discuss risks and strategies, approve the stages of the process and follow the process of participatory monitoring of the project. Below the Steering Committee there will be a Planning, Implementation, and Monitoring Unit - which will be responsible for the coordination, implementation, procurement and contracting, and training component. The architecture is subject to the structure that will be established for the whole reconstruction program. The implementation arrangements proposed here should be agreed and coordinated with the implementation of other sectors.

ENVIRONMENT

Sector Context

The area hit by cyclone Idai is of significantly high ecological and biodiversity importance given its varied and threatened ecosystems and habitats. These include: the Zambezi River Delta and the system of wetlands and floodplains which buffer 67% of total river discharge in Mozambique; Miombo woodlands and forests, which are part of the largest dryland forest ecosystem in the world; a majority of Mozambique's mangroves, part of one of largest mangrove forests in eastern Africa and that provide essential ecosystem services and contains large carbon stocks, and fish spawning areas; Afromontane forests of the Chimanimani mountain range, bordering Zimbabwe; Vegetated coastal areas, which act as important defense against disaster and habitat of biodiversity.

Fig 24: Land Cover in Affected Area, including Protected Areas:



Key biodiversity is protected under **six Protected Areas (Pas)**; covering 2,777,900 ha, almost 12% of the area of all Pas in Mozambique. Marromeu National Park, a RAMSAR site, which hosts the largest buffalo herd in Africa and populations of other wildlife as well as a vibrant fishing activity and the surrounding private-managed hunting blocks; Chimanimani National Reserve, which is recognized as key biodiversity area in the Eastern Afromontane Hotspot & part of a Transfrontier Conservation Area with Zimbabwe with significant rich cultural heritage; Magoe National Park, around Cahora Bassa reservoir that serves as habitat for birds, fish, and endangered species, and Gorongosa National Park which is a prime example of combined plant, birds endemism and wildlife, and an internationally acclaimed success story of restoration. The PAs not only protect biodiversity, but also function as socio-economic engines of growth and development in the area, providing income-generating opportunism to local communities through sustainable natural resource management and tourism. Gorongosa National Park is for example the largest single employer in the Sofala province.

Renewable natural resources (forests, fisheries, wildlife) are in fact key to the livelihood of local communities, as well as to ecosystem services at larger scales (national, regional and global). The goods from forests (such as timber, poles, non-timber forest products, and fuel) help households to diversify their livelihood portfolio. Income from forest sources account for about 28 percent of total household income for forest-dependent households, and is even more important in periods of stress, such as the case with Cyclone Idai. The Sofala and Manica provinces also have 177 private-managed forest concessions and simple licenses, of which many have infrastructure to process the timber, such as saw mills – an important contribution to the forest industry.

The coastal households in affected are highly dependent on coastal and marine resources and ecosystems, such as mangroves. Sofala accounts for 22% of Mozambique's mangroves and Zambezia for 38%. Households derive both direct income from mangrove products (timber, building poles and fuelwood) and benefit from indirect mangrove ecosystem services (spawning, breeding grounds for fish & erosion protection). Around Beira where coastal damage was the worst, two important mangrove systems were impacted: the Chiveve River, (known as Beira's 'lung'), which drains waste and rainwater through several urban and suburban neighborhoods on its way to the sea and the Nhangau mangroves, managed and largely protected by community organizations.

The settlement patterns and population density in the rural spaces of the affected area vary, but many populations are concentrated around flood-prone areas, such as in the river Buzi, or live in disperse settlements, isolated places without access to basic services and with limited accessibility (tertiary roads). This increases their vulnerability to natural disasters, and places stress on natural resources such as forests and wildlife given rural people's reliance on those for part of their livelihood.

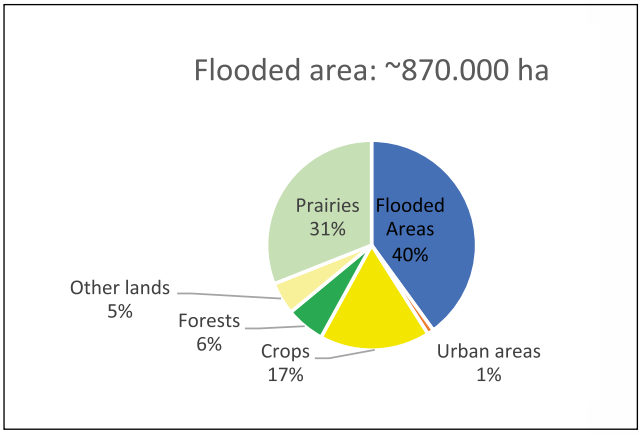
Coastal protection infrastructure. The affected coastal area is one of the most climate vulnerable areas in Africa – Beira is in fact the 20th most climate vulnerable city in the world. Poorly planned settlements, inadequate housing, coupled with worsening effects of climate change had left more than 300,000 residents vulnerable to climate-related disasters before Cyclone Idai**.** In recent years there have been several initiatives to upgrade Beira's coastal protection infrastructure as well as upgrading mangrove and wetland areas to reduce risks.

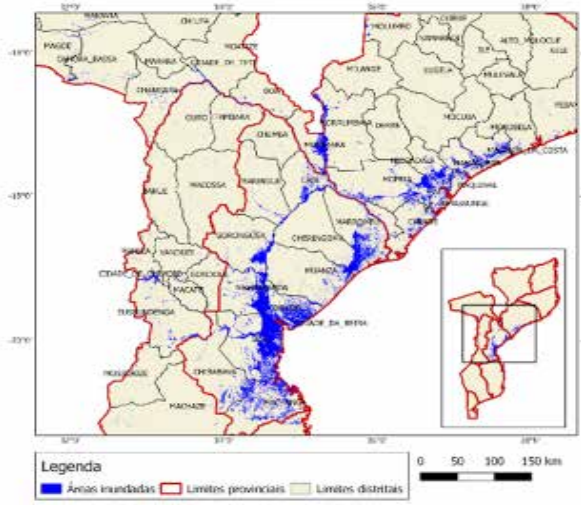
Waste management in Beira is a growing challenge for the city**.** Although the municipality has in recent years increased capacity for waste collection in the city center, the situation in informal settlement areas remains precarious. The system lacks sufficient regulation, as well as incentives and knowledge of recycling opportunities and technologies. A comprehensive solid waste management plan has been elaborated but now needs to be revised to incorporate needs as well as additional disaster related guidelines.

The Effects on the Environment

Cyclone Idai caused severe impact on the environment, given the large extent of the damage on coastal protection infrastructure, protected areas, forests, mangroves, wetlands, erosion and debris and disruption to waste management infrastructure in Beira.

Fig. 25: Flood Affected Area by land-use





The damage caused by the cyclone on natural resources is summarized by sub-sector:

Protected Areas (PAs): Roads, bridges, drifts, tourism and management infrastructures were severely impacted, particularly in the Chimanimani Natural Reserve in Manica, where the infrastructure has been recently built and was in good shape, eluding to the severity of the cyclone. The PAs are important for Mozambique's tourism economy and caused losses in tourism and income-generating opportunities for communities.

Coastal damages: The cyclone caused serious impact to the coastal environment of the Sofala and Zambezia provinces, and to some extent the northern parts of Inhambane. The impact included destruction of coastal protection infrastructures such as spurs, retaining walls, protective walls, falling trees, collapsed sidewalks among other damages, and degradation of the Beira's ecosystems, dunes and mangroves.

Forests and Mangroves in the area suffered a range of disruption such as defoliation and breakage and mangrove sedimentation. A rapid mangrove damage assessment estimated that around 2500 ha of mangroves in the area around Beira was impacted. The extent of detailed damages and losses are however difficult estimate due to continued inaccessibility, as well as the inherently difficulty in an immediate calculation of disruption of ecosystems services, as disasters of this scale causes delayed effect, such as die-back of mangroves 9 months-1 year after impact. Losses should be assessed as part of the Recovery Strategy and calculated both in terms of lost household income derived from forest/mangroves, as well as the value of the many ecosystem services they provide.

Waste and Debris: The cyclone had a significant impact on the already fragile solid waste management system and infrastructures of Beira. The debris in the city center was primarily cleaned up by the Municipality, but suburbs are still in need of debris collection, where the situation is aggravated due to population density. The cyclone also caused disrupted access to the main landfill due to flooding/cut off in roads, leaving waste dumpsites in the city overloaded with debris generated by the Cyclone (trunks, leaves, other wastes). Most of the municipality's waste management equipment was also damaged (trucks, bulldozers, mechanical shovels etc.), further aggravating cleaning efforts and trash collection. The Cyclone left a high exposure

of hazardous waste, primarily asbestos (from lusalite sheets), as well as medical waste from damaged hospitals, and waste from Beira's industrial park, including biomedical, engineering and other waste. Hazardous waste requires specific and careful treatment for proper route and transport to the final deposit. The limited control and awareness about its dangers and no procedures for handling/proper disposal it, poses a significant risk for safety and health for the population in semi-urban and urban areas.

Changes in Governance and Decision-Making Processes, Increased Risks and Vulnerabilities

Rural communities in the affected area are highly dependent on natural resources and healthy eco-systems (coastal, marine, forests, wetlands) for their livelihoods. Cyclone Idai's destruction on natural resources such as soils, forests, mangroves, marine resources and habitats and biodiversity has resulted in loss of livelihoods and income for poor rural households and present a direct threat to food security and social needs. The lack of fuel, food and resources presents both an immediate danger to rural communities and may in turn lead to further depletion of resources to fulfill these needs in the short to medium term. Consultations with coastal communities have indeed already indicated increased pressure on mangroves due to the lack of other construction material for the reconstruction of their homes. Consultations with community members also indicated a loss of communal medical gardens with the use of traditional plans, which are widely used.

Governance and Decision making over natural resources has also been impacted as many resources are managed through *Community-Based Natural Resource Management* community organizations (such as Natural Resource Management Committees, CGRNs and Community Fishing councils, CCPs), whose functioning has been disrupted by the Cyclone. Consultations with the CGRN managing the Nhangau mangroves in Beira, considered successful example of community-based mangrove management, show for example that as primary needs are not met, such as housing and food availability, management of natural resources becomes less of a priority and is exploited in an unsustainable manner for immediate fuel and construction material. More details on the human impacts from environmental damages are presented in Table 2.

Table 57: Impacts of the damage on the environment on people's livelihoods

Environmental damage	Impact on Livelihoods
Flooding of crop areas	Reduced food production, with risks to food security
Loss of Forests	Impact on availability of timber, fuel, and medicine for local communities; Reduced environmental goods and services to local communities.
Damage and disruption to Mangrove Ecosystems	Impact on immediate and long-term availability of timber, fuel, and medicine. Risk for mangrove die-back → long-term impacts. Loss of important nursery grounds and breeding sites for birds, mammals, fish, crustaceans, shellfish, and reptiles → important to livelihood activities of communities Disruption of sites for accumulation of sediment, nutrients, and contaminants, which will impact availability of fish
Loss of terrestrial habitat	Loss of important sites for birds and other species that are important for communities' livelihoods in terms of income or indirect ecosystem goods and services
Uncontrolled waste management	Health risks to local populations including the spread of diseases and infections
Asbestos exposure	Health risks posed to population from inhaling

As shown in Table 58, the total estimated damage is US$ $79,806,415 and the losses US$3,359,580. Recovery in the medium term will require appropriate restoration measures, and adequate financial and technical resources. On the positive side, Mozambique has been implementing many of the proposed ecosystem-based adaptation measures suggested, which could be scaled up.

Table 58: Summary of Damage and Loss (in local currency and USD)

	Damage USD		Loss USD	
	Public	Private	Public	Private
Forest / Mangroves / Wetlands				
Damage to forest cover	Could not be calculated			
Damage to mangrove on coastal line	Could not be calculated			
Damage forest saw mills and milling infrastructure		1,300,000		
Losses in forest logging business				
Livelihood losses (access to non-timber forest products)				
Erosion: Losses in other sectors agriculture (irrigation infra), energy (hydropower, such as Chicamba)				
SUBTOTAL		1,300,000		
Protected Areas[5]				
Chimanimani National Reserve				
Drift of Mussapa Pequeno destroyed	700,000			
Drift sobre o Rio Mussapa Grande	800,000			
Drift para Chikukwa	100,000			
Ranger's Tentet Camp Destroyed	10,000			
2 tourist tents and kitchen destroyed	4,000			
Generator and water pumps destroyed	15,000			
Solar panels at Ndzou Camp		6,000		
333 beehives destroyed in Sussundenga		1,000		
Foregone revenues to Chimanimani reserve accommodation			1,000	
Gorongosa National Park				

27 Km of management road destroyed	90,000			
Destruicao de 5 pontes 5.8x9 metros	60,000			
Loss of 2 Land Cruizers	60,000			
Loss of Excavator	80,000			
Infrastructure damage to Gorongosa Montebelo hotel		600,000		
Foregone revenues to Gorongosa Montebelo hotel				270,000
Marromeu Reserve and Hunting Blocks				
Lost wildlife (warthogs)	1,500			
Park management road destroyed	100,000			
Foregone revenues to Coutadas				600,000
Domba Wera Safari game Farm (Muanza district) housing		20,000		
Magoe National Park & Crocodile Farm				
damage on 1 house, 1 restaurant and 4 chalets	12,000			
20 small bridges destroyed	56,000			
10Km of road destroyed	35,000			
200 meters of fence wall destroyed	4,000			
2 camping sites with electricity destroyed	4,000			
Land Cruizer and camping equipment damaged	12,000			
Crocodile Tanks and equip of Cahora Bassa Safaris damaged		200,000		400,000

SUBTOTAL	2,143,500	827,000	1,000	1,270,000
Waste Management				
Damaged landfill	112,258.00			
Damaged garbage trucks	235,887.00			
Damaged waste management & collection material	58,035.00			
Damaged containers and maintenance equipment	129,735.00			
Acquisition of special debris management equipments			12,176.00	
Overloaded and failed equipment during duty cycle			11,516.00	
Debris removal in the city center			1,750,645.00	

Debris clean-up in suburbs			10,710.00	
Management of Asbestos exposure			TBD depending volume	
Acquisition of additional crushers for green waste processing			45,726.00	
Closure and repairs of emergency deposition sites (3 locations)			90,000.00	
Increased maintenance costs for borrowed material from private sector to Municipality during emergency clean-up			19,425.00	
SUBTOTAL	535,915.00		2,088,580.00	
Coastal Protection				
Damage/Partial collapse of Beira coastal protection wall				
Sand erosion from wind and sea waves in Beira into the interior of the Bay, damaging the structures of protection				
Settlements in the Beira's ring road				
Destruction of Beira's coast pillars, caused by wearing, transport and hauling of rocks				
Collapse of components of the rainwater drainage systems close to the ring road (estrada marginal), hauling materials such as the foundations of the protection wall				
Additional damage to be further identified				
SUBTOTAL	75,000,000			
OVERALL TOTAL: $83,165,995	77,679,415	2,127,000	2,089,580	1,270,000

Recovery Needs

The recovery needs for Environment amount to US $124,205,430. The prioritization of needs is based on inputs/interventions needed (for short, medium and long term), with consideration of costs, expected outputs and intended outcome. The proposed Recovery Strategy focuses on recovering back to baseline as well as Building Back Better (BBB) with the use of green and resilient infrastructure for future DRR and should revolve around 3 axes:

Rehabilitation of natural resources and productive forests activities
There is an immediate need to replace damaged non-functional saw mills located in forest concessions as well as managed burning of biomass in fire-prone areas to avoid future fires. In the medium term there is also a need for comprehensive restoration of degraded areas,

reforestation in cities and rural areas, particularly riparian forests, which reduce risks of future shocks as well as provide vital income and ecosystems for communities in affected area. There are also identified parts in Beira where degraded mangroves can be restored to improve DRR. The promotion of climate smart agriculture should also be promoted as a tool to ensure sustainable use of soil and resources, and which also increases resilience to future shocks and disruptions. Forest and mangrove monitoring, protection and restoration are also needed at a more comprehensive scale, to ensure a reduced deforestation rate of these vital 'green infrastructure'. An initial assessment on mangrove impacts found that approximately 2500ha of the mangroves in the area around Beira were impacted by the Cyclone. The long-term impact of these damages will need to be assessed in detail in 9 months-1 year and require protection and restoration. The assessment also found probable evidence that some parts of the city that were protected by mangroves most likely suffered less damage, alluding to the role of mangroves in DRR. At a local level this entails strengthening community governance and ownership of land and natural resources which should be done through promotion of individual and communal land rights and community forest reserves/protected areas. With the impeding risk of future natural disasters, communities also need to be better linked to the private sector involved in woodlots, conservation agriculture for exploitation of NTFPs.

Rehabilitation of protected areas infrastructures.

Infrastructure rehabilitation in PAs is needed in the short term to ensure proper functioning and management of these key biodiversity areas and to allow the revitalization of their tourism potential, which is an important revenue stream to local communities as well as to the Government. The reconstruction should also be coupled with developing a marketing program to the tourism destination in the targeted areas (Gorongosa, Chimanimani, for instance). In terms of wildlife in the area, there is a need for proper counting and definition of affected species and preparation of a strategic plan of their recovery. Accelerating the promotion of community conservation areas is also a strategy to ensure protection of key and fragile ecosystems in the future.

Policy and institutions strengthening

There is a need to strengthen land use planning and enforcement at all levels, as well as provide continued capacity building at local level for the implementation of land use plans (Districts and Community). To strengthen natural disaster risk management, maps on natural disaster risks need to be updated with adequate scale (to allow local-level decisions to be made) for the whole country.

The Government of Mozambique is currently finalizing a National Territorial Development Plan (PNDT), which is the highest territorial occupation guiding document of the country, expected to be adopted by the end of 2019. The PNDT already emphasizes building resilience to natural disasters and safeguarding areas of ecological importance, captured in its Objective 6 – "preventing natural and anthropic risks and safeguarding ecosystems and biodiversity sustainability". The Recovery Strategy should include the already proposed actions under this Objective, including: i) reduce areas vulnerable to risks through stricter territorial occupation control and structural adaptation measures; ii) strengthen resilience in risk areas with high population density and economic activities; iii) strengthen zoning and monitoring instruments that deal with different types of risks; iv) strengthen natural and planted forest management and mainstream "ecological infrastructure" in the territorial development plans and guidelines.

Recommendations for DRR and Building Resilience in Sector

Healthy ecosystems can play an important role in disaster risk reduction and hence could be part of future strategies for DRR in the country. There is therefore an increasing importance of mainstreaming "ecological infrastructure" in the territorial development plans and guidelines as well as mainstreaming "ecosystem services" accounting to national accounts. In terms of settlement, the PNDT allows for the design strategies for the communities to live far from areas susceptible to climatic hazards and create alternative livelihoods to reduce dependence on natural resources or critical ecosystem services. DRR should also be included in local wildlife and fisheries management plans.

Table 59: Short, Medium & Long-term Recovery Initiatives and Costs

	Item	Priority (1 to 5)	Description	Need Costs	
				Local Currency	USD
Short term	Restore forest saw mills + milling infrastructure (roof and fences)	2	Replace damaged non-functional saw mills located in forest concessions and/or cities	83,200,000.00	1,300,000
	Early burning of biomass in fire-prone areas (with biomass build-up)	1	To eliminate biomass build up and risk of forest fires	270,000.00	4,500
	Promote restoration of degraded lands through reforestation & assisted forest regeneration	1	Promote restoration of 2,000 hectares of degraded land in priority areas (riparian forests, steep slopes, sensitive habitats), incl access to planting material, or fencing material to landholders + technical assistance	128,000,000.00	2,000,000
	Mangrove restoration and conservation	3	To be conducted in line with the national mangrove restoration plan, which guides technical aspects and priority sites	48,000,000.00	750,000
	Reconstruction of Protected areas infrastructure	1	Chimanimani, Gorongosa	233,536,000.00	3,649,000
	Asbestos removal	**1**	Hazardous substance removal	7,680,000.00	120,000
	Finalize and adopt PNDT / Territorial development plans, and influence government's five-year plan	2	Ensure adoption, adequate implementation of the PDNT	32,000,000.00	500,000
	Prepare the Provincial territorial plans for Manica and Sofala	3	Following from the PDNT, the Provincial plans will guide territorial occupation at a finer scale, including identification of vulnerable risk-pronte areas	192,000,000.00	3,000,000

Short term	Coastal Protection infrastructure reconstruction	1	This includes the following activities: Partial collapse of coastal protection wall in Beira; Sand erosion from wind and sea waves in Beira into the interior of the Bay, damaging the structures of protection; Settlements in the Beira's ring road; Destruction of Beira's coast pillars, caused by wearing, transport and hauling of rocks; Collapse of components of the rainwater drainage systems close to the ringroad (estrada marginal), hauling materials such as the foundations of the protection wall; Additional damage to be further identified	4,800,000,000.00	75,000,000
	Acquisition of waste collection and management equipment		This includes tractors, garbage trucks, compactors and other essential equipment.	89,102,528.00	1,392,227
	Rehabilitation of landfill		Improvements include fencing, construction of a guardhouse, a scale for weighing)	5,120,000.00	80,000
	Acquisition of heavy equipment for operation of the landfill		This includes a bulldozer and other equipment	17,032,256.00	266,129
	Elaboration of a contingency plan for waste produced by natural disaster			960,000.00	15,000
	Construction of a Composting Center (Pilot)			6,400,000.00	100,000
	Promote improved Solid Waste Management		This includes support to a range of activities including awareness campaigns, capacity building of municipal waste management staff, institutional strengthening, improvement of equipment and financial sustainability, promotion of recycling, etc.)	12,800,000.00	200,000
TOTAL				5,660,982,784.00	88,452,856.00

Medium-Term	Strengthen forest law enforcement to reduce deforestation	2	Includes supporting operations of AQUA and ANAC to monitor forest areas, and reduce illegality	25,600,000.00	400,000.00
	Disaster and risk management mainstreaming into land use planning	2	Demarcate vulnerable risk-prone areas (identified in the Provincial territorial plans and other lower level plans, such as the District Land Use Plans (PDUTs)).	200,000,000.00	3,333,333.33
	Implement a multi-stakeholder landscape management platform in provinces	3	Multi-stakeholder platforms to allow coordination across stakeholders at the provincial level over four years, including elements of DRR communication efforts	76,800,000.00	1,200,000.00
	Strengthen land rights in the area for communal land and individual DUATs	1	Issue DUATs to priority plots, and conduct community delimitation in vulnerable areas, incl. preparation of simplified risk management plans	96,000,000.00	1,500,000.00
	Acquisition of waste collection equipment	1	This includes two compactor trucks, 22 primary vans and 2 tipping trailers.	25,290,304.00	395,161.00
	Implementation of preparedness measures defined in the contingency plan for post-calamity waste management	1	This includes improvement of disposal infrastructures, acquisition of equipment as well as legislation	9,600,000.00	150,000.00
	Expansion of the Composting Center	1		9,600,000.00	150,000.00
	Launch preparatory studies for new landfill, transfer center and recycling and material recovery center, incl for biogas	1	This include conducting an environmental impact study, socio-economic analysis and a preliminary design of the Project	4,480,000.00	70,000.00
	Continued promotion of Solid Waste Management	1	This includes continued support to awareness campaigns, capacity building, institutional strengthening, improvement of equipment and financial sustainability, promotion of recycling, etc.)	19,200,000.00	300,000.00
	Conduct mangrove assessment to assess medium –term impact on mangroves (level of die-back etc.)	3	This should be conducted as a continuation of the rapid preliminary assessment done directly after the cyclone.	6,400,000.00	100,000
TOTAL				486,303,637.33	7,598,494.33

Long Term	Establish community-led protected areas	4	Community protected areas is a tool to reduce threats to natural resources by strengthening local rights to lands and promoting income-generating activities, such as tourism. Establish 2 community areas	64,000,000.00	1,000,000.00
	Strengthen community-based organizations (CBOs), including communication strategies and education programs focused on disaster risk management adapted to communities	3	CBOs include associations, natural resources management committee (CGRNs)	192,000,000.00	3,000,000.00
	Mainstream “ecological infrastructure” in the territorial development plans and guidelines	4	Ecological infrastructure can be a cost-efficient tool to reduce risks in certain areas	12,800,000.00	200,000.00
	Acquisition of waste collection equipment		This includes 2 container trucks, 1 truck compactor, 29 primary vans, 22 adapted vans and 368 containers	49,778,752.00	777,793.00
	Promote improved final disposal and re-use in accordance with national legislation		This includes improvements in landfill, transfer stations and material reuse and recycling center	320,000,000.00	5,000,000.00
	Continued promotion of Solid Waste Management		This includes continued support to awareness campaigns, capacity building, institutional strengthening, improvement of equipment and financial sustainability, promotion of recycling, etc.)	19,200,000.00	300,000.00
TOTAL				657,778,752.00	10,277,793.00
OVERALL TOTAL				7,949,147,562.67	124,205,430.67

Implementation Arrangements

The proposed activities should be coordinated by the Ministry of Environment, Land and Rural Development (MITADER) and implemented by local partners to be identified.

GENDER

Sector Context

The Mozambican population is 27.9 million of which, 13.35 million are men or 48% and 14.6 million are women or 52%. Half of the Mozambican population is under 15 years of age. Life expectancy remains low, 59 years for women and 54 years for men, despite an increase in the last 10 years of 4 or 5 years respectively. The affected provinces are populated by 470,203 households in Sofala, of which 13,65% are headed by women; 396,598 households in Manica, of which 16% are headed by women; 1,190,552 households in Zambézia of which 13.3% are headed by women and 615,843 households in Tete of which 13,48% are headed by women.

In the Human Development Index 2015, Mozambique ranks 181st place of 188 countries and 139th place of 159 countries in the Gender Inequality Index. Extreme poverty coupled with the HIV epidemic that disproportionately affects women and girls contribute to their lower socio-economic position. In addition, the lowest levels of education, higher risks of mother and child health, forced unions and early marriages, gender-based violence and social norms that inhibit the human rights of women and girls, perpetually reinforce their precarious state in Mozambican society. The northern and central provinces have less access to education, health services, water, sanitation and social protection. These provincial disparities are reinforced by the low budgetary allocation per-capita income. Thus, the most vulnerable families are even less likely to have access to basic social services.

The national poverty rate is in the range of about 41% to 45% of the population, corresponding to values between 10.5 and 11.3 million people living in absolute poverty. Large differences in terms of well being (and trends over time) remain between different socio-economic groups and different geographical areas. In general, there was an increase in inequality and spatial differences.

Due to the concentration of the Mozambican labor force in subsistence agriculture and the informal markets of low productivity, Mozambique is characterized by very high levels of individual and family vulnerability. The vast majority of women heads of households,76.3% are subsistence farmers, while among men the proportion is 55.9%. Furthermore, 63% of female-headed households versus 52% headed by men are poor (CMI 2010). Consequently, negative shocks have a greater impact on women.

In all the country, the literacy rate among women is lower than for men, especially in the northern region and in rural areas, where factors such as the low perception of the relevance of education and high rates of poverty discourage people. In urban areas the illiteracy rate of 23.1% the proportion of women is doubled at 31.4% than that men, at 14%. In rural areas, these rates are even higher, particularly among women at 71.6% unlike that of men at 39.1% against 56.6% illiteracy rate in rural areas. Other factors notwithstanding, the burden of the reproductive tasks assigned to women and the low participation of men in the same, reduces the time available for women and girls to devote themselves to their own education.

During the period 2014/2015 the overall employment rate was 67.2%, 68.2% among men and 66.4% among women. The unemployment among the working age population with some level of schooling was over 26%, being 23% for men and 32.4% for women, with unemployment rates higher for women. These rates drop to 16% when both sexes with no schooling, 15% male and 16% female. More men have secondary schooling and more men are economically active. With the exception of Inhambane province there are more unemployed women and a

large proportion of these are in Tete among others with GPI above 2. The distribution of the employed population according to occupation shows that the majority are small farmers 70.8%. This percentage is higher in the rural area, 86.2%, where the basis of survival is agriculture and in urban area 30.3%. The highest proportion is among women, 82.0% against 58.2% among men. Women are economically active in the sectors as small traders, farmers and domestic servants. Men in turn occupy spaces as non-university technician, administrative, university technician, senior managers, service personnel, agricultural laborers, non-agricultural workers, and independent artisans. The sectors that indicate the IPG in favor of women are agriculture, siliviculture and fisheries. In other branches of activities, the gender gap favors of men, particularly in the manufacturing industry, administrative services, energy, transport and communications, the extractive industry and mining and construction.

Between 2015 to 2017, there was an increase of 11% of Government employees and agents in Government positions, management, leadership and trust, of which 65% were men. The roles of Government are dominated by men, occupying 60%. The gender parity index (GPI) was more accentuated in the category of leaders and cadres of Directorate to district level being 0.42 in 2015 and 0.33 in 2017. In all provinces in the country, with the exception of Maputo City that has more balanced difference (105 women and 100 men), there are more male Government employees and agents than women.

One third of Mozambican women have been victims of violence at some time since age of 15 years. Of these, 12% reported forced sexual relations at some moment in her life, a percentage which does not serves to illustrate the magnitude of the problem because it is not uncommon for victims of sexual violence to not report this crime. As an illustration of women surveyed in 2011 IDS, 59% admitted they have never sought help or reported to anyone. In 2017, 25.589 were reported cases of domestic violence, 63.3% among adults and 36.7% were children. The majority of victims of violence were female. Among adults, for each male victim, 4 were female and among children, for every two girls, one was a boy. 80.5% of the cases of violence were against women and 65.3% against girls. Situated in the 10th place worldwide with a largest number of premature marriages, 12.9% young females had their first marital union by 15 years. 48% of women between 20-24 years confirmed entering into marital unions by 18 years of age. These marriages violate the fundamental rights of the girl and has, as consequence abandonment of education, early pregnancy, exposure to contraction of STI diseases due to lack of negotiating power in the marital union; a high risk of health and maternal mortality and a high risk of malnutrition for children of adolescent mothers.

The Effects on Gender by Subsector

Agriculture, Livestock and Food Security

Sofala, Manica, Tete and Zambezia provinces were affected by the cyclone Idai on 14 and 15 March 2019. The cyclone has accumulated damage and loss of life in economic and social infrastructures in 16 districts. These districts are predominant rural areas where agriculture, livestock, forestry and fisheries are the sources of employment and livelihoods. The single-parent households, referred to in the 2017 census, the majority are constituted by women, 16% in Sofala, 13.65% in Manica, 13.48% in Tete and 13.3% in Zambezia.

In the provinces affected by the cyclone, the agricultural sector has a great weight in the provincial economy, and employs approximately 120,000 inhabitants in the informal sector, and many others in subsistence agriculture. In Sofala, the loss is estimated at 240,000 hectares of farms, cattle and goats in the districts of Dondo, Buzi, Nhamatanda and Beira, referring to

92,000 families. In Manica, the agricultural sector represents 73.8% of jobs with approximately 200,000 workers. In Tete, also the districts are predominantly agrarian, and it is estimated that losses and damages in companies amounted to 265.600 Mts in terms of income for the families who work in this sector.[122] In Zambézia, the districts are predominantly agrarian and livestock. Besides the loss of cattle, goats and pigs, there were destroyed tanks, caracicida, treatment corridors, corals, wells and drinking troughs in Morrumbala and Molumbo in costs estimated at around US$ 419,000. An area estimated at around 200,4000 hectares of diverse cultures was flooded, of which 71.6 hectares were lost resulting in a number of households headed by women without their livelihoods.[123] The loss of cultures, which is also the livelihoods has resulted in increased food insecurity in women and their households, reducing the health status among women which inhibits their participation in economic activities. These conditions have direct effects on the increase of premature and forced marriages for young girls in households without food security. Resultantly is the increase of cases of violence and sexual abuse and increased vulnerability for girls towards unfair dismissals and unequal payment of salaries, absenteeism, increased probability of exchange of sex for employment and increased levels of poverty among families headed by women.

Fisheries

The fisheries sector was categorized (INE, Homens e Mulheres 2017) as one of the sectors within the agriculture but according to the Artisanal Fishing Census in 2012, 400,000 are fishermen, 4,040 are carpenters, 37,449 are traders, 633 are buyers, 18,030 are produce processors, 396 are mechanics and 7,195 are masons. It is estimated that some 356 boats were destroyed and will not be part of the production process of the campaign started on 1 April 2019. Fishing is one of the sources of employment and guaranteed livelihoods for female-headed households, according to the Women's Group for Sharing of Ideas (GMPIS) in Nhangau district, in the fisheries sector who engaged in the sale of shellfish products, are women. With the disaster, a proportion of women who has had as a livelihoods in fishery products, have become unemployed and dependent, without means of income, are vulnerable to the risk of contracting HIV and STI, as well as abuse and sexual violence, while girls are exposed to multiple risks of disease, early marriages.

Industry and Commerce

The commerce sector (formal and informal) employs 3,125 and 2,287 workers respectively. It is estimated that losses in terms of family income was 8,739,583.33 Mts. Beira, employing approximately 437,000 workers in various branches of activity. The damage is estimated at US$79,2 million for large companies, US$20,1 million for medium-sized enterprises and US$5,9 million for small businesses[124]. In this province the region with the largest industrial concentration affected by the cyclone is Tete and this is the sector that absorbs more labor in the province and it is estimated that there has been a loss in terms of working hours of approximately 260 hours, with a daily wage of 260,67 Mts (corresponding to 3.50 dollars) representing an overall loss of 1,886,700.00 Mts with respect to family income. The commerce sector (formal and informal) losses in terms of family income are around 2,714,583.33 Mts.

The rate of employment in general is 68.2% for men and 66.4% for women and in the four provinces affected by the cyclone Idai, an average of 71.13% corresponds to employment for

122 Castelo, V, Dique S et Magaia R, 2018, Impacto do Ciclone Tropical Idai no Tecido Empresarial e Medidas de Intervenção para a Recuperação, CTA - Confederação Das Associações Económicas De Moçambique, Maputo, Moçambique

123 Castelo, V, Dique S et Magaia R, 2018, Impacto do Ciclone Tropical Idai no Tecido Empresarial e Medidas de Intervenção para a Recuperação, CTA - Confederação Das Associações Económicas De Moçambique, Maputo, Moçambique

124 Idem

women and 70.98% for men (IOF employment report-2016). In terms of damage and losses in infrastructure, 552 companies incurred losses of USD 138,971,092, and 16,381 workers were affected (Source: Tabelas Grupo de Indústria e Comércio, análise PDNA 30.4.19). The rate of child labor for the country is estimated at 13,6%, being 14,4% for males and 12,8% for females. Child labor is more pronounced in rural environments where agricultural work is dominant with 17,6% in rural environments versus 4.5% in urban, 18,3 % are male and 16,8% are female (Source IOF 2014/2015). In the four provinces affected by the Idai, rates of child labor, are higher in females in 2 provinces, Sofala (16,8% female and male 16%) and Manica (female 14,7% and 14,1% among male) while Tete (male 25,8% and 25,0% female) and Zambézia (male 13.8% and female 13.4%) reported less. With the devastation of crops and destruction of work equipment, families headed by women who depend on these sectors, become vulnerable to all kinds of violence, both domestic as well as gender and exposure to risks of contraction of diseases.

Water Supply, Sanitation and Hygiene

At a family and social levels, women have primary responsibility for the collection, management, storage and treatment of water. During the crisis, it was noticed that men were also not involved in these tasks, creating specific challenges for women. During the activities around the collection of water, it was noted the increased risk of gender based violence associated with reduced access to water due to this crisis. Not only that, 52% of the sites included in the MRA reported the lack of privacy for women and girls while they washed or defecated, increasing the risks of gender-based violence. Access to free menstrual hygiene was also a challenge. The reduction in money and food reserves among families, makes it more difficult for women to buy the products needed which leads to an increase in school dropouts due to forced unions and early marriages.

Transport: Roads and Bridges

The extension of the road network in the country is 30,562 and the average of the same tertiary roads in the four provinces affected by the cyclone is 35.5%. Of these tertiary roads 1,201 were identified, as being in bad conditions (INE, Estáticas dos Transportes e Comunicação, 2012). The roads sector constitutes one of the most important means for communication and flow of goods and people. The majority of roads that connect the 16 districts affected by the cyclone Idai, lives the greater part of the population producing consumer goods, and food. With the disaster, the producers of consumer goods had limited access to services and the viability of free trade value chains, 360,379 women heads of households were affected. The strong winds and floods in the affected areas have resulted in intransient roads and bridges. Several communities were isolated for days without any communication and rescue. With regards to communication, Idai placed serious communication limitations. Women heads of households could not establish communication and did not have information about places where to purchase goods of services including food products and relief aid.

The number of people who have lost communication property such as cell phones and radios were estimated at 502,545 women and 445,653 men. The GMPIS-declaration in the Women's Assembly about emergency and recovery in Sofala in 5/4/19) indicated the exclusion of vulnerable women and girls in humanitarian actions of relief, in the accommodation centers and "only men were responsible for decisions and tasks of distribution and hygiene articles, food, household items, clothing, support in life necessaries"; as such it is expected limited access of women and girls in participation in processes of civic education such as elections as well as in other health processes and human rights in general.

Transportation: Railways, Ports, Airports and Telecommunications

The use of mobile phone is estimated for women at 26% and men at 74% while the use of radio is 17% among women and 83.0% among men (INE, Homens e Mulheres, 2014). In terms of the workers, it was noted that over the years the number of users of mobile phones is growing and the number of subscribers in the paid pre- and post- paid tariffs, the volume of business has increased over the years (INE, Estatísticas dos Transportes e Comunicação, 2012). With the cyclone Idai, it is estimated that 2,673,296 households in the districts affected have lost means of communication such as cell phones and radios, which will affect the access to information about opportunities for rescue and recovery. The lack of access to information increased the exclusion of vulnerable women and girls in humanitarian relief; food, household items, clothing, support in the livelihoods and social services as well access and interruption in the processes of civic education related elections, health and human rights in general.

Energy

The IOF -2014/15, indicates that of the 1.3 million households with electricity, on average, approximately 29% of households are headed by women, corresponding to an index of about 0,41, which represents the smallest number of households with electrical energy. The distribution of households headed by women with energy in Manica is 27%, Sofala 25,2%, Tete and Zambezia 20,5% and 22,3% respectively. The lack of power for some women can translate into loss of income and livelihoods if their economic activity requires the use of electrical energy. The lack of lighting in public spaces such as access roads, parks, markets increases the vulnerability of women and girls to crime including rape, simultaneously reducing their mobility with consequences in access to education, health, leisure etc. At the household level, the burden of unpaid labor increases for women and girls, reducing the time for economic and remunerated activities, schooling and other.

Housing

In terms of total loss of houses an estimated 30,886 families that include households headed by women and girls were destroyed including domestic kits as well as complementary spaces to the homes (barns, pens, kitchens, bathrooms, tank to conserve water and washing machine). With the loss of their homes and complementary spaces, households headed by women are in a precarious state. Without special protection for these groups, they run the risk of not being properly included in the process of resettlement; and prolonged periods without housing makes them very vulnerable to risk of exposure to sexual exploitation, contraction of HIV, early marriages, illicit, land grabbing, marginalization, poverty and further vulnerability.

Health and Nutrition

Of the total affected, 75,000 are pregnant women who belonged to the network of community and institutional care and 45,000 deliveries expected in the next 6 months. 7,000 of these are at risk of complications resulting in death. There was also the interruption of the provision of care package of GBV in 19 health units. Diseases reported included malaria, acute diarrhea (AWD), malnutrition and acute respiratory diseases. Sexually transmitted diseases were reported in 61% of the assisted locations. Women had access to sexual and reproductive health in only 78% of the MRA locations (2019). Of the 27,764 (Idai, Ponto de Situação 4 de Abril 2019) vulnerable people affected by Idai 69% of women were in ART treatment. With the flooding and destruction of health units in the 16 districts, women users of various services discontinued the treatment, as well being deprived of assistance to secure deliveries. This destruction of these services, greatly affected care services for women victims of violence and limiting the care and evidence for justice on the perpetrators.

Education

With the disaster, school dropouts will increase due to factors such as food insecurity in girls and their households, it is also expected the deterioration in health status among girls, due to damage to the sanitation infrastructure and the psychological effects of cyclone, which will inhibit their participation, continuation and qualitative of girls in school. In 18% of the sites evaluated in the MRA, 25 to 50 % of children (6-16 years old) were not attending school. After the cyclone and subsequent flooding, more than 1/3 highlighted that the two main reasons why children were not attending classes are; a) need to help the family and (b) loss of educational materials such as books and uniforms. These damages and losses affect girls vulnerability to forced marriages, sexual abuse and harassment, the risk of HIV and STI infection and other harmful practices towards girls, as well as the increased load in domestic work due to the destruction and loss of their life necessaries (ex: access to water, energy, transport) which will also force the girl to withdraw from school.

Gender Based Violence (GBV)

In 2018, the affected provinces had 18 Gabinetes e Secções de Atendimento a Mulher e Menor Vitima de Violência (units that assist women and minor victims of violence) in Sofala, 19 in Manica, 27 in Tete and 37 in Zambezia. In the same year, 28,610 cases of violence were reported, 14, against women, 9,704 against children and 3,609 against men. Of the cases of violence reported by province in 2018, 3,303 were in Sofala, 2,980 in Manica, Tete reported 1,802 and 2,479 were reported in Zambezia. Idai caused damage to 23 Gabinetes and Secções in all the affected provinces; one Gabinete in Beira was affected; 6 Secçoes in Sofala, 6 in Tete, 6 in Manica and 4 in Zambezia.

In periods of crisis, women and girls are especially at risk of gender-based violence as highlighted in the dimensions described above. The lack of access to resources, unsafe environments, increased tensions in common spaces, also expose women and girls to higher risk of GBV including sexual. Households with women and girls, and particularly headed by women are being subjected to sexual exploitation by men in power or with access to relief products and resources they need so much. National and international media on several occasions reported cases of sexual exploitation of women in exchange for food and relief items (AlJazeera, 25 April 2019, www.iol.co.za 1 May 2019). These complaints have not only come from the alleged victims but also from volunteers and other people in the affected communities and centers who have witnessed or have been made aware of these acts. The perpetrators of these crimes act with impunity, without the intervention of police authorities.

Protection and Social Action

People with specific needs, including women and girls, children, people with disabilities, elderly, households headed by women and children face particular risks in security and access to resources, in which during humanitarian crises these risks increase. The MRA identified 41,742 vulnerable people in the affected communities. Due to the movement of populations to safer areas, many children were separated from their families. The number of orphaned children currently is unknown. Thousands of children, particularly girls who survived, are at risk of being "given" to domestic work, trafficked or forced into marriages by families without means of survival.

The displacement, destruction of infrastructure, interruption of basic services, overcrowding and unsanitary conditions following the cyclone Idai led to an increase in the risks in protection. In 49% of the locations people reported a great concern for personal safety since the cyclone

and subsequent floods (64% in Sofala, Manica and 30% 44% 49% rural areas, urban areas). The poor performance of the police to prevent vandalism, attacks and theft, was regularly mentioned. The disruption of social services, particularly for the beneficiaries of social protection programs makes vulnerable groups subject to greater vulnerability to exploitation and very high-risk situations and survival.

This is further compounded by the loss of identification documents. 89% in Sofala, 51% in Manica, with a universe of 72% rural and 71% urban portion of people who reported loss of identification documentation which may give rise to conflicts related to ownership of land and heritage, impediment to access to basic social services, the exercise of law and civic duty, such as participation in elections and further exclusion, particularly of women and impediment to financing resulting in greater economic exclusion of women.

Employment and Livelihoods

The commerce and agriculture sectors reported estimated losses of workers' and household income of 15,890,811.43 Mts in Sofala, 8,352,470.40 Mts in Manica, 5,923,953.83 Mts in Zambezia, 5,237,085.20 Mts in Tete. These effects are devastating for women and girls who are mainly employed in the informal sector of the economy and are primarily subsistence farmers. In the informal sector or subsistence agriculture, "it is estimated that more than 240,000 hectares of farms, cattle and goats have been lost in the districts of Dondo, Buzi, Nhamatanda, Mwanza and Beira, which belonged to approximately 92,000 families, the produce in particular being maize, sorghum, rice and sesame (Report PDNA employment and means of livelihood, 2019). It is also estimated that at least 9,000 informal vendors lost their goods valued at least at 18,818,250 Mts. This type of impact forces families with low resilience to adopt negative strategies. These families 'use' women and girls an as a source of income through forced unions and early marriages, transactional sex and trafficking. The impact for these women and girls is not only the sexual exploitation, exposure to infection of STI and HIV, but also increased marginalization, poverty and vulnerability.

Governance

The cyclone Idai created total or partial destruction to administrative institutions of education, health, security, infrastructure, employment and social protection among others, with serious consequences for citizens. In this context, the concern of the Government consists, at least in restoring what was destroyed in the various socio-economic sectors and political administration so as to enable the internal dynamics on the economic, social and political development as well as the provision of public and private services to communities. The effects of the cyclone may result in the temporary absence of women in decision-making bodies that in turn has its repercussions. The exclusion of women in fundamental processes of political and social development has negative impacts for any society. In humanitarian crises, women and girls suffer greater human impact due to their specificities, socio-cultural, economic and political disadvantages. It is imperative that the reintegration, identification and integration not only of women in decision-making positions but the broad involvement of groups and networks of women in planning, implementation and monitoring of the reconstruction and recovery at the local level.

Risk Reduction and Management

The INGC drafted and adopted a Gender Strategic Plan (2016-2020). The plan aims to reduce the vulnerability of women in relation to disasters and mitigate impacts on sociocultural, economic and political rights arising from gender inequalities in order to contribute to the elimination of

all forms of discrimination against women, promoting fairness and equality between women and men. Six strategic objectives were devised to achieve the overall objective, using the following targets and indicators: a) disaggregation of all data and information provided by the authorities for sex and age; b) Reduction in the number of cases of gender based violence during emergencies by at least 50% by 2020; (c) reduction in the indices of discrimination based on sex in access to humanitarian aid in the accommodation centers during the emergency in at least 80%.

This plan provided for the establishment of a gender unit to ensure the implementation and monitoring of the actions undertaken by the INGC to “reduce the vulnerability of women in relation to disasters and mitigate the sociocultural, economic and political rights impacts arising from gender inequalities in order to contribute to the elimination of all forms of discrimination against women, promoting fairness and equality between women and men”. One of the lessons learned from the response to Idai is the fundamental need for disaggregation of data and the overall implementation of the Gender Strategic Plan of the INGC.

Land, Environment and Rural Areas

The majority of the population that has access to property with secure rights are men. In four provinces, the agricultural population with rights to agricultural land in Sofala only 26.32% are women and men have 73.68%. In Manica only 24.56% women have access to property with rights and men have 75.44%. In Tete and Zambezia women have 25.04% and 26.60%, respectively, and the men 74.96% and 73.40%. Access to land in Mozambique is governed by the law of the land that provides coownership in the use and exploitation of land documents, i.e., access to the DUAT. In the actions report from the women's networks in the 4 provinces affected by the cyclone, it states that "the majority of women do not have DUATs and that their families have DUAT their names are not listed. Women not having the DUAT or not bearing their name on it, constitutes impediments that put women more vulnerable towards land tenure.

Post-cyclone, with the movement of families to the shelters or safer areas, there is the opportunity for land grabbing. After the cyclone, a strategy adopted for the families to secure their land and heritage was to separate themselves, leaving women and younger children in the shelters, while the men were returning to the village of origin to protect their land. This inadvertently caused increased risks in protection faced by women and children, and also contributed towards deepening prejudices about social roles. For families headed women who do not have men to protect their land, with the loss of identification documents, these are at greater risk of loss of their land and property. Without possessions, livelihoods, poor access to services and marginalization contributes to the increase of feminization of poverty.

Recovery Needs

Gender Based Violence

The prevention of gender-based violence, as well as assistance to victims is fundamental to the physical and emotional well-being of women and girls so that they participate in social, economic and political life. The recovery strategies include:

- Rehabilitation of the Gabinetes and Secções of assistance to victims of violence
- Awareness campaigns on violence, sexual harassment in schools, early marriages
- Training of cadres from government and civil society organizations on integrated assistance to women and girls victims of violence

Table 60: Recovery needs in gender –gender-based violence

Detailed list of needs	MZN		USD
	Danos	Necessidades	
Gender Based Violence			
Rehabilitation Office for Integrated Care of Victims of violence	9,292,800	9,292,800	166,980.0
Rehabilitation Sections for attendance of victims of violence	136,294,499	136,294,499	2,449,042.0
Violence awareness campaigns		10,840,100	169,377.0
Sexual harassment campaigns in schools		10,840,100	169,377.0
Campaigns against premature and forfeited marriages (in schools and communities)		10,840,100	169,377.0
Training of government and civil society organizations on integrated care for women and girls who are victims of violence (10 districts)		32,000,000	500,000.0
Sub-total	**145,587,299**	**210,107,599**	**3,624,153.0**

Livelihoods, Economic Participation & Decision Making

It is critical to ensure the livelihoods of women in this phase of recovery and restoration. The various sectors have an unparalled opportunity and should pay careful attention in the participation and inclusion of women for a more equitable gender balance. Particular attention must be paid to women and women heads of households in the replenishment of resources, creation of temporary jobs, infrastructure that facilitates the participation of women in social and economic life and decision making about community resources. Looking at the informal sector of small business, strategies to ensure the livelihood of women include:

- Support for groups of women caregivers in ART
- Acquisition of collective agricultural equipment managed by women's groups
- Refitting of public toilets for women and girls
- Replacement of furnaces for the manufacturing of products derived from clay (low consumption firewood and coal stoves) and a fund for supplementary services (e.g. metal)
- Reposition of product kits for women entrepreneurs in the informal sector, including promotion of and support for registration of economic activity in the context of BBB
- Fund for advocacy for women's groups and networks for the inclusion of community-based women and girls in access to economic activities and policies supporting local economic initiatives managed by groups/ networks of community-based women
- Prioritization of joint ownership by ensuring the inclusion of the woman's name in documents of land tenure
- Prioritization of identification documents for the vulnerable households headed by women, girls and elderly (F/M)

Table 61: Recovery needs in gender –Livelihoods, Economic Participation & Decision Making

Detailed list of needs	MZN			USD
	Damage	Loss	Needs	
Livelihoods				
Support for groups of women caregivers in the art of TARV		704,000	704,000	11,000.0
Acquisition of collectives agricultural equipment managed by groups of women	10,250,000		10,250,000	160,156.0
Replacement of public locker rooms for women and girls (short term)	20,137,728		20,137,728	314,652.0
Replacement of community furnaces for the production of Agila-derived products	190,000		190,000	2,969.0
Fund for coal-fired services		38,000	38,000	594.0
Replacement of product kits for women entrepreneurs especially in the informal sector including promotion and support to register economic activity in the BBB environment	18,000,000		18,000,000	281,250.0
Sub-total	**48,577,728**	**742,000**	**49,319,728**	**770,621**
Detailed list of needs	**MZN**			**USD**
	Damage	**Loss**	**Needs**	
Socio-Economic and Political Participation				
Advocacy fund for women groups and networks for the inclusion of women and girls of community base in access to economic and political activities (4 provinces)			800,000	12,500.0
Support for local economic initiatives managed by community-based women's groups/networks		43,200,000	43,200,000	675,000.0
Prioritization of joint titration ensuring the inclusion of the name of the woman in the land tenure documents		25,000,000	25,000,000	390,625.0
Prioritization of identification documents for vulnerable households headed by women, girls and the elderly (F/M)		7,513,500	7,513,500	117,398.0
Sub-total	-	**75,713,500**	**76,513,500**	**1,195,523**

Psychosocial Support for Women

Women have a social and cultural role as caregivers. However, the effects of the cyclone Idai affected women also not only by the loss of goods, but emotionally in the loss of family, injuries and psychological trauma of the disaster. For them to return to their roles, their tasks and responsibility they need emotional support and well-being. Through networks of psychosocial support, it is intended to:

- Establish a fund to ensure the groups of women caregivers and women's networks have psychosocial support for women and children affected
- Reactivate the institutional and community system of psychosocial support through the services of psychology students to be managed by women's groups and networks
- Provide psychosocial support for community midwives, nurses, teachers and caregivers and community police officers (female)

Table 62: Recovery needs in gender -Psychosocial Support for Women

Detailed list of needs	MZN			USD
	Damage	Loss	Needs	
Psychosocial support for women				
Fund to ensure the groups of women caregivers and women's networks in psycho-social support for women affected			100,000	1,563.0
Reactivation of the institutional psycho-social support system and community through the services of psychology students to be managed by groups and networks of women		100,000	100,000	1,563.0
Psychosocial support for community midwives, nurses, teachers and community caregivers and police (female)			80,000	1,250.0
Sub-total		**100,000**	**280,000**	**4,376.0**

Table 63: Short, Medium & Long-term Recovery Initiatives and Costs

	ItemItem	Priority (1 to 5)	CostCosts	
			MZN	USDUSD
Short term	Rehabilitation of the Office and Sections of assistance to victims of violence	1	145,587,299	2,274,801.55
	Support for groups of women caregivers in ART	1	704,000	11,000.00
	Prioritization of identification documents for the vulnerable households headed by women, girls and elderly (F/M)	1	7,513,500	117,398.44
	Reactivate the institutional and community system of psychosocial support through the services of psychology students to be managed by women's groups and networks	1	100,000	1,562.50
	Establish a fund to ensure the groups of women caregivers and women's networks have psychosocial support for women and children affected	1	100,000	1,562.50
	Provide psychosocial support for community midwives, nurses, teachers and caregivers and community police officers (female)	1	80,000	1,250.00
	Awareness campaigns on violence, sexual harassment in schools, early marriages	2	16,260,150	254,064.84
	Training of cadres from government and civil society organizations on integrated assistance to women and girls victims of violence	2	32,000,000	500,000.00
	Fund for advocacy for women's groups and networks for the inclusion of community-based women and girls in access to economic activities and policies supporting local economic initiatives managed by groups/ networks of community-based women	2	800,000	12,500.00
	Reposition of product kits for women entrepreneurs in the informal sector, including promotion of and support for registration of economic activity in the context of BBB	3	18,000,000	281,250.00
	Support to economic local initiatives by women's groups and networks	3	43,200,000	675,000.00

Medium term	Awareness campaigns on violence, sexual harassment in schools, early marriages	1	16,260,150	254,064.84
	Prioritization of joint ownership by ensuring the inclusion of the woman's name in documents of land tenure	1	25,000,000	390,625.00
	Refitting of public toilets for women and girls	1	20,137,728	314,652.00
	Fund for advocacy for women's groups and networks for the inclusion of community-based women and girls in access to economic activities and policies supporting local economic initiatives managed by groups/ networks of community-based women	2	100,000	1,562.50
	Acquisition of collective agricultural equipment managed by women's groups	2	10,250,000	160,156.25
	Replacement of furnaces for the manufacturing of products derived from clay (low consumption firewood and coal stoves) and a fund for supplementary services (e.g. metal)	2	228,000,000	3,562,500.00
	Total		**238,250,000**	**3,722,656**

Implementation Arrangements

For the implementation of these strategies, various sectors and units of interventions will be involved in the assistance and empowerment of women at community and institutional levels. At community levels synergies with the institutions will be created, promoting collective responses between the actions of the base level, such as reporting of violence, the referral of the complaint, economic empowerment and psychosocial support. In this sense, groups of women and networks of women, community-based women's movements in affected areas will constitute the greatest force for leveraging this process. At institutional level, the Ministry of Women and Social Action, Development Agencies that deal with Gender, UN Women and other and other partners, will articulate the implementation process.

SOCIAL PROTECTION

Sector Context

Mozambique is characterized by high levels of poverty, especially in rural areas. Most Mozambicans live below the national poverty line. During the last Family Budget Survey (2014-2015), poverty rates were slightly above the national average in Zambezia and below the national average in Sofala, Manica and Tete.

Basic social security (non-contributory social assistance) is one of the pillars established by the Social Protection Law (Law 4/2007), together with compulsory social security and supplementary social security. The National Social Security Basic Strategy 2016-2024 (ENSSB II) defines the guiding principles and goals for social assistance in Mozambique. The PQG states that 25 per cent of vulnerable households should be covered by basic social protection programs by 2019 and the National Development Strategy (ENDE) 2015-2035 indicates that 75 per cent of vulnerable households should be covered by basic social protection by 2035.

Although basic social protection in Mozambique receives the smallest share of resources compared to other social sectors, the sector has had significant increases in expenditure over time. The social action sector had a budget allocation of MZM 6.1 billion (USD 101 million) in 2018, corresponding to about 2% of the State Budget. This represents an increase of around 20% in real terms compared to the budget allocation for 2017 and a 63% increase in expenditure.

The basic social protection programs in Mozambique include:

- Basic Social Subsidy Program (PSSB) aimed at people with no capacity to work: (i) the elderly; (ii) people with disabilities or chronic degenerative diseases; (iii) children, including 0-2 years old, child-headed households, orphaned children living in poor and vulnerable families.
- Social Action Productive Program (PASP) is a public works scheme targeting poor families with at least one member with work capacity.
- Direct Social Support Program (PASD) provides multiform support in response to specific shocks that aggravate vulnerability, which includes a specific component for post-emergency disaster response.
- Social Services Program (ProSAS) is to provide social services to prevent and respond to abuses and violations of the rights of vulnerable people.
- Social Units Assistance Program (PAUS) provides shelter to vulnerable people who are homeless, as well as assistance to various institutions for the accommodation of children, the elderly, people with disabilities, and people with chronic and degenerative diseases.

In August 2018, the Government updated the amounts of monetary transfers of social assistance programs, unchanged since 2015, through Decree No 59/2018. For the PSSB the new values are (a) MZM 540 (USD 8.4) for single-person households; (b) MZM 640 (USD 10) for families of two; (c) MZM 740 (USD 11.6) for families of three; (d) MZM 840 (USD 13.1) for families of four; MZM 1,000 (USD 15.6) for families of five. Regarding PASP, the benefit amount was updated from MZM 650 to MZM 1,050 (USD 16.4).

In 2018, 519,290 beneficiary families were assisted by basic social protection through social assistance programs. This is equivalent to about 8% of the total population and about 15%

of the population living in poverty. Among the four affected provinces (Sofala, Manica, Tete, Zambézia), 11 INAS delegations operate in 60 districts, assisting 159,669 PSSB beneficiaries and 44,322 PASP beneficiaries.

The social protection area was already facing significant capacity constraints before Cyclone Idai. The 11 delegations mentioned above had, on average, two INAS staff per 1,000 beneficiaries (below the national average - 2.6). The INAS teams had access to an average of two cars and three motorcycles per delegation, which were already insufficient to carry out routine activities, and INAS often had to borrow vehicles from the Provincial Directorate of Gender, Child and Social Action (DPGCAS) or other government institutions to conduct field visits or make social benefit payments. The INAS delegations are supported by 1,870 'permanentes' (community volunteers) responsible for beneficiary identification, assistance and case management; however, their capacity is also limited in that the ratio is about 100 beneficiaries per Permanent (up to 238 beneficiaries per Permanent in the Beira Delegation). Also, given the shortage of technicians at the SDSMAS level, community structures and development partners were involved in case management processes or in the management of programs based on community rehabilitation for people with disabilities.

Prior to Idai, MGCAS/INAS, with support from the World Bank, WFP, UNICEF, ILO and initiatives of other partners, was already working on strengthening shock-sensitive social protection systems (SRSP); such efforts included a national high-level workshop on shock responsive social protection, a study on coordination mechanisms between INAS and INGC, an MGCAS-led SRSP working group and a SRSP implementation plan.

Table 64: Key Baseline Data for the Sector

Province	Delegation	Districts	Tecnicos	Permanentes	Beneficiaries PSSB*	Beneficiaries PASP*	Total beneficiaries
Sofala	Beira	5	61	104	20346	4452	24798
	Caia	5	19	111	8240	1050	9290
	Machanga	3	15	61	5605	938	6543
Manica	Chimoio	8	55	341	23424	8141	31565
	Barue	4	33	178	14093	1288	15381
Zambezia	Quelimane	8	42	241	18801	5787	24588
	Mocuba	7	48	303	18258	8532	26790
	Gurue	5	41	212	10115	8785	18900
Tete	Tete	6	53	146	18436	2126	20562
	Moatize	5	27	115	16524	2873	19397
	Maravia	4	22	58	5827	350	6177

The Effects on Social Protection

Overview of effects on the social protection sector

Following the impact of Idai, social protection systems and operations phased several constraints, some carried over from before the disaster, which limited service delivery to some of the most vulnerable community members in disaster affected areas. Constraints included limited staffing and presence at district and community levels; limited material resources

including vehicles and fuel; time-consuming manual payment mechanisms; limited information management capacity and limited capacity, during the first line emergency response phase, to expand coverage to new disaster affected potential beneficiaries – all these impacting both routine and emergency functions required of MGCAS/INAS and often derived from under resourcing.

A field capacity and impact assessment was conducted between 25 April and 1 May 2019. Three teams were deployed to assess impact on social protection delivery capacities in Sofala, Manica, Zambezia and Tete. Teams were led by MGCAS with support from UNICEF and WFP. The teams conducted data collection and key informant interviews with administrators of the different levels of service delivery structures and carried out verification missions to assess damages and losses of multiple social action centers across the affected areas. Four provincial offices (DPGCAS), seven INAS delegations, nine district offices (SDSMAS/RAMAS) and over a dozen social action centers were visited, with additional data collected remotely. Overall, information from 91 social action service units was analyzed, plus approximately 118 minor social action assets (small agro-processing centers for income generation). The following key impacts were identified:

- ***Service delivery infrastructure damages****:* in the assessed areas, over 74 percent of a reported 209 social protection service delivery units[125] were damaged (66 percent partially and 9 percent completely). Assessed units included provincial offices (DPGCAS), INAS Delegation offices, district health and social service offices (SDSMAS/RAMAS) and social action centers (orphanages, transit centers, facilities for the elderly and chronically ill, facilities assisting people with disabilities, among others) with varying degrees of damage. Sofala was most heavily affected with over 95 percent of facilities reporting some level of damage. Over 60 percent of facilities reported experiencing electricity outages of more than one week. 75 percent of units were reported to be temporarily inaccessible for reasons such as flooding, damages or inaccessible roads.
- ***Service delivery unit resource and equipment losses****:* approximate 25 percent of assessed units reported losses in transportation assets (vehicles/motorcycles) and office equipment such as computers. Overall, nine vehicles (out of 26 reported to be operational prior to Idai in the affected areas) where non-operational due to the disaster, significantly impacting the already limited movement capacity of field staff to deliver services and payments. 20 computers and more than 6,000 archives were reportedly lost.
- ***Impact to social protection staff****:* over 20 percent of staff working in social protection service units reported damages to their homes; this, combined with access disruption, led to around 30 percent of INAS delegations saying staff were unable to report to work (although length of absences was anecdotally reported to be only a few days in most cases).
- ***Existing social protection program beneficiaries (PSSB, PASP, PASD) affected****:* 21 percent of existing beneficiaries were reported to be affected by Idai across the four impacted provinces. Sofala reported over 55 percent of beneficiaries being affected. Reported effects included displacement into temporary accommodation centers, damage of homes as well as injuries and deaths. Given the pre-existing high levels of vulnerability among social protection beneficiaries, these groups are often exposed to elevated risks and subsequent lack of access to services and marginalization. In addition, in multiple districts assessed, staff anecdotally calculated that over 80 percent of beneficiaries had lost/damaged identification documents required to redeem assistance (this number were based on the last payment cycle conducted in the reporting area but could not be verified during the assessment).

125 The assessment was not able gather information on all units in affected areas.

- ***Disruption of subsidy payments to social protection beneficiaries****:* two of seven INAS delegations assessed reported not being able to conduct PSSB/PASP payments to most of their beneficiaries since the disaster; meaning two monthly cycles (March and April 2019) have been missed – this includes Machanga Delegation, which covers 6,543 households including Buzi District, which was one of the worst hit areas. The lack of payment is reportedly caused by interrupted access to payment points and affected populations due to road closures. Yet, at the time of the assessment, 95 percent of payment points, for district offices that responded, were reported to be accessible; and except for the two mentioned above, the remainder of delegations reported payments ongoing for April and planned for May with close to pre-disaster coverage rates.
- ***Community level service provision by permanentes (community volunteers) and by other community structures****:* half of the assessed district offices reported that the capacity of permanentes to conduct household follow up visits, as part of their regular engagement to assess needs and to assist beneficiaries, has been partially impacted by the disaster. Over 30 percent of district offices reported having partial interruptions in ability to communicate payment redemption information to beneficiaries. Other community structures, such as Child Protection Committees, or community-based activists for people with disabilities were equally affected, loosing tools and equipment.

Field assessments were not able to complete a comprehensive damage assessment of all social protection service units and community structures. Hence, information on damages and losses was extrapolated from a combination of sources including key informant interviews, compilation of existing facility damage reports and verification missions during field assessment to key service units in affected areas. The table below shows the estimated costs of infrastructure damages, as well as equipment and other losses. Essentially all facilities assessed were under the public domain; yet, there are private facilities providing key social action services (such as orphanages run by religious institutions) that were not covered during the field data gathering exercise and further efforts are required to understand damages and losses to those facilities.

Table 65: Damage and Loss for Sector (in local currency and USD)

Category	Service Unit	Total Damages (Local Currency)	Total Losses (Local Currency)	Total damages (USD)	Total Losses (USD)
Social Action Service Delivery (Sofala, Manica, Tete and Zambezia)	Provincial offices DPGCAS	144,000	246,272	2,250	3,848
	INAS Delegations	1,382,400	3,694,080	21,600	57,720
	District Offices	1,814,400	9,850,880	28,350	153,920
	Social action centers[6]	216,576,000	9,850,880	3,384,000	153,920
	Minor assets[7]	14,784,000	985,088	231,000	15,392
Totals		234,700,800	24,627,200	3,667,200	384,800

Recovery Needs

The social protection sector requires urgent rehabilitation of critical service infrastructure including spaces like orphanages, elderly person homes, transit centers, chronic illness centers, centers for people with disabilities and special schools for children with disabilities. At the same time, the adjustment and revitalization of social assistance programs is essential, including community-based programs for people with disabilities and early childhood development, community social services, family separation prevention interventions, alternative protection and case management programs, bringing the community services closer to the population and reinforcing the link with State services. MGCAS/INAS are reviewing damage reports to prioritize rehabilitation needs based on available resources. The infrastructure rehabilitation requirements, including a 1.5 build back better multiplier to consider more resilient and accessible service delivery spaces, is costed at approximately MZM 354.8 billion (USD 5.7 million).

Table 66: Recovery needs

	Total Recovery Needs (Local Currency)	Total Recovery Needs (USD)
Social Action Service Delivery Units	352,051,200	5,500,800
Social Protection Programs to Assist Disaster Affected Communities	2,974,464,000	46,476,000
Total	3,326,515,200	51,976,800

In addition to the existing 203,900 social protection beneficiary households in affected areas, there is an expanded population segment with increased vulnerability levels resulting from Idai. Poverty levels in the affected provinces already ranged between 31 and 51 percent of the population before the cyclone; hence, the expanded socioeconomic impact of Idai is expected to have lasting consequences on a large portion of the population in affected areas. Initial humanitarian calculations estimated 1.8 million people in need and highlighted additional groups that required specific attention and recovery assistance; this includes many pregnant women (74,600 according to OCHA - of which 43,000 are expected to give birth in the next six months) and over 500,000 children affected by the cyclone. According to estimates 111,000 people with disabilities were affected by cyclone IDAI. For this reason, social protection response during post-emergency and early recovery phases must include mechanisms to target expanded vulnerability groups beyond the baseline coverage prior to the disaster.

A strategy has been developed by MGCAS/INAS with support from the WB, WFP, UNICEF and other partners, to activate social protection programmes, within the existing national social protection legal and policy framework, to assist disaster affected populations for early recovery and reconstruction. The planned implementation has the following sequenced approach:

1) A simplified enrolment PASP intervention for three months covering around 40,000 households, with a household assistance value of MZM 1,050 (USD 17);
2) A PASD-Post Emergency (PASD-PE) for six months covering approximately 120,000 households, with a household assistance value of MZM 2,500 (USD 40); and
3) A PSSB child grant program targeting most vulnerable households with children 0 to 2 years in the worst affected areas for 24 months covering approximately 25,000 households, with a household assistance value of MZM 540 (USD 9).

Approximately MZM 2.9 billion (USD 46.6 million) are required to rollout the PASD-PE and Child Grant program interventions for early recovery and reconstruction; against this, the World Bank has communicated a preliminary to intent to cover a significant portion of the PASD-PE programming costs, pending final confirmation at the time of release of this report. The PASP recovery component is not included in the recovery framework needs costing for the social protection sector, as this intervention was already planned, at a similar intended scale and geographic coverage, before the disaster hit.

Table 67: Short, Medium & Long-term Recovery Initiatives and Costs (local currency & USD)

	Item	Priority (1 to 5)	Description	Cost	
				Local Currency	USD
Short term	Infrastructure recovery for social action centers	2	Rehabilitation of critical service infrastructure	352,051,200	5,500,800
	Post Emergency Direct Social Assistance Programme (PASD-PE)	1	Social protection programming to assist disaster affected populations (6 months)	2,456,064,000	38,376,000
Medium Term	Child Grant (PSSB)	2	Social protection programming to assist disaster affected populations (24 months)	518,400,000	8,100,000

Implementation Arrangements

Table 68: Social protection recovery assistance program plan (2019-2021)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr-Sep	Oct-Mar	Apr-Sep
Rapid needs assessment	X														
Preparation phase 1 & 2	X	X	X	X	X										
Phase 1: Early Recovery															
PASP Recovery			X	X	X										
Phase 2: Reconstruction															
PASD-PE						X	X	X	X	X	X				
Phase 3: Transition to regular SP															
PSSB-Child Grant 0-2												X	X	X	X
Elderly PSSB & PASP												X	X	X	X

DISASTER RISK REDUCTION

Sector Context

The Government of Mozambique adopted the National Disaster Management Policy in 1999, as well as the National Institute for Disaster Management (INGC), the multisector Technical Council for Disaster Management (CTGC), and the Coordination Council for Disaster Management (CCGC) – an inter-ministerial body chaired by the Prime Minister.

In 2006, the Government also established the National Civil Protection Unity (UNAPROC) and the multisectoral National Emergency Operations Center (CENOE). Emergency Operations Centers were also created at the regional, provincial and district levels. A network of Local Disaster Risk Management Committees (CLGRC), made up of volunteers from local communities were also created. Several community-based early warning systems were established across the country, targeting the most at-risk communities.

In the same year, the Government adopted a 10-years Master Plan for the Prevention and Mitigation of Natural Disasters (PDPMCN 2006-2015), and the Disaster Risk Management Law was enacted in 2014. In 2017 a new plan was adopted, aligned to the Sendai Framework for DRR and to the Development Strategies of the country.

Every year, the Government prepares a contingency plan based on the seasonal forecast for the rainy and cyclone season (October to March). Based on the most likely scenario (Scenario 2) of the Plan, at the beginning of 2019, the Government planned to respond to major floods and cyclone in the central and northern regions, particularly in the provinces of Zambezia and Cabo Delgado. Available means included: weather and hydrological network to provide data to DNGRH and INAM about the Limpopo, Save, Buzi, Licungo and Messalo river basins and linked to 127 DRM Local Committees. Logistics and transportation equipment were prepositioned, and 6,815 classrooms, 1,253 churches, 311 warehouses and 25 football stadiums were identified as evacuation shelters. INGC and partners had available 2.008 ton of food (cereals, beans and oil) enough for emergency assistance of 126,375 people and shelter items for 74,000 people.

Despite the enormous and timely mobilization and disposition of resources, and the fact that warnings were issued, personnel mobilized, and coordination structures were ready to respond, the magnitude of the catastrophe quickly exceeded these capacities. Many of the structural problems of the response system were exposed: limited maintenance of the SAP and response equipment; low level of preparedness of the staff, volunteers and response mechanisms; heterogenous capacities at different levels; lack of psychosocial support to responders; different technical languages and lack of clarity in terms of procedures.

The Effects on Disaster Risk Reduction

The combination of winds, rains and floods resulted in severe damages to the EWS infrastructure in the region. INGC infrastructure, logistics and TIC equipment were also damaged. This situation has created a new level of risk, and response capacities and early warning information for a future event can’t be guaranteed.

Transport and communication infrastructures, key for disaster response and recovery, were also destroyed. These include optic fibers, roads, bridges, as well as communication systems.

This in turn cut off early warning communication at all levels (between Maputo and the Provincial Office, and between response teams and the affected community). For instance, the flood early warning message generated by DNGRH on 19 March and shared with INGC didn't reach the community due to total communication breakdown. Subsequent floods also destroyed roads and bridges hindering evacuation, search and rescue as well as emergency response for at least 4-5 days.
All Provincial staff in Sofala (30 people) were directly affected by the disaster (houses destroyed, loss of relatives, and others).

Personnel deployed for coordination of emergency response were affected psychologically.
In general, the disaster reduced technical capacities for responding to another emergency in the region, as well as to address future humanitarian needs. This calls for immediate actions to restore these capacities.

The impact of the phenomena on the environment such as destruction of basins, saturation the rivers beds, saturation of the soil exacerbates the existing vulnerability of the community. This situation requires rapid update of hazards mapping and risk assessments of the region.

Table 69: Summary of Damage for Sector (in local currency and USD)

Damage	Damage MZM		Damage USD	
	Public	Private	Public	Private
69 Hydrological gauge stations	6,624,000	-	103,500	-
5 Telemetric stations	5,120,000	-	80,000	-
Dikes of Nante and Nicoadala	390,000,000	-	6,093,750	-
5 Automated Meteorological stations	6,239,008	-	97,485	-
Dopler radar system (Beira)	120,000,000	-	1,875,000	-
INAM delegation IT equipment	11,147,940	-	174,1867	-
2 INAM delegation vehicles (4x4)	400,000	-	6,250	-
INAM delegation building and house	15,259,895	-	238,436	-
2 Buildings of COE of Sofala and Tete	9,170,000	-	143,281	-
Radio and sensor system	15,000,000	-	234,375	-
Access road to COE of Zambezia	2,000,000	-	31,250	-
IT and office equipment of INGC (6 desktops and printers, 1 TV, 1 Copier, 1 Datashow, 3 desks, 4 air conditioners, 1 generator of 5KVA) in Tete, Sofala	1,058,125	-	16,533	-
13 Warehouses of INGC in Zambezia and Sofala	59,125,000	-	923,828	-
96 kits of the Local Committees for Disaster Risk Management	-	26,950,000	-	421,094
27 Community alert sensors	-	342,500	-	5,352
39 Community and conventional rainfall gauge stations	-	361,000	-	5,641
19 Radios (12 VHF and 7 HF radios)	-	2,328,000	-	36,375

2 Computers (1 desktop and 1 lapt top)		150,000	-	2,344
17 Batteries and 17 Solar panels		110,500	-	1,727
Total	641,143,968	30,242,000	10,017,875	472,531

Crosscutting issues

Gender: Gaps on provision of disaggregated data on human impacts of cyclone Idai as well as lack of comprehensive floods and cyclones maps and vulnerability and risk assessments that address the differentiated needs of women, men, children and vulnerably groups will require much more attention of the DRR sector to ensure that vulnerabilities and capacities are timely identified and duly addressed in the context of disaster preparedness and response.

Environment: Coordination with land use planning and climate change adaptation strategies and plans should be established to create synergies and avoid duplication, namely in aspects such as early warning, hazard analysis and shorter and longer-term spatial development planning.

Governance: linkages should be established with the governance sector to ensure the adequate articulation of actions between DRR and local governance.

Recovery Needs

Recovery needs are organized in five strategic areas, aligned to the DRR Master Plan (2017-2030), as follows:

Strengthening preparedness, response, recovery and resilient reconstruction

- Rehabilitate and reconstruct preparedness and response infrastructure (Emergency operation centers, warehouses, schools, churches, CLGRC and other critical infrastructure to support coordinated preparedness actions between INGC, INAM, DNRGH, ARAS)
- Develop and update multi-level flood and cyclone preparedness and response SOP
- Updating/establishment of contingency plans at provincial and local level.

Immediate restoration of early warning capacities

- Inventory and evaluation of the existing flood and cyclone early warning early action protocols in the affected region,
- Immediate reinstallation and recovery of affected flood and cyclone early warning systems;
- Updating of the multi-hazard risk maps and scenarios, assessing new exposure and vulnerabilities caused by the catastrophe.
- Establishment of an integrated national multi-hazard EWS with detailed SOP aligned across INGC, INAM, DNRGH & ARAs and in line with the DRR Master Plan 2017-2030, including training to the local communities.

Building institutional response resilience

- Develop a business/services/operations continuity plan for national and local disaster management systems, including a longer-term capacity building strategy and plan.
- Psychosocial support to the staff and volunteers involved in the disaster response.

Strengthening Governance of the RRD system

- Analysis of the situation of CLGRC, creation, strengthening and training of local committees;
- Definition and implementation of a short-term policy reform strategy, including regulations and SOP for public, private and civil society organizations in flood and cyclone exposed areas.
- Operationalization and capitalization of the Disaster Management Fund to support the affected region, and implementation of a Disaster Risk Financing strategy;
- Regulation and updating of existing DRM legal and institutional framework, including the mandate of INGC and technical agencies – INAM, DNRGH & ARAs for clarity of roles and responsibilities to support efficient MHEWS and coherent messaging to the people and its operational branches and national, regional and local level.

Table 70: Recovery needs in DRR

Damage/Loss and Needs	Needs			
	MZM		USD	
	Public	Private	Public	Private
2 Buildings of COE of Sofala and Tete	9.170.000,00	0,00	143.281,25	0,00
Access road to COE of Zambezia	2.000.000,00	0,00	31.250,00	0,00
Dikes of Nante and Nicoadala	390.000.000,00	0,00	6.093.750,00	0,00
IT and office equipment of INGC (6 desktops and printers, 1 TV, 1 Copier, 1 Datashow, 3 desks, 4 air conditioners, 1 generator of 5KVA) in Tete, Sofala	1.058.125,00	0,00	16.533,20	0,00
13 Warehouses of INGC in Zambezia and Sofala	59.125.000,00	0,00	923.828,13	0,00
96 kits of the Local Committees for Disaster Risk Management	0,00	26.950.000,00	0,00	421.093,750
69 Hydrological gauge stations	8.280.000,00	0,00	129.375,00	0,00
5 Telemetric stations	6.400.000,00	0,00	100.000,00	0,00
5 Automated Meteorological stations	7.486.809,84	0,00	116.981,40	0,00
Dopler radar system (Beira)	120.000.000,00	0,00	1.875.000,00	0,00
27 Community alert sensors	0,00	428.125,00	0,00	6.689,45
Radio and sensor system	15.000.000,00	0,00	234.375,00	0,00
39 Community and conventional rainfall gauge stations	0,00	451.250,00	0,00	7.050,78
19 Radios (12 VHF radios and 7 HF radios)	0,00	2.328.000,00	0,00	36.375,00
2 Computers (1 desktop and 1 lap top)	0,00	150.000,00	0,00	2.343,75
17 Batteries and 17 Solar panels	0,00	110.500,00	0,00	1.726,56
INAM delegation IT equipment	11.147.940,00	0,00	174.186,56	0,00
INAM delegation vehicles (4x4)	4.000.000,00	0,00	62.500,00	0,00
INAM delegation building and house	15.259.894,80	0,00	238.435,86	0,00
1. Strengthening readiness and response			38.400.000	600.000
2. Rebuilding of early warning capacities			176.000.000	2.750.000
3. Building institutional response resilience			19.200.000	300.000
4. Strengthening Governance of the RRD system			76.800.000	1.200.000
Total	959.327.769,60	7.967.875,00	14.989.496,40	475.279,30

Recommendations for DRR and Building Resilience in Sector

The catastrophic impact of cyclone Ida in the DRR sector, and particularly the early warning systems and preparedness and response capacities provide the lessons for the improvements ahead to restore and strengthen these capacities and build resilience for the DRR sector. Key recommendations include:

1) Improving education of local communities to live with cyclones and floods ensuring all communities at risk are informed, educated or trained to prevent, prepare and respond and recover from the impact of multi-hazards;
2) increasing resilience of multi-hazard early warning systems to ensure these remain functional and early information flows and always reaches at-risk communities;
3) improving assessment, resilience and spatial distribution of flood and cyclone shelters to ensure these are close to communities in need and offer the required safety and protection;
4) strengthening national and local preparedness and response capacities to ensure that search and rescue and humanitarian is provided timely to the populations at risk
5) and humanitarian assistance is provided timely to populations and humanitarian assistance;
6) Improving emergency response planning to ensure that all accommodation centers are identified and equipped with adequate facilities for humanitarian assistance in advance to disasters;
7) increasing resilience of meteorological and hydrological infrastructure, social and productive infrastructure to ensure business continuity and support to emergency operations and rapid recovery.
8) Integration of DRR into land use planning to prevent inadequate occupation and development of flood risk areas.

Table 71: Short, Medium & Long-term Recovery Initiatives and Costs

	Item	Priority	Cost	
		(1 to 5)	MZM	USD
Short term	Rehabilitation of 74 hydrological network stations	1	14,680,000.00	229,375.00
	Rehabilitation of 5 meteorological stations	1	7,486,809.84	116,981.40
	Rehabilitation of community-based multi-hazard early warning systems	1	879,375.00	13,740.23
	Acquisition and installation of community-based multi-hazard early warning communication system	1	2,588,500.00	40,445.31
	Acquisition of equipment of Local Communities for Disaster Risk Management	1	26,950,000.00	421,093.75
	Acquisition of IT equipment and vehicles for INAM delegation in Beira	2	15,147,940.00	236,686.56
	Develop and update common preparedness and response SOP at different scales	1		500,000.00
	Updating/establishment of contingency plans at provincial and local level, articulated with the national level.	1		100,000.00
	Inventory and evaluation of the existing flood and cyclone EWS in the affected region.	1		250,000.00
	Establishment of integrated National Multi-hazard EWS with detailed SOP and training to communities	1		1,500,000.00
	Updating of hazard and critical infrastructure maps and risk scenarios	1		1,000,000.00
	Develop and implement a business/services/ operations continuity plan for DRM	2		200,000.00
	Psychosocial support to the staff and volunteers involved in the response and recovery actions.	1		100,000.00
	Analysis of the situation of CLGRC, creation, strengthening and training of committees in highly exposed areas on the affected region (after updating of the multi-hazard scenarios)	1		1,000,000.00

Medium term	Rehabilitation of INAM delegation and house in Beira	1	15,259,895	238,436
	Rehabilitation of radio and sensor system in Beira	2	15,000,000	234,375
	Rehabilitation and equipment of COE of Zambezia, Sofala and Tete	2	12,228,125	191,064
	Rehabilitation of INGC 13 warehouses in Sofala and Zambezia	2	59,125,000	923,828
	Rehabilitation of dikes of Nante and Nicoadala	1	390,000,000	6,093,750
	Definition and implementation of a short-term policy reform strategy.	2		100,000
	Updating of the organizational structure of INGC, INAM and DNRGH/ARAs the institutional network and DRR juridical framework.	2		100,000
Long Term	Acquisition and installation of a Dopler radar system in Beira	3	120,000,000	1,875,000
Total			**15,464,775.70**	

Implementation Arrangements

The implementation of the recovery actions for the DRR sector will be done by INGC, DNGRH and INAM for their respective components. However, INGC will be responsible for overall sector coordination to ensure the preparation and execution of sector implementation plans respond to the identified needs, addresses the existing vulnerabilities and integrate the views and expectation of all DRR sector stakeholders.

LIVELIHOODS

Sector Context

The national unemployment rate is 67.2%, where men are the majority with 68.2% and women with 66.4%, according to INE (IOF 2014/15) . Despite this apparent balance in terms of participation in the labour market, by analysing the geographic distribution it is noticed that in urban areas where the tertiary sector and the industries prevail, hence the demand for qualified workforce is higher, the gender imbalance for employment rate is even more evident (57.4% for men and 48.7% for women). Differently from the cities, in rural areas the rate of women in the labour market is approximately 2 percent higher compared to men. From this high number of peasants, as per data from IOF, equivalent to 70.8%, 58.2% are men and 82.0% are women. The reason for this situation is that most of the Mozambican population practise livelihood agriculture with high levels of informality and women are the majority compared to men. This fact contributes to higher vulnerability and poverty in rural areas where there is a low number of formal jobs, which should be a secure source of income, thus allowing a decrease in poverty levels.

The groups that are more vulnerable and most affected by the unemployment rate are youth and women. According to INE (2016) the estimated national unemployment rate is 20.7%. However, this rate is higher for the young population (15-35) around 27.4%; and for women the rate is 1 to 3 percent higher compared to men, depending on the geographic location, education and age. In times of crisis (financial, natural disasters and others) the probability of women or youth being dismissed or moving to self-employment or the informal sector is higher compared to men.

Concurrently with the high rate of underemployment and unemployment among youth, another feature of the Mozambican labour market is the informality. A significant number of Mozambican households have their source of income based on the informal economy through self-employment activities (around 40.0% in urban areas and 80.0% in rural areas). Informality increases vulnerability for individuals and their family. Despite the implementation of a social security initiative to cover self-employees, by the National Institute of Social Security, the social coverage is still low, the informal employees work in poor conditions prone to abuse, assault, sexual harassement and violence, particularly women, exploitation of minors and child labour, excessive working hours, thus hindering them from a balanced relationship between social and working life. Another element is that most of the salaries are below the national average.

The salary is one of the important elements in the country's labour market, since this can determine the level of participation of a certain group in the labour market as a result of the social dialogue between Government, Employers and Employees. According to MITESS, the minimum salary has been increasing in the last years. The sector of industrial and semi-industrial fishery recorded the highest increase (21%), whereas the hotel industry increased only 5.5%. However, it is worth highlighting that despite the increase of the minimum salary, the level of inflation in the economy swallows the increase and contributes to the low level of consumption by the families, therefore leaving them vulnerable. It is also worth highlighting that the financial sector pays the highest salaries (Banks and Insurance Companies with MZM10,400.00 and Microfinance with MZM9,240.00), whereas agriculture, with the highest number of employees in the country, pays only MZM3,642.00. This is an evidence that the labour market not always promotes inclusion and equity, since the sectors with higher potential to drive inclusive economic transformation, such as agruculture, are not attractive in terms of salaries.

It is worth highlighting that the central region of the country affected by IDAI hosts some of the provinces with higher levels of poverty, with vulnerability being related to the high underemployment and unemployment in such areas compared to the national average. Therefore there is need for additional support to mitigate the impact of the cyclone on these populations. In economic terms, the centre region contributes 30% of the national GDP, with Sofala province having the highest regional contribution estimated at 36% and contributes considerably to the local workforce.

The Effects on Livelihoods

Sofala Province

> Cyclone IDAI affected mainly the centre region of the country and particularly Sofala province, with considerable damage to infrastructure. Likewise, the cyclone affected economic activity as it damaged production infrastructure and this impacted the labour market. Regarding the labour market, Sofala province had an unemployment rate of 68.4% (69.5% men and 67.5% women). The distribution per sector is as follows:

Agriculture: the agricultural sector has a significant contribution to the provincial economy employing about 120,000 people in the informal sector and many others in livelihood agriculture, partly influenced by the sugar companies that employ a large number of people. According to the baseline data used for this report, employees in the sugar companies earn a daily income of MZM138.33 (equivalent to USD2.16). In the informal sector or livelihood agriculture estimates indicate that "there was a loss of more than 240,000 hectares of growing field and cattle and goats in Dondo, Buzi, Nhamatanda, Muanza districts and Beira city, belonging to 92,000 households, where the most affected crops were maize, sorghum and sesame.

Industry: Beira city is the place hosting the largest number of industries in Sofala province, employing about 437.000 employees in various areas of activity. A post-cyclone survey indicates that there were losses between USD79.2 million, USD20.1 million and USD5.9 millions for large, medium and small enterprises[126], respectively.

Trade: The trade sector (formal and informal) is among those that most contributes to the economy of the province as well as to the generation of jobs, for exemple in Beira city, in Buzi and Nhamatanda districts, the most impacted by floods. They employ 3125, 2287 and 220 thousand employees respectively.

Manica Province

Manica province, with a contribution of 12.4% to the GDP of the region, was the second most affected province by the cyclone. Taking into account the base year, the province had an employment rate of 67.0% (67.9% men and 66.2% women). For productive sectors, the scenario is as follows:

Agriculture: Combined with poultry and fishery, the agricultural sector represents 73.8% of the job posts in the province employing about 200,000 employees. It is worth highlighting that in this province the sector employs a considerable number in the agribusiness sector.

Industry: Regarding the concentration of industrial units, Chimoio city and Manica district used to be in the leading position employing about 262,000 and 53,000 people respectively. It is estimated that the baking industry recorded the highest losses, about USD581.4 thousand.

126 Same as above

Trade: The trade sector (formal and informal) is among those that most contributed to the economy of the province as well as to the generation of jobs, especially in Chimoio and Manica and in other districts, in the agribusiness sector.

Zambézia Province

Zambézia was the third province most impacted by the cyclone. This province contributes 30.2% to the GDP of the region, after Sofala province. The employment rate is 74.6% (71.7% men and 77.4% women) and the unemployment rate is 13.1% (13.8% men and 12.6% women).

Agriculture: The affected districts are predominantly agricultural. The cyclone destroyed irrigation systems in Mopeia, Morrumbala, Namacurra, Nicoadala and Maganja da Costa districts. There were also destroyed antiseptic tanks, treatment corridors, stockyards, wells and water drinkers in Morrumbala and Molumbo districts. Moreover, there was a flooded area of 200.4 thousand hectares with various crops, where 71.6 hectares were lost, thus making a loss of 295.4 thousand tons of crops, meaning that a large number of households lost their livelihoods[127].

Industry: the area of higher industrial concentration was not affected.

Trade: The trade sector (formal and informal) was affected by the destruction of 96 business stores and 56 precarious selling stalls, with a loss of USD 42538.6[128].

Tete Province

Compared to other provinces, Tete was the less impacted by the cyclone. The contribution to the region GDP is 21.4%, the employment rate is 74.6% (71.7% men and 77.4% women) and the unemployment rate is 20.1% (17.9% men and 22.0% women).

Agriculture: Likewise Tete city, Changara, Doa and Mutara districts were affected and these districts are predominantly agricultural. According to the baseline data for this report, the employees in this sector work in average 260 hours to earn a daily income of MZM138.33 (equivalent to USD2.16).

Industry: The area with high concentration of industries impacted by the cyclone was Tete city.

Trade: The trade sector (formal and informal) is among those that most contributes to the economy of the province as well as to the generation of jobs, especially in Tete city and other districts with agribusiness.

INCOME LOSS

During the period of business interruption following the cyclone (approximately 30 days average), it is estimated that the income lost by workers in the formal and informal sectors was USD$39 million as summarized in the table below[129].

127 Castelo, V, Dique S et Magaia R, 2018, Impacto f the IDAI Tropical Cyclone on Enterprises and Recovery Intervention Measures, CTA – Confederation of the Trade Associations of Mozambique, Maputo, Mozambique

128 Same as above

129 The rate of women/men in the informal sector was approximately the same as that of peasant women among the total population of peasants (58% women, 42% men). Data from MITESS were used for formal sector employment. The rate of self-employment was calculated using data from IOF (2004) (78% of the households are self-employed). The rate of the informal sector was projected based on the data from the Informal Sector Survey (2004). See the tables attached. The figures

The impact of IDAI on the labour market was mostly felt by the most vulnerable people with lower opportunities of formal and permanent jobs, which are mainly women and youth. About 220,000 active youth were directly affected by the cyclone, resulting in an interruption or loss of their source of income. A large number of them are young women in reproductive age (more than 131,000).

The impact of the cyclone on the income of young women places them in a position of vulnerability to early marriage, early pregnancy and gender-based violence. These are security risks to their human rights and the economic potential of young women and their households. The increase in their dependency may worsen the condition of vulnerability as a result of the cyclone, thus reducing the chances for a large number of households to come out of poverty. This results from the fact that such groups represent the majority in the informal sector of the economy and livelihood agriculture, resulting from the lack of alternatives and the low capacity of the country and the affected regions to offer quality jobs for the largest number of people.

Table 72: Estimate of income loss by workers

Income Loss Amount (Meticais)	Total	Men	Women
Formal Sector	466.204.648	242.982.720	223.221.928
Informal Sector	2.068.984.201	1.077.475.032	991.509.169
Total	2.535.188.848	1.320.457.752	1.214.731.097
Income Loss Amount (USD)	**Total**	**Men**	**Women**
Formal Sector	7.172.379	3.738.196	3.434.184
Informal Sector	31.830.526	16.576.539	15.253.987
Total	**39.002.905**	**20.314.735**	**18.688.171**

Note: Economic sectors include agriculture and fishery, trade, industry, construction, tourism and self-employment.

To ensure implementation of the Employment Policy to improve the employment condition in the country, the Ministry of Labour, Employment and Social Security has Professional Training Centres and Employment Centres all over the country. A significant number of the centres were hit by Cyclone IDAI, particularly in Beira, Dondo and Buzi districts in Sofala province and in Sussundenga district in Manica province. The damages had a negative impact on the services and hindered employment promotion in the country. The table below presents the damage, loss and recovery needs. The recovery needs presented reflect what is required to recover the services, to promote employment, and contribute to poverty reduction.

on the table are inaccurate since there were possible losses other than those specified in the days with no trade activity and one month in the growing field.

Table 73: Summary of damage, loss and recovery needs

Province	Loss and Needs	Damage	Loss	Needs	Needs
		Local currency	Local currency	Local currency	USD
		Public	Public	Public	Public
Sofala	IFPELAC Professional Training Centre in Beira	Roof	Equipment	883,011.60	14,016.06
	Two Nests of IFPELAC in Beira	Roof		394,720.00	6,265.40
	INEP Employment Centre in Beira	Roof	Equipment	2,500,000.00	39,682.54
	Business Nest of INEP in Beira	Roof and Painting		549,955.00	8,729.44
	INEP Employment Centre in Buzi	Painting	Equipment	900,000.00	14,285.71
	IFPELAC Training Centre in Buzi	Painting	Wall and Equipment	1,500,000.00	23,809.52
Manica	Employment and Professional Training Centre in Sussundenga and equipment from IFPELAC	Roof and Painting	Equipment	315,900.00	5,014.28
Total				**6,160,575.00**	**97,786.89**

Recovery Needs

Despite the severe effects of the cyclone, this can be seen as an opportunity to create more immediate job opportunities taking into account the urgent need to recover from the damages caused by the cyclone. The reconstruction process should be carried out through a combination of labour market active and passive policies combined with macroeconomic measures. Reconstruction of the impacted areas requires identification and implementation of short term and medium term measures to create employment for the affected population, and also support to small and medium enterprises so as to increase their productivity and therefore create job opportunities. To change this scenario in the long run, investments should be mostly directed to sectors with the capacity to employ a large number of youth and women, such as agriculture, and to seeking new markets.

To promote the generation of more and better jobs in the impacted areas (short, medium and long term) there is need for combined actions in terms of workforce demand and supply. Hence, there is need to stimulate the implementation of labour market active and passive policies combined with macroeconomic policies that stimulate the development of the sectors with activities to employ a large number of workforce, particularly female and youth. Some of the alternatives are as follows:

ACTIVE POLICIES:

1) **Develop a workforce intensive reconstruction programme for the youth among active population who lost their jobs or source of income:** the programme would be coordinated by the Ministry of Public Works and Housing (MOPH) with support of the Ministry of Labour and Social Security (MITESS) and the Ministry of Youth and Sports (MJD). **This programme has been included in the sector reconstruction needs (USD52,959,627 covering 76,847 youth). This would take place in coordination with the physical reconstruction strategy.**

2) **Professional Training:** there is need to train people in professions mostly needed for reconstruction such as brick layers and others. Thus, the training centres have to adapt their modules for short term to benefit the largest number of people
3) **Development of micro and small enterprises:** Support the various sectors of the economy with technical advisory for enterprise development. Provide intensive funding to some pilot initiatives.
4) **Expand/disseminate the public employment services:** The employment centres must be in a leading position in terms of information about job opportunities as well as professional training for reconstruction.

PASSIVE POLICIES:

- Fund transfer programes to the most vulnerable populations: provide social aid to the most vulnerable groups who are not able to work for various reasons.

MACROECONOMIC POLICIES:

- **Tax exemption for sectors with capacity to generate jobs, particularly for women and youth.** Taking into account the capacity of agriculture and the construction sector to generate jobs, there is need to consider full exemption of duties and other fees upon import of construction materials and agricultural inputs.
- **Subsidized interest rate and reduction of Exchange rate.** There is need to create short term subsidized interest rates, reduction of exchange rate to cover import of construction materials and agricultural inputs.

The calculation of the needs of the intensive reconstruction programme in terms of workforce is detailed on the table below.

There should be higher coverage in the districts where the impact of the cyclone was stronger (50% of the youth in Sofala province) and lower coverage where the impact was minor (10% of the youth in Tete and Zambézia provinces). The programme duration is 12 months, focusing on the initial stage of the reconstruction, in workforce intensive activities such as handmade production of bricks and blocks, clearing of roads, reconstruction of rural roads and small infrastructures impacted such as water supply and sanitation systems.

Table 74: Recovery needs of the intensive reconstruction programme in terms of workforce

Impacted Districts	Impact of the Cyclone	Number of active youth impacted in the informal sector	Coverage Rate	Number of Participants in the Working Programme	Number of working months	Salary (MZN) (50% of the minimum salary of the construction sector	Cost (MZN)	Cost (USD)
Sofala Province	**High**	**107556**	**50%**	**53778**	**12**	**3733**	**2408947858**	**37060736**
Beira	High	22224	50%	11112	12	3733	497747353	7657652
Buzi	High	14913	50%	7456	12	3733	334005798	5138551
Caia	High	0	50%		12	3733		
Chemba	High	0	50%		12	3733		
Cheringoma	High	1841	50%	920	12	3733	41226805	634259
Chibabava	High	9860	50%	4930	12	3733	220828170	3397356
Dondo	High	14557	50%	7279	12	3733	326035113	5015925
Gorongosa	High	14499	50%	7249	12	3733	324735184	4995926

Machanga	High	0	50%		12	3733		
Maringue	High	275	50%	137	12	3733	6152490	94654
Marromeu	High	2272	50%	1136	12	3733	50892224	782957
Muanza	High	3237	50%	1619	12	3733	72502610	1115425
Nhamatanda	High	23879	50%	11940	12	3733	534822110	8228032
Manica Province	**Medium**	**78770**	**25%**	**19692**	**12**	**3733**	**882108350**	**13570898**
Chimoio	Medium	18540	25%	4635	12	3733	207622873	3194198
Barue	Medium	11396	25%	2849	12	3733	127624198	1963449
Gondola	Medium	14518	25%	3629	12	3733	162575802	2501166
Guro	Medium	0	25%		12	3733		
Macate	Medium	6121	25%	1530	12	3733	68550439	1054622
Machaze	Medium	0	25%		12	3733		
Macossa	Medium	1420	25%	355	12	3733	15901925	244645
Manica	Medium	16026	25%	4007	12	3733	179468728	2761057
Mossurize	Medium	0	25%		12	3733		
Sussundenga	Medium	1912	25%	478	12	3733	21406126	329325
Tambara	Medium	0	25%		12	3733		
Vanduzi	Medium	8837	25%	2209	12	3733	98958259	1522435
Tete Province	**Low**	**13288**	**10%**	**1329**	**12**	**3733**	**59521743**	**915719**
Tete City	Low	3574	10%	357	12	3733	16010706	246319
Changara	Low	751	10%	75	12	3733	3363644	51748
Doa	Low	4111	10%	411	12	3733	18415801	283320
Mutarara	Low	4851	10%	485	12	3733	21731592	334332
Zambezia Province	**Low**	**20479**	**10%**	**2048**	**12**	**3733**	**91732788**	**1411274**
Milange	Low	3541	10%	354	12	3733	15863063	244047
Morrumbala	Low	4348	10%	435	12	3733	19477857	299659
Maganja da Costa	Low	4198	10%	420	12	3733	18802491	289269
Chinde	Low	1954	10%	195	12	3733	8750992	134631
Inhassunge	Low	524	10%	52	12	3733	2347934	36122
Nicoadala	Low	1033	10%	103	12	3733	4628576	71209
Namacurra	Low	1385	10%	138	12	3733	6202155	95418
Mocuba	Low	2417	10%	242	12	3733	10827317	166574
Lugela	Low	1.79	10%	108	12	3733	4832404	74345
Total 4 Provinces		**220093**	**1**	**76847**			**3442310738**	**52958627**

These recovery activities can be implemented in phases, with priority recovery interventions implemented during the first 12 months. The following table describes the measures that may be implemented during the short, medium and long-term recovery phases.

RECOVERY

RECOVERY NEEDS

Recovery Needs in the 4 Affected Provinces

Recovery needs estimated by the PDNA amount to USD 2.9 billion which reflect the necessary interventions to repair or rebuild infrastructure and physical assets with improved measures in line with the principles of building back better and disaster risk reduction to ensure future resilience. These needs also include the additional costs that need to be incurred to recover the production of goods and services and access to goods and services.

Table 76: Total Recovery Needs

Sectors	Needs
TOTAL	**2,944.8**
Productive	380.4
Agriculture	203.9
Fishery	15.5
Ind & Com	161.1
Social	1,373.1
Housing	687.6
Education	122.3
Health	202.4
Food Security	353.7
Culture & Sports	7.0
Infrastructure	939.7
Transport	598.2
Energy	201.4
Telecom	33.9
Agua/San	106.2
Cross-Cutting Issues	251.5
Gender	5.3
Environment	106.3
Governance	18.4
DRR	15.5
Livelihoods	57.8
Social Protection	48.3

Further, the identified needs include costs to maintain governance and decision-making processes as well as to reduce vulnerabilities and risk, which is incorporated within each sector. Therefore, sectors have included capacity building, technical studies required for recovery interventions, and costs to ensure social protection and security to the affected population.

The largest needs appear in the housing sector with a total amount of USD 688 million, followed by transport with USD USD 598 million and food security with USD 354 million. The productive sectors would require USD 380.4 million for full recovery from IDAI, and all the crosscutting issues require USD 252 million.

In a first attempt to prioritize and sequence recovery interventions, sector teams have provided also cost estimates for a timeframe of five years, considering interventions that should take place in the short, medium and long-term, including a budget for each phase, as indicated in Table 7.

Note that not all sectors have considered the full range of needs for the proposed prioritization. Also note that it is difficult for countries to undertake the full range of recovery needs identified through the PDNA. It would be highly recommended that the country undertake a detailed planning exercise to formulate a concrete and realistic recovery program, particularly after the donor/pledging conference, where funds for recovery would be better identified.

Fig 26: Distribution of Recovery Needs by Individual Sector

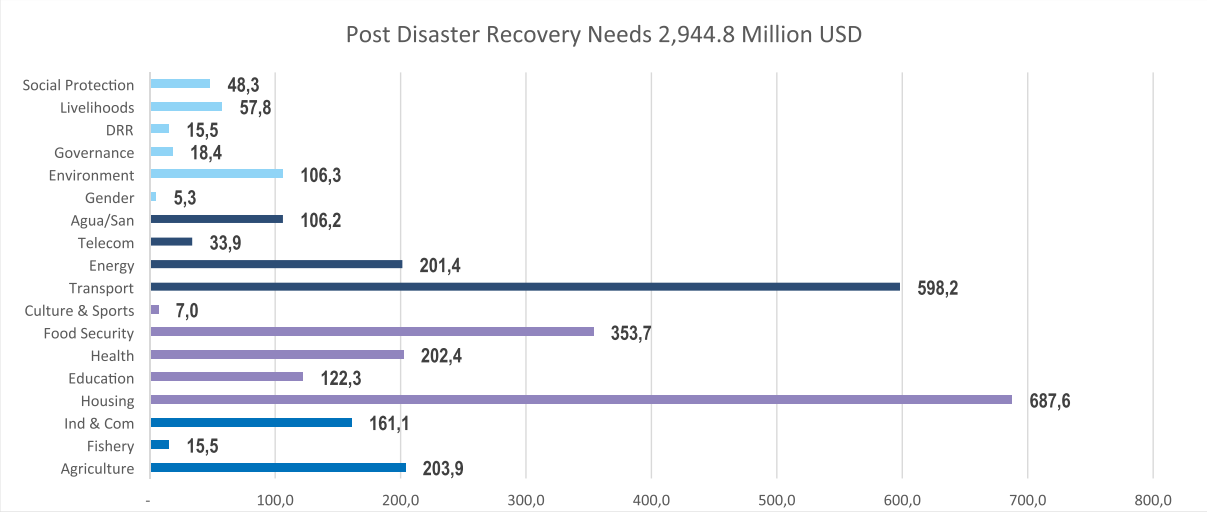


Table 77: Prioritized and Sequenced Recovery Needs by Sector

SECTOR	SHORT TERM	MEDIUM TERM	LONG TERM	TOTAL
Agriculture	116.7	64.1	23.1	203.9
Fisheries	10.1	5.4	-	15.5
Industry/Commerce	161.1	-	-	161.1
Housing	663.2	4.5	20.3	687.9
Education	115.7	7.0	4.2	126.8
Health	117.0	51.2	34.2	202.4
Culture	3.7	0.2	0.0	3.9
Sports	4.7	-	-	4.7
Water and sanitation	19.0	5.2	82.0	106.2
Transport	8.0	73.0	466.9	547.9
Telecom.	33.9	-	-	33.9
Energy	62.5	29.1	6.3	97.9
Gender	4.1	0.7	-	4.8
Environment	88.4	7.6	10.3	106.3
DRR	7.6	7.6	-	15.2
Livelihoods	53.6	4.0	0.1	57.7
Food security	-	-	-	353.7
Governance	-	-	-	18.4
Social protection	-	-	-	48.3
TOTAL	**1,469.3**	**259.6**	**647.2**	**2,796.6**

Short-term recovery refers to the interventions required to address the current crisis and prevent a further deterioration of conditions, particularly for the population affected, over the course of 2019-2020. It includes the rehabilitation of crop and livestock production, water sources to improve water availability for people and livestock, health and nutrition centers, schools, and introducing income-generation activities to support people's self-recovery. During this first phase, planning will be necessary for the reconstruction works that will take place in the next phase, such as land-use planning, the design of houses that use resilient materials and techniques, etc.

Medium-term recovery refers to the subsequent 2 years of implementation, approximately lasting 2 to 4 years. During this phase, following the necessary planning and consultation processes, it will be possible to begin the physical reconstruction of infrastructure such as houses, schools and health centers, roads, bridges, government offices, telecommunication and other damaged infrastructure.

The long-term recovery process is the final phase of implementation lasting 5 years or longer. This includes measures to reduce the risk associated with cyclones and floods, for example through the better management of natural resources such as reforestation, the introduction of water harvesting techniques, of farming technologies and practices that are more sustainable (e.g. flood-resistant crop varieties), alternative livelihoods and income-generating activities, among other measures to reduce risk and vulnerability and support adaptation in the Central Region of Mozambique. The proposed risk reduction interventions are integrated within each of the sectors as part of the proposed sectoral long-term measures, and are reflected as such in Table 7.

As Table 7 indicates, almost half of the needs are considered short-term interventions, which need to be implemented as a matter of priority, considering the country's institutional capacity and without causing imbalances in the fiscal and external sector. Modalities of implementation will be consistent with the national planning and financial institutions and are expected to be agreed with donors, guaranteeing a clear focus on addressing the disaster recovery, with full transparency and accountability and a regular monitoring and evaluation procedure reported to the public, civil society and the international partners

Recovery from cyclone IDAI will stress the country's capacity to invest and the Governments absorptive capacity as total needs identified represent around 22% of the country's GDP. The short-term needs (i.e. until 2020) would require an increase of 30% in this yearly gross capital formation.

THE RECOVERY STRATEGY

On 10th May 2019, the Cabinet for the Reconstruction of Post Cyclone IDAI (Gabinete de Reconstrução Pós-Ciclone IDAI) presented the principles and approach of the recovery program, which was previously endorsed by the Council of Ministers. The recovery and reconstruction program will be developed and implemented following the principles, approach, strategy, financial management and other arrangements outlined herein.

The Principles of Recovery

The following are the principles for the recovery and reconstruction program.

1. Follow one single Post-disaster Reconstruction Program that includes sectoral and local actions;
2. Build on international experiences with post-disaster recovery processes.
3. Ensure that new recovery investments are resilient to future disasters of the same nature and magnitude or greater;
4. Give priority to the defense of life, the rapid restoration of economic and productive activity and the social protection of vulnerable people;
5. Recovery will be in accordance with territorial planning instruments and local plans for adaptation and resilience to natural threats in rural and urban areas;
6. Ensure respect for the zoning plans of the territory, interdict high-risk zones and promote new urban centralities;
7. Improve the living conditions of peripheral neighborhoods, promote adequate street opening, drainage and sanitation;
8. Include flood dampening infrastructures, shelter platforms;
9. Encourage community participation in the reconstruction process.

Approach to Recovery & Reconstruction

- The preparation of the Program should be based on the detailed PDNA assessment of damage and loss caused by the Cyclone IDAI.
- The Central Government should lead the process of preparing the Post-Disaster Reconstruction Program (PREPOC), mobilize the necessary resources and establish an operational structure to direct and coordinate the implementation, monitoring and evaluation of the Program.
- The Program should actively involve all stakeholders, including: central ministries and institutions, provincial and district governments, local government; Cooperation Partners; Multilateral development banks; United Nations agencies; Civil society; Private Sector; Socio-professional associations; Representatives of affected communities.
- The Central Government will work in coordination with the Ministries that oversee the Public Works and Finance areas, in order to achieve quick, visible and measurable results.
- The program should build on the resilient reconstruction of long-term productive, economic and social infrastructures, preceded by in-depth studies to ensure greater resistance to disasters.

- The post-disaster reconstruction program should be based on the resilient reconstruction of infrastructures and the economic and social recovery, in the medium and long term, corresponding to 2 and 5 years, respectively.
- The Program will be implemented by entities with legal and statutory responsibility already defined
- The Program will be implemented by the relevant sectors already established in the State Administration at the national, provincial and district level and also by the autarchic governance, through their integration in the Development Plans, or their extensions. These Sectors should be endowed with the human, material and financial authority, autonomy and capacity to prepare, plan, execute, evaluate and report on the progress and results of the Program.
- The Global Management of the Program, including Financial Management, monitoring and evaluation will be the responsibility of the Central Government. To this end, the Government created the Post-Cyclone Reconstruction IDAI Office established by CM Decree.
- The IDAI Post-Cyclone Reconstruction and Recovery Office should be endowed with the authority, autonomy, and human, material and financial capacity to prepare the program, review and approve plans, monitor, evaluate, audit and report Program progress and results.

Financing and Financial Management

Based on the results of the PDNA, the Government shall indicate the strategy for financing the Recovery and Reconstruction Program. The cost and financing considerations for the GoM are as follows:

1) The contribution of the Central Government through:
   a) The reorientation of the national budget;
   b) The application of fiscal benefits to support reconstruction, including the granting of payment of Taxes and Fees by assessing the financial situation of each operator;
   c) The contribution of local governments;
   d) The contribution of the private sector;
   e) The contribution of cooperation partners, including multilateral agencies;
   f) The portion of the financing gap that donors can support.

2) On 31 May-01 June 2019, the Government is organizing a Conference with Development Partners for Post-disaster Reconstruction with the participation of Multilateral and Bilateral Cooperation or Development Partners, Civil Society and the Private Sector, in order to mobilize the necessary resources to cover the financing gap.

3) The Government, the IDAI Post-Cyclone Reconstruction Office and beneficiary entities (Municipalities, Private Sector) will hold bilateral meetings with Cooperation Partners, Private Sector and Multilateral Development Banks and influential individuals, in order to mobilize resources for the Reconstruction Program, based on the area of action and interest of each organization.

4) The Government and beneficiary entities may also negotiate with Partners and Multilateral Development Banks the allocation of part of the resources of projects currently underway or in the pipeline for the coming years for post-Cyclone recovery and reconstruction funding IDAI.

The implementation of the Program should be based on a transparent and rigorous management of the resources allocated to the Program. To this end, the Government shall ensure that:

- The contracting of works, goods and services by the Program obeys the rules of public contracting established by Decree No. 5/2016, of March 8 (which regulates the Contract of Public Works, Provision of Goods and Services to the State), or other international procedures, as appropriate;

- The use of Program resources is subject to independent annual audit.

- The Program Annual Reports and Accounts are public and should be shared with Partners and all stakeholders.

The Cabinet for the Reconstruction of Post-Cyclone IDAI

The Government of Mozambique created The Cabinet for the Reconstruction of Post Cyclone IDAI by Decree 26/2019 on April 11, 2019. With its headquarters in Beira City, the Cabinet is an entity of territorial scope and of temporary nature, but enjoys the autonomy and powers of authority and technical decision necessary for the effective and efficient performance of its functions. The Cabinet's structure is as follows:

1) It is supervised by the Minister of Public Works, Housing and Water Resources.
2) It is headed by a Director appointed by the Council of Ministers, under an articulated proposal of the Ministers who oversee the areas of public works and economics and finance.
3) It's Governing Board is made up of the Director of the Cabinet and two members who coordinate the social area and infrastructures and productive areas, to be appointed by the Minister who oversees the area of public works, by proposal of the Director of the Cabinet;
4) The Cabinet's complementary structure, organization and functioning, as well as the relationship model, will be proposed by the Office, in coordination with the Development Partners, after harmonization with the Minister of Public Works, Housing and Water Resources and Economy and Finance for subsequent approval.

The Cabinet has the following main responsibilities:

1) Elaborate the Program for Infrastructure Reconstruction and Recovery of the Social and Productive Sectors;
2) Monitor Progress and Results Achieved and conduct technical and financial audits.
3) Prepare and adopt the methodology for the evaluation of internationally accepted losses and damages;
4) Prepare the evaluation of losses and damages and
5) Mobilize resources and the Post-Cyclone Reconstruction and Recovery Program with stakeholder involvement;
6) Organize internal and international events to mobilize resources for IDAI Post-Cyclone Reconstruction and Recovery in Mozambique, in partnership with Cooperation Partners and other interested parties;
7) Monitor contracting and contract management;
8) Elaborate and submit to Government and Partners periodic progress reports including the Mid-Term and Final Evaluation of the Post-Disaster Reconstruction and Recovery Program;
9) Hire the independent annual audit of the Program and share its report with the Government, Partners and stakeholders.

THE PDNA METHODOLOGY

The PDNA undertaken in Mozambique follows the standard methodology developed by the UN System, World Bank and the European Union, which integrates a collection of analytical methods, tools and techniques developed for post-disaster assessments and recovery planning.

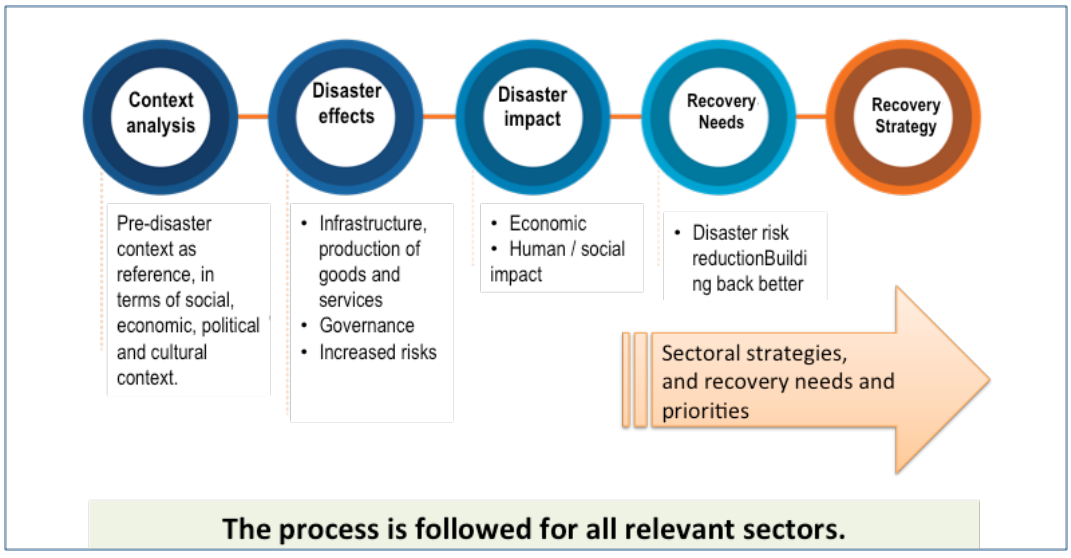
The assessment builds on primary and secondary data, which are provided by the Government of Mozambique and development partners, on interviews and field visits to affected areas.

The PDNA considered the context prior to the cyclone and floods in the four affected provinces, particularly the socio-economic, environmental, and political conditions and other factors that need to be considered to do a comparative analysis with post-disaster conditions. The effects of the cyclone on each sector were assessed in terms of damage and loss, as follows:

Damage refers to the total or partial destruction of physical assets in the disaster-affected areas. Damages occur during and immediately after the disaster and are measured in physical units (i.e., number of damaged houses, roads, crops, land, etc.). Their monetary values are expressed as the replacement costs according to prices prevailing just before the event.

Loss refers to changes in economic flows arising from the disaster. They occur until full economic recovery and reconstruction is achieved. Typical losses include the decline in output in productive sectors such as agriculture, industry and services.

Figure 27: summary of PDNA methodology



Furthermore, the PDNA assessed the overall **human impact** of the cyclone, including the projected impact on multidimensional and income poverty levels in the country, as well as the potential impact on the country's **macro economy**, particularly inflation and economic growth.

Based on the analysis of both the effects of the cyclone (damage and loss) and the impact of the disaster, the PDNA estimated the country's recovery needs and cost. **Recovery needs** include interventions that are necessary to rebuild livelihoods and infrastructure on a sector-by-sector basis, and an estimate of the cost to achieve the proposed recovery. Recovery needs are estimated for the short, medium and long-term process. A preliminary strategy for recovery

was discussed with the GoM which will form the basis of a subsequent recovery framework and action plan with prioritized interventions.

Recovery includes: the reconstruction needs estimated as the requirements for financing reconstruction, replacement or repair of the physical assets that were damaged or destroyed by the disaster; and recovery needs estimated on the basis of the financial resources required for the rehabilitation of basic services, reactivation of productive activities, or immediate reactivation of personal or household income. Recovery needs also include capacity building and operational costs for service delivery that are necessary for the implementation of interventions. Costing for recovery needs include differentials for building back better to consider quality improvements and risk reduction measures to be implemented to increase resilience against future disasters.

ANNEXES

Annex 1:
Beira Municipal Recovery and Resilience Plan:

A Roadmap to Building Beira Back Better -Executive Summary

The Beira Recovery and Resilience Plan has been prepared by the Municipality of Beira in the aftermath of cyclone Idai that hit Beira on 14 March 2019. It addresses the immediate recovery needs, applying principles of 'building back better' and 'disaster risk reduction', with a wide range of strategies and plans that aim to make Beira a resilient city.

It should be noted that this Plan has been brought in line, as much as possible, with the national Post Disaster Needs Assessment methodology. It seeks to address a fuller range of recovery and resilience interventions. The Plan focuses on those sectors that are under the responsibility of the Municipality of Beira.

From the table below it can be seen that by far the largest damages and losses have been sustained by people who have seen destruction of their houses, and to businesses. The Beira Municipality has very few resources that might be employed to address the enormous needs that result from this. It appeals to the national government and the international com- munity to focus on the needs of people and of businesses, because they are vital for the recovery of the city.

The climate change and disaster resilience strategy of the Municipality focuses on key areas of infrastructure. The plans for these areas of infrastructure are summarized below.

Coastal protection is the most vital of all. Cyclone Idai hit Beira at neap tide. Had it reached Beira during spring tide, sea water levels would have been nearly two meters higher and the flooding of the city from the sea would have been extensive. The coastal protection of Beira has to be brought to a minimum acceptable level for the city to have a future. The existing system of breakwaters needs to be upgraded, sand nourishment to the beach is necessary in the short term, and the Praia Nova area requires urgent attention. The total cost of the minimum protection works amounts to 91 million USD.

Drainage is equally important. The reconstructed primary drainage system in part of the city worked well during the cyclone and other storms. The primary system in other parts of the city also requires rehabilitation. Only a completely rehabilitated drainage system will minimize the risk of inundation in the city. Expansion of the primary system and construction of a large retention basin in the Rio Maria area are part of the priority drainage project. Next to the need for the completion of the primary system, attention is needed for the secondary and tertiary system to evacuate water faster from the areas where people live. A total cost of 193 million USD for the first years has been calculated.

Sewage is a sector that requires urgent attention, both to rehabilitate the existing system and expand it into unserved areas of the city. No city can function properly and sustainably without a sewage system and combined with high water tables, many citizens of Beira experience unhygienic conditions in their houses and neighborhoods. The total cost for rehabilitation and expansion would come to 49 million USD.

Solid waste

The weaknesses of the solid waste management of Beira was exposed by the cyclone. Solid waste, in enormous quantities, was visible throughout the city. The weaknesses are in the whole chain, including, notably, a lack of equipment. The total need to structurally improve solid waste management would be 28 million USD, of which the largest part would be invested in a proper sanitary land ll.

Roads infrastructure

The damage to roads has been extensive by the cyclone, particularly along the coast where the road has been destroyed by seawaters, and by the heavy equipment used to remove fallen trees and waste. In other areas there is an urgent need not only to restore cyclone damage but to build resilient roads that can stand heavy rainfall without deteriorating and that can be used as evacuation routes during future flooding. Strong roads will improve, for instance, the ability to reach the waste deposit site. The total needs amount to 37 million USD.

Housing and settlements

Beira's existing housing stock was badly affected by cyclone Idai with approximately 70% of houses destroyed partially (63.506 units) or totally (23.833 units). The biggest destruction occurred in the poorest neighborhoods, increasing an already critical social, economic and environmental vulnerability. On top of huge damages for most households, the cyclone caused major losses, making the self-recovery processes even more difficult for the poorer victims due to their lack of money. An estimated 275 million dollars is needed to develop an efficient and inclusive implementation strategy, to ensure an integrated approach to in- crease resilience, not only for better-built homes but also at settlement scale, through a strong partnership between

communities, humanitarian and development partners, private sector, with the Municipality in a key coordination role.

Municipal buildings and services

176 buildings owned by the municipality are damaged or severely damaged by cyclone Idai, and most of them are critical municipal infrastructures. Due to rainfall, lots of equipment and municipal furniture suffered damage, and much had to be discarded. The municipal functionality needs to be restored as quickly as possible by repairing and reconstructing its critical infrastructure in a resilient way (BBB) and by replacing lost and damaged equipment and furniture. This will involve an amount of 12 million USD.

Urban extensions

The Beira Master plan 2035 which was approved by Beira Municipality in 2014 provides the framework for the resilient development of the city. The Maraza Residential Area and the Munhava Industrial and Commercial Park, in combination with the new Port Access Road. Are key developmental projects which can contribute to release pressure from existing areas, including those that were affected by the cyclone, and can create space for new developments.

For the implementation of the Maraza and Munhava urban developments the SDU Beira – urban development corporation has been created by the Beira Municipality in November of 2018, in order to prepare and implement these area developments.

Annex 2: List of Contributors

	Sector	GoM Lead	Lead Name	Lead Name	Other Team Members
Productive	Agriculture and Food Security	MASA	Sergio Castigo Sambo Anacleta Botao Tito	Matthias Mollet – EU consultant Shakib Mbabaali – AfDB consultant	Vanda Castelo (CTA) David Obongo (FAO) Yvonne Forsen (WFP) Felicidade Panguene (FAO) Raul Cumba (WFP) Daniela Cuellar (WFP) Giulia Zingaro (Italian Cooperation)
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Report			Report Writer Design and Layout	Monica Trujillo – UNDP consultant Mauricio Guerron – UNDP consultant	
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Annex 3
3.1 Assessment of Cyclone IDAI in Inhambane

Introduction

At the request of the Government of Mozambique, a rapid assessment was done for the province of Inhambane, which was also affected in some districts by the passage of Cyclone Idai, although it was limited to a small portion of the province's population. The sectors that were assessed in the province are housing, health and social protection, and fisheries based on preliminary data available at the time of the assessment. This annex presents the assessment findings for Inhambane.

Table 1: Population affected in Inhambane by Cyclone IDAI

Total Population (2017)	1 488 676
Affected population by Idai (2019)	422
% of total	2,8%
Affected families	110

The effects on Inhambane

Table 2 summarizes the total damage and loss identified for the province of Inhambane based on the information available. It is estimated that the total damage is USD$893,505 and losses USD$95,628.

Table 2: Total damage and loss in Inhambane by sector (Meticais)

Sector	Damage		Losses	
	public	private	public	private
Agriculture	ND	ND	ND	ND
Fisheries	-	5 434 975	-	5 870 000
Housing	ND	20 767 833	-	250 166
Education	ND	ND	ND	ND
Health	30 981 523	-	-	ND
Transport	ND	ND	ND	ND
Energy	ND	ND	ND	ND
Cross cutting	ND	ND	ND	ND
Other	ND	ND	ND	ND
TOTAL (MTZ)	30 981 523	26 202 808	-	6 120 166º
TOTAL USD	484 086	409 419	-	95 628

A breakdown of damage and loss for each sector assessed (housing, health and social protection, and fisheries) is presented in the following tables.

Table 3: Damage and loss in Housing

	Conventional	Mixed	Traditional
Damage Estimate to Infrastructure and Physical Assets			
a) Houses fully destroyed			
Number of units	25	37	3
Average replacement cost, US$	7 500,00	1 750,00	400,00
Sub-total Damage US$	186 480,00	64 988,00	1 302,40
b) Houses partially destroyed			
Number of units	3	48	9
Average repair cost, US$	1 500,00	350,00	$80,00
Sub-total Damage US$	5 085,21	16 800,00	683,52
c) Flooded Houses 4			
TOTAL US$	191 565,21	81 788,00	1 985,92
c) Household goods 5			
No of units fully destroyed	25	37	3
Household goods in fully destroyed units US$	1000	500	50
Sub Total US$	24 864,00	18 568,00	162,80
N of units partially destroyed	3	48	9
Household goods in part. destroyed units US$	200	100	10
Sub Total US$	678,03	800,00	85,44
	25 542,03	23 368,00	248,24
Total Damage			**324 497,40**
Domestic livelihood losses			1 004,20
Loss of rental income by home owners			371,10
Additional rental cost for those displaced by housing damage			256,72
Cost of temporary relocation (temporary shelter and basic kits for relocated families)			2 276,82
Total losses			**3 908,84**

Table 4: Damage and loss in health and social protection

Damage of health facilities						
District	**Type of Facility***	**Partial damage**	**Cost partial damage (USD)**	**Cost damage to equipment and furniture (USD)**	**Cost damage to supplies (USD)**	**Total damage (USD)**
Primary	Health post	3	403 405,24	53 787,37	26 893,68	484 086,29

Table 5: Estimated additional costs for facilities to building back better in the health sector

Costs for BBB facilities	Total costs BBB needs	Total reconstruction needs
145 226	145 226	629 312

Table 6: Damage and loss in fisheries

	Damage		Loss	
	Local Currency (MZN)		Local Currency (MZN)	
	Public	Private	Public	Private
Fishery / aquaculture	0	5 434 975		
Total Fisheries	0	5 434 975		
Administrative infrastructures				
Inhambane	0	0		
Total admin. Infrastructures.	0	0		
Total damages	-	5 434 975		
Fishery / aquaculture			0	5 870 000
Total Fisheries			0	5 870 000
Administrative infrastructures				
Inhambane			0	0
Total admin. Infrastructures.			0	0
Total losses			0	5 870 000

Recovery needs

The total cost of recovery for the Province of Inhambane is estimated to be USD$788,269 or 77,875,637 MTZ. Table 7 presents a summary of recovery needs by sector.

Table 7: Total recovery needs in Inhambane by sector

Sector	Needs	Short-term	Medium-term
Agriculture			
Fisheries	10 173 216	7 085 966	3 087 250
Housing	27 426 442	ND	ND
Education	ND	ND	ND
Health	40 275 979	ND	ND
Transport	ND	ND	ND
Energy	ND	ND	ND
Cross cutting	ND	ND	ND
Other	ND	ND	ND
TOTAL (MTZ)	77 875 637	7 085 966	3 087 250
TOTAL USD	788 269	110 718	48 238

Table 8: Recovery needs in housing, including disaster risk reduction to build back better

	Type of housing unit		
A) Physical interventions in fully destroyed houses	**Conventional 1**	**Mixed 2**	**Traditional 3**
Temporary reparation in destroyed houses (precarious)			
Number of kits	25	37	3
Unit value, US$	150	150	150
Sub-total US$	3 729,60	5 570,40	488,40
RECONSTRUCTION			
a2) Higher unit value of house quality improvement (including mixed houses for resettled households -where I count the one I don't need to rebuild and resettle)			
Number of units	25	37	3
Unit value, US$ (incl +15-20%-30% quality improve)	12 420,00	100,00	572,00
Sub-total US$	308 810,88	77 985,60	1 862,43
		9 788,40	398 447,31
		388 658,91	
REPARATION			
	Type of housing unit		
B) Physical interventions in partially destroyed houses	**Conventional 1**	**Mixed 2**	**Traditional 3**
b1) Temporary reparation in destroyed houses (precarious)			
Number of units	191565	81788	1986
Unit value, US$ (10%)	150	150	150
Sub-total US$	28 734 781,50	12 268 200,00	297 888,00
RECONSTRUCTION			
b2) Rehabilitation with quality improvement for increased disaster resistance			
Number of rehabilitation intervention	3	48	9
Unit value, US$ (incl +10% quality improve)	1 575,00	373,33	88,00
Sub-total US$	5339,47	17920,00	751,87
RESILIENCE			
C) Structural retrofitting for increased disaster resistance			
No of units	3	3	3
Unit value, US$ (incl +5 - 10 - 20% with resilience quality	1 575,00	367,50	84,00
Sub-total US$	4 725,00	1 102,50	252,00
TOTAL			**30 090,84**

Table 9: Recovery needs in fisheries

Recovery needs	Interventions	Number	Target of Intervention (HHs, Ha, etc.)	Total Value (MET)	Value short term (MET)	Value medium term (MET)
	Provision of fingerling for fish production	62 500	units	1 500 000	1 500 000	
	Rehabilitate/ reconstruction of cages	25	units to 150 sqm	2 531 250		2 531 250
	Distribution of the pond stocking kits (feed, fertilizer, etc.)	13	fishpond owners	156 000	0	156 000
	Replacement of fully damaged canoe	75	units	3 071 216	3 071 216	
	Replacement of out-board engines	8	units	1 026 000	1 026 000	
	Replacement of fiber-glass boats	7	units	708 750	708 750	
Sub-Total (MET)				8 993 216	6 305 966	2 687 250
Reinforcement of the governance and rehabilitation of administrative infrastructures	Capacity building of fishery point officers and administration staff at district and provincial level			60 000	60 000	
Sub-Total (MET)				60 000	60 000	0
Reduce the vulnerability and risks to disasters	Capacity building in disaster and climate risk preparedness for government institutions staff			120 000	120 000	
	Capacity building in disaster and climate risk preparedness for fishing communities			600 000	600 000	
	Support in the development and operationalization of fishing community strategies for building resilience			400 000		400 000
Sub-Total (MET)				1 120 000	720 000	400 000
Total MET				**10 173 216**	**7 085 966**	**3 087 250**
Total US$				**158 957**	**110 718**	**48 238**

3.2 Cyclone Kenneth Post Disaster Needs Assessment

Introduction

Six weeks following Cyclone IDAI, Mozambique was struck by a second cyclone, Kenneth, on the evening of 25 April 2019, causing widespread damage particularly in the provinces of Cabo Delgado and Nampula. At the request of the Government of Mozambique (GoM), a partial, preliminary estimate was made of the effects caused by Kenneth in the provinces of Cabo Delgado and Nampula, although limited to some sectors based only on partial information. It must be indicated that the social sector (housing, education, health, and social protection), was not quantified nor included in this annex.[131]

Tropical Cyclone Kenneth made landfall in Mozambique between the districts of Macomia and Mocimboa da Praia in the province of Cabo Delgado. The cyclone occurred in an area where no tropical cyclone had been observed since the satellite era. It made landfall as a Category 4 cyclone, with the eye of the storm hitting Ibo, Quissanga and Macomia districts. Ibo district is composed of three islands (Matemo, Ibo and Quirimba). Cyclone Kenneth came just six weeks following Cyclone IDAI. There is no record of two storms of such intensity striking Mozambique in the same season, according to the World Meteorological Organization.

More than 570 mm of rain has been recorded since 25 April in Pemba, in the province of Cabo Delgado. Up to 50mm of rain per day fell in many areas, while some localities received more than 100mm per day. As the cyclone came at the end of the rainy season, river levels were already high, and several rivers increased beyond the severe alert threshold after landfall, with peak flows causing flash flooding and landslides. The outer smaller islands were severely struck by Kenneth's force causing major destruction on their precarious infrastructure.

A significant number of crops (rice, beans, maize, cassava) were lost. While some people had managed to harvest some small amounts of food before the cyclone, most was damaged, destroyed or lost during the cyclone due to winds and rains. The majority of fishing boats and fishing equipment were lost or partially damaged as well. There was also damage to water, sanitation and health facilities in multiple locations. Some women were seen fishing – mainly with mosquito nets – to subsist after the cyclone.

In some of the Kenneth affected areas in Cabo Delgado and Nampula, food security outcomes are expected to worsen from what was previously anticipated. In Cabo Delgado, stressed (IPC Phase 2) outcomes were previously projected to continue in some coastal areas, prior to cyclone Kenneth. However, after Kenneth the projected food security outcomes are expected to be the same or worse than previously anticipated in affected areas.[132]

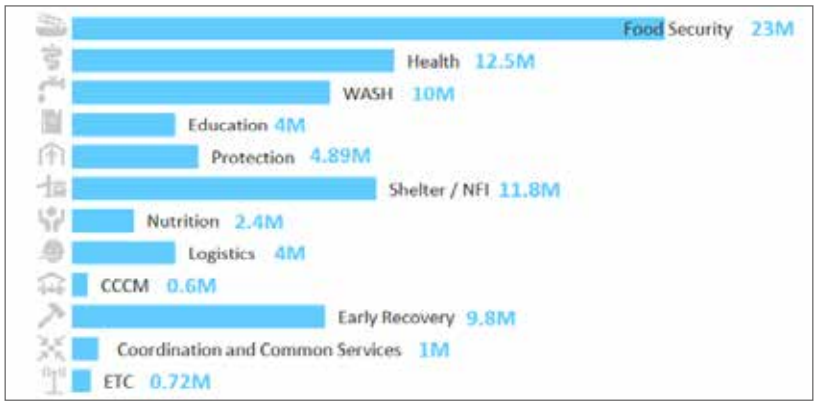
131 This Annex is prepared at the request of the Government of Mozambique to accompany and supplement the PDNA undertaken for Cyclone Idai and reflects the partial information obtained from different sources available at the time of its preparation. A rapid consultation was held in Maputo with the Provincial authorities of Cabo Delgado and Nampula. Information on agriculture and fisheries was supplemented by consultations with the MASA, road information was based on data from the provinces, and other data on emergency needs come from the international humanitarian assessment of UN OCHA.

132 FEWS NET, Mozambique Food Security Outlook Update April 2019.

The international humanitarian community responded to cyclone Kenneth by rapidly identifying immediate needs and mobilizing resources reflected in a rapid appeal to assist more than 373,800 people in need of humanitarian assistance in many remote, isolated non-accessible districts. According to OCHA and the humanitarian clusters, the immediate humanitarian requirements amount to USD 84,7 million as outlined below.

It is important to note that given the massive response to cyclone Idai, the Government, UN agencies and partners had to face cyclone Kenneth with depleted stocks and seriously stretched resources and capacity to respond to both events.

Fig. 1: Humanitarian needs in response to Cyclone Kenneth



Population affected

The tables below indicate the population affected by province and by district based on the latest government figures.

Table 1: population affected by Cyclone Kenneth

	Source	Affected	Families	Fatalities	Injured
Cabo Delgado	INGC	253 633	50 170	41	91
People in need	OCHA/WFP	350 132			
Nampula	INGC	49 664	10 400	4	3
People in need	OCHA/WFP	23 725			
TOTAL from provinces		303 297	60 570	45	94
Total estimated people in Need	OCHA/WFP	373 857			

The population affected represents 3% of both provinces total population. More than 60,000 families were affected, many of them women-headed households who are exposed to food insecurity given the large agricultural damage estimated. This is reflected in the high number of people in need estimated by OCHA and the UN WFP, as reflected in the humanitarian needs indicated in the previous section.

Table 2: Population affected by district (INGC, 3 May 2019)

District	Affected, as per INGC sitrep 3 May
Montepuez	1,63
Ancuabe	7,515
Chiure	24,435
Meluco	5,451
Mueda	25,68
Muidumbe	16,994
Nangade	3,545
Ibo	15
Macomia	85,225
Mecufi	1,645
Metuge	3,6
Pemba Cidade	9,366
Quissanga	21,154
Total Cabo Delgado	221,240
Memba	11,095
Erati	9,366
Total Nampula	20,461
TOTAL BOTH PROVINCES	241,701

It is important to note that the human impact caused by Kenneth is superimposed on previous heavy rains at the beginning of the year, the effects of Cyclone Idai in some districts, and vulnerable population groups that had been resettled as part of the conflict stabilization efforts of the previous year.

Differential impact and needs are quite dramatic between different districts, as seen in the table below which should lead to the prioritization of recovery in the districts with the highest impact. It also bears noting that in some locations the population was already displaced from internal conflict. A more detailed composition of the vulnerable population groups in Cabo Delgado shows that approximately 82% are children and 16,3% are aged people.

Table 3: Vulnerable population groups affected by Kenneth

Districts	Aged	Handicapped	Chronically ill	Children	Distrito
Ibo	436	24	19	1 809	2 288
Macomia	2 427	189	38	10 616	13 270
Pemba	1 702	308	91	8 404	10 505
Quissanga	1 735	58	12	4 217	6 022
Palma	9	0	0	24	33
Mueda	73	0		441	514
Muidumbe	778	0	0	5 571	6 349
Nangade	0	0	0	2 679	2 679
Mocimboa da Praia	240	27	0	1 775	2 042
Meluco	156	0	0	4 249	4 405
Chiure	19	0	0	76	95
Metuge	364	0	0	0	364
Total	7 939	606	160	39 861	48 566

Preliminary Assessments

The World Bank commissioned a rapid remote assessment to estimate the financial impacts of Cyclone Kenneth (similar approach was followed after Cyclone Idai). The study was conducted using the Global Rapid Post-Disaster Damage Estimation (GRADE) approach. The GRADE method used reported damage statistics published by Government agencies and calibrated it with flood footprint, wind field (hazard); building and capital stock distribution (exposure); engineering information (vulnerability) and historical damage data to derive modeled direct economic damage for the following sectors: (1) residential buildings; (2) non-residential buildings; (3) infrastructure (including roads, bridges, railways, water and sanitation, and energy); and (4) agricultural crops. The assessment was made possible by financial support through the Global Facility for Disaster Reduction and Recovery (GFDRR).

The nature of the methodology, which relies on modeling and remote assessment, has limitations in terms of focusing on damages of fixed assets and not intended to provide highly accurate results at a very granular level. It is also important to note that the methodology does not capture indirect losses due to reduced productivity, business interruption, and output loss, nor the cost of building back better the damaged infrastructure to be more disaster resilient. This approach therefore, serves as an initial reference, to the Post Disaster Needs Assessments (PDNA), which has a significant focus on field-collected damage and loss data and on working with in-country partners to develop reliable sector-wide damage, loss and needs assessments. The results of the assessment show total damages to buildings, infrastructure and agriculture of $107 million. This aggregate number takes into account damages to residential and non-residential buildings, infrastructure and agriculture summarized in the chart below. At this moment there is no further disaggregation of damages.

Estimates of capital damages by sector (in US$ millions)

Modelled			Reported & Modelled	Total
Residential Buildings	Non-Residential Buildings	Infrastructure	Agriculture	
$26m	$24m	$26m	$31m	$107m

The Effects of Cyclone Kenneth

The partial information that was possible to gather in the short time available, in order to present an initial appraisal to donors, is summarized in the following table.

Table 4: Total damage and loss

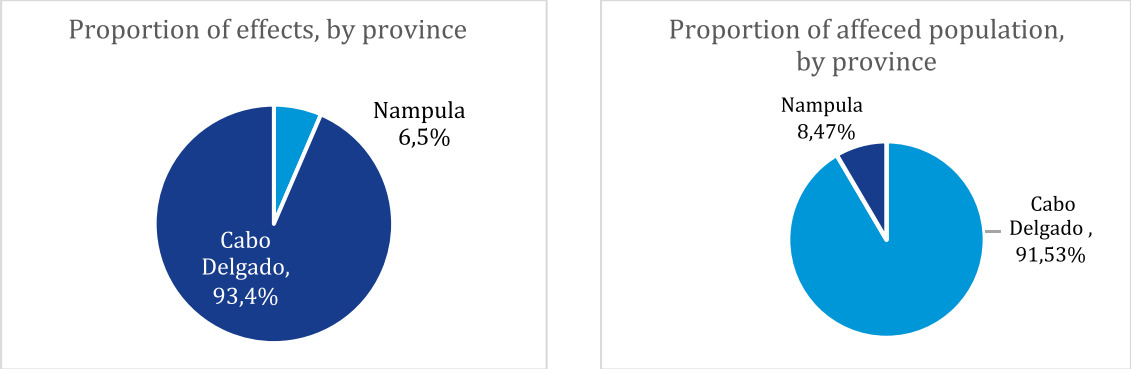
	MTZ		USD	
	Damage	Loss	Damage	Loss
TOTAL	6 282 894 373	6 516 950 792	98 170 225	101 827 356
Productive sector	**1 574 393 454**	**3 888 511 990**	**24 599 898**	**60 758 000**
Agriculture and food security	1 383 907 339	3 883 156 740	21 623 552	60 674 324
Fisheries	190 225 000	5 355 250	2 972 266	83 676
Industry and commerce	122 183		1 909	-
Tourism	138 932		2 171	-
Social sector	**2 283 235 662**	**1 853 681 490**	**35 675 557**	**28 963 773**
Housing	1 738 554 597	1 634 641 607	27 164 916	25 541 275
Education	181 049 280	48 819 600	2 828 895	762 806
Health	363 516 992	170 220 283	5 679 953	2 659 692
Science and technology Ensino Tec. Prof. e Superior	17 895		280	-
Culture, youth and sports	96 898		1 514	-
Infrastructure	**2 417 489 373**	**774 757 312**	**37 773 271**	**12 105 583**
Transport/Roads	2 315 035 714	771 678 571	36 172 433	12 057 478
Telecommunication	101 872 215	3 078 741	1 591 753	48 105
Energy	54 044		844	-
Water and sanitation	527 400		8 241	-
Crosscutting sector	**7 775 884**	**-**	**121 498**	**-**
Gender	248 290		3 880	-
Environment / resettlement	6 213 284		97 083	-
Governance	250 000		3 906	-
Livelihoods	526 095		8 220	-
Social protection	538 216		8 410	-

Total damage and loss are estimated at MTZ 6 282 894 373 (98,2 USD millions) attributable to damaged infrastructure and assets. The limited assessment of losses is estimated at 6 516 950 792 MTZ (101,8 USD millions).

The preliminary estimate of recovery needs is 9 844 432 271 MTZ (224,4 USD millions).

Very preliminary estimates of damage in the provinces, subject to revision and more precise data, shows a large concentration of the effects in Cabo Delgado.

Fig. 2: Preliminary estimates of damage by province



Housing

Housing damage is extensive: preliminary estimates indicate that more than 27,000 houses were damaged in both provinces, 1800 destroyed and 1316 inundated by flood waters.

Table 5: Number of houses damaged and destroyed by Kenneth

PROVINCE	Damaged	Destroyed	Flooded	Temples
Cabo Delgado	25 984	15 647	1 316	124
Nampula	5 068	3 779		32
Total	31 052	19 426	1 316	156

Source: Provincial presentations (Maputo, 10 May 2019)

The estimates of damage and loss in the housing sector reflect the number of houses accounted for, with some isolated unreached districts remaining.

Table 6: Total damage and loss in housing

	Damage		Loss	
	MZM		MZM	
	Public	Private	Public	Private
a) Totally destroyed houses		652 533 447		
B) Physical interventions in partially destroyed houses				
Temporary accommodation on-site			186 486 259	
Domestic Income losses				168 623 632
Domestic Goods		159 136 736		
Demolition and debris removal				8 427 360
Administrative losses				5 407 966
Provision of basic infrastructure plots			638 945 280	
Total	-	811 670 183	825 431 539	182 458 957
TOTAL in USD		12 682 347	12 897 368	2 850 921

The recovery needs estimated reflect the necessary relocation of a small portion of households in areas deemed uninhabitable as well as improvement in the quality of rebuilt houses to include risk reducing measures to build back better.

Table 7: Recovery needs in housing

Recovery Needs	Needs	
	MZM	
	Public	Private
A) Physical interventions in totally destroyed houses		
a1) Temporary accommodation on-site	186 486 258,7	
a2) On totally destroyed houses		825 702 345,4
B) Physical interventions in partially destroyed houses		
b1) Temporary accommodation on-site	310 636 800,0	
b2) Resilience and quality increase reconstruction		363 807 200,3
C) Structural retrofit to increase resilience for future disasters		272 160 000,0
Domestic Goods		159 136 735,5
Demolition and debris removal		8 427 359,8
Administrative losses		5 407 965,9
G) Relocation in safe areas		
g1) First relocation phase - preliminary installation	186 486 258,7	
g1) Provision of basically infrastructure plots	638 945 280,0	
H) Human settlements resilience and vulnerability reduction interventions	288 000 000,0	
I) Technical assistance for local authorities dealing with housing and human settlements	96 000 000,0	
L) Technical assistance for local construction MSME	32 000 000,0	
Total	1 738 554 597,4	1 634 641 606,8

Table 8: Prioritization of recovery needs in housing

	Item	Priority (1 to 5)	Description	Cost	
				MZM	USD
Short term	A) Physical interventions in totally destroyed houses	1			
	a1) Temporary accommodation on-site	1,1	Provision of shelter materials and assistance for temporary reinstallation	186 480 000,00	2 913 750,00
	a2) Resilience and quality increase reconstruction	1,2	Provision of technical and material assistance for resilient reconstruction of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	825 702 345,42	12 901 599,15
	B) Physical interventions in partially destroyed houses	1			
	b1) Temporary accommodation on-site	1	Provision of shelter materials and assistance for temporary reinstallation	310 636 800,00	4 853 700,00
	b2) Resilience and quality increase reconstruction	1	Provision of technical and material assistance for resilient rehabilitation of improved quality housing units (with specific intervention according to specific housing typology and level of vulnerability)	363 807 200,26	5 684 487,50
	C) Relocation in safe areas	1			
	c1) First relocation phase - preliminary installation	1,1	Provision of shelter materials and humanitarian assistance for temporary relocation in new plots	186 480 000,00	9 983 520,00
	C2) Provision of basically infrastructure plots	1,2	Basically infrastructure plots in resettlement camps (barrios) - not including water and sanitation	638 945 280,00	20 799 000,00
	D) Demolition and debris removal	1	Demolition of conventional houses and debris removal (not including asbestos special treatment)	8 427 359,76	131 677,50
	E) Technical assistance for local construction MSME	1	Specific training programs for local construction micro-enterprises, neighborhood skilled labor, on resilient construction techniques	32 000 000,00	500 000,00

	Item	Priority (1 to 5)	Description	Cost	
				MZM	USD
Medium term	F) Human settlements resilience and vulnerability reduction interventions	2	Basic and work intensive neighborhood infrastructure rehabilitation for improved resilience (micro-drainages, public spaces, access roads etc.)	288 000 000,00	4 500 000,00
	G) Technical assistance for local authorities dealing with housing and human settlements	2	On the job capacity building for local authorities to deal technically with housing and human settlements reconstruction process, m&e, revision of plans, codes and regulation considering disaster impact etc.	96 000 000,00	1 500 000,00
	Income generating activities through high intensive community labor (to recover from Domestic Goods loss)	2	Income generating activities through high intensive community labor (to recover from Domestic Goods loss)	159 136 735,52	2 486 511,49
Long Term	H) Structural retrofit to increase resilience for future disasters	3	Housing retrofit program for improving quality and resilience in non affected structures in disaster area in mid-long term	272 160 000,00	4 252 500,00

Education

According to preliminary estimates almost 47,000 children were out of school as a result of 526 school classrooms that were affected, 477 in Cabo Delgado and 49 in Ampula. The table below summarizes the extent of damage in Cabo Delgado, including the number of students and teachers affected and damage to education kits and supplies.

Table 9: Number of damaged schools in Cabo Delgado, by district, type of damage and children and professors affected

Cabo Delgado districts	Number of schools	CLASSROOMS		AFFECTED	
		Partial	Total	Students	Teachers
Balama	0	0	0	0	0
Ibo	11	30	3	3 266	109
Macomia	28	115	31	14 908	274
Chiure	26	15	24	3 201	59
Mocimboa da Praia	1	1	1	148	2
Montepuez	1	1	2	300	2
Nangade	0	0	0	0	0
Mueda	2	16	7	2 300	31
Muidumbe	7	19	0	2 850	123

Metuge	4	9	0	1 050	18
Mecufi	1	0	1	300	3
Pemba	4	8	0	800	4
Ancuabe	20	10	37	4 700	52
Namuno	0	0	0	0	0
Meluco	14	50	3	200	4
Quissanga	25	32	57	7 171	210
Palma	3	2	3	500	6
Total	147	308	169	41 694	897

Source: Provincial Government presentation (Maputo 10 May)

Table 10: Damage to schools in Nampula (based on fragmentary partial information)

Distrito	Schools	Precarious	Mixed	Conv.	Administration	Students	Teachers
Eráti	…	4	0	0	0	400	4
Memba	…	16	0	0	4	1600	16
Monapo	…	9	0	4	0	1700	26
Nacaróa	…	16	0	0	0	1600	16
Total	20	45	0	4	4	5300	62

Costing damages were estimated using the same criteria applied for the PDNA for Idai in the education sector, although with less detailed information – e.g. schools reported were not separated by primary/secondary or public/private. Note: As of 11 May, the Provinces & Districts were not able to provide a breakdown of the public vs. private school facilities & still lacking a full primary vs. secondary school breakdown.

With these limitations the following damages and losses have been estimated:

	Damage	Loss
USD	2 721 142	762 775
Meticais	174 153 102	48 817 600

In addition damages occurred in the technology institutes in Bilibiza and Macomia, with a repair cost estimated in 6 896 178 MZN.

Recovery needs are based only on the damages accounted for, allowing for upgrading and risk reducing infrastructures, and is estimated to be a total of 862 448 858 MTZ (USD 13,5 millions).

Health and social protection

As a result of the passing of cyclone Kenneth, over 250,000 people needed urgent health and nutrition services. Following the disaster, there has been a rise in the reported cases of malaria, fever, cholera and other diarrheal diseases in the four most affected districts of the Cabo Delgado Province – Pemba, Ibo, Metuge and Mecufi.

Table 11: Key health statistics in affected districts

Variable	Cabo Delagdo	Nampula	Total
Total population of province	2 320 261	5 758 920	8 079 181
Number of affected districts	12	2	14
Population of affected Districts	1 395 901	686 351	2 082 252
Families affected	50170	7986	58 156
People affected	253633	37578	291 211
Cholera cases (attack rate 11 per 100,000)	154	75	229
Total OPD (2018)	3 737 197	7 509 700	11 246 897
Inpatients (2018)	355 034	713 422	1 068 455
OPD Per capita	1,61	1,30	1,46
Expected OPD Cases (affected Districts)	3 737 197	7 509 700	11 246 897
Expected OPD Cases among affected people	69 795	34 318	104 113
Expected admissions among affected people	6 631	3 260	9 891
SAM	12 682	5 637	18 318
GAM	38 045	5 637	43 682
Malnutrition	50 727	11 273	62 000

The Ministry of Health (MOH) and its partners are responding to the emergency, with a planned mass Cholera vaccination campaign for the week of May 16, 2019. About 19 Health Facilities mainly in Cabo Delgado province suffered damages - 3 were completely damaged and 16 partially damaged. The health and nutrition sector undertook a rapid assessment of the damage, loss and recovery needs as presented in table below.

The damage is estimated to be US$ 5.7 million out of which US$ 2.4 million relates to damaged equipment and furniture and US$ 0.8 million for damaged medical supplies and the rest being the cost of damaged infrastructure. The total loss is estimated to be US$ 26.6 million out of which US$ 17.5 million is related to the Nutrition sub-sector.

Table 12: Total damage and loss in health

Description	Cost in Local Currency		Cost USD	
	Public	Private	Public	Private
Damages	420 027 489	-	6 562 930	-
Cost of total damage	2 065 920,00	-	32 280	-
Cost of damage to supplies	51 635 871	-	806 810	-
Cost of damage to equipment and furniture	154 907 613	-	2 420 431	-
Cost of partial damage	154 907 613	-	2 420 431	-
Resilience	56 510 472	-	882 976	-
Losses	**1 702 202 803**	**-**	**26 596 919**	**-**
Governance	53 044 176,00	-	828 815	-
Infrastructure	-	-	-	-
Risks reduction	561 682 799,05	-	8 776 294	-
Service delivery and access	1 087 475 827,96	-	16 991 810	-
Total	**2 122 230 292**	**-**	**33 159 848**	**-**

It is estimated that the health and nutrition sector requires about US$ 33.13 million over 5 years to effectively respond to, and recover from the cyclone Kenneth disaster. About 80% of this estimate (US$ 26.6 million) will be to restore infrastructure and service delivery in the Cabo Delgado province.

In terms of prioritization, about US$ 12.6 million of the estimated need is in the short term with additional US$ 13.3 million needed over 3 years and another US$ 7.3 million from 3-5 years. About 51% of the estimated needs are intended to support the resumption of health and nutrition service delivery to the affected people especially the vulnerable; 26% for disaster risk management including disease prevention and control; 17% for reconstruction and rehabilitation of damaged infrastructure; 3% to restore governance and decision-making processes; and 3% to incorporate resilience in the reconstruction and rehabilitation of damaged infrastructure.

Table 13: Estimated Health and Nutrition Sector Recovery Needs

Dimension	Short-term Needs Up to 12 months (USD)	Medium-term Needs 1 -3years (USD)	Long-term Needs 3- 5 years upwards	Overall Needs (USD)
1. Needs for increased resilience, risk and vulnerability reduction	3,334,992	3,510,517	1,930,785	8,776,294
Higher expenditures for epidemic diseases (cholera, malaria, diarrhea, measles, polio, TB etc.)	30,707	32,323	17,778	80,808
Higher expenditures to mitigate disaster risks	1,966,777	2,070,291	1,138,660	5,175,729
Information systems, M&E	861,840	907,200	498,960	2,268,000
Massive training in psychosocial support	9,191	9,675	5,321	24,188
Costs related to Vector control	466,477	491,028	270,065	1,227,570
2. Reconstruction of infrastructure and physical assets	2,146,116	2,259,069	1,242,488	5,647,673
Reconstruction, replacement of damaged equipment, supplies and medicines	2,146,116	2,259,069	1,242,488	5,647,673
3. Restoration of health sector governance and decision making process	314,950	331,526	182,339	828,815
Costs for additional coordination and disaster management needs	60,278	63,450	34,898	158,625
Costs for additional coordination and disaster management needs of nutrition response	23,822	25,076	13,792	62,690
Information systems, M&E	230,850	243,000	133,650	607,500
4. Resumption of access to and delivery of health services	6,456,888	6,796,724	3,738,198	16,991,810
Higher expenditures for epidemic diseases (cholera, malaria, diarrhea, measles, poliomyelitis, TB etc.)	1,447,451	1,523,632	837,998	3,809,081
Higher expenditures for overall increased case load (across diseases and ailments)	973,267	1,024,491	563,470	2,561,228
Higher expenditures for treatment and long term care for physical and mental trauma	173,390	182,516	100,384	456,290
Higher expenditures to treat acute malnutrition	3,828,046	4,029,522	2,216,237	10,073,805
Higher expenditures to treat mental disorders in acute phase	15,586	16,406	9,023	41,016
Information systems, M&E	4,008	4,219	2,320	10,547
Temporary recruitment	15,141	15,938	8,766	39,844
5. Risks reduction and Building Back Better - BBB	335,531	353,190	194,255	882,976
Resilience and building back better	335,531	353,190	194,255	882,976
Grand Total	12,588,476	13,251,027	7,288,065	33,127,568

Agriculture and fisheries

Initial estimates from the provinces indicate that more than 1 835 375 hectares of crops were affected, with an area lost of 34 803 ha, mostly in Cabo Delgado. In Nampula irrigation systems affected 290 irrigation areas. In Nampula there were severe losses in fisheries in terms boats (more than 72) and fishing gears.

Agriculture

A more detailed estimate of the damage and loss in agriculture in both provinces indicates the severity of production losses that will affect not only access to food but losses of livelihoods and income, affecting the value chain associated with commercial crops such as coconuts.

Table 14: Cabo Delgado crop losses

Crops	Destroyed area (ha)	Yield (kg/ha)	Lost production (kg)
Cabo Delgado			
Corn	7 359	1 991	14 653 000
Sweet potato	885	11 885	10 518 000
Cassava	8 751	9 958	87 145 000
Beans	3 700	699	2 587 000
Rice	3 489	2 987	10 423 000
Millet	1 786	900	1 607 000
Sesame	641	399	256 000
Groundnuts	425	800	340 000
Vegetables	640	9 992	6 395 000
Sorghum	761	601	457 000

Table 15: Crop losses in Nampula

Crops	Destroyed area (ha)	Yield (kg/ha)	Lost production (kg)
Napula			
Corn	1 045	1 300	1 358 000
Cassava	2 241	10 998	24 646 000
Vegetables	134	12 000	1 608 000
Beans	1 478	800	1 182 000
Sesame	945	600	567 000
Groundnuts	532	799	425 000
Millet	123	1 195	147 000
Rice	118	1 305	154 000

Table 16: Total damage and loss for agriculture

	Damage		Loss	
	Local Currency (MZN)		Local Currency (MZN)	
	Public	**Private**	**Public**	**Private**
Crops (annual / perennial)				
Cabo Delgado	0	1 154 400 231	0	3 241 299 960
Nampula	0	0	0	591 686 100
Total crops	0	1 154 400 231	0	3 832 986 060
Livestock				
Cabo Delgado	0	15 554 250	0	13 702 560
Nampula	0	34 877 350	0	36 468 120
Total Livestock	0	50 431 600	0	50 170 680
Administrative infrastructure				
Cabo Delgado	3 000 000	0	0	0
Nampula	0	0	0	0
Total admin. Infrastructure.	3 000 000	0	0	0
Irrigation				
Cabo Delgado	33 774 684		0	0
Nampula	142 300 824		0	0
Total Irrigation	176 075 508	0	0	0
Total	179 075 508	1 204 831 831	0	3 883 156 740

Table 17: Recovery needs in agriculture

	Local Currency (MZN)	Local Currency (MZN)	USD	USD
	Public	**Private**	**Public**	**Private**
Crops (annual / perennial)				
Cabo Delgado	0	2 306 372 800	0	36 037 075
Nampula	0	381 952 455	0	5 968 007
Total crops	0	2 688 325 255	0	42 005 082
Livestock				
Cabo Delgado	0	107 594 483	0	1 681 164
Nampula	0	210 931 620	0	3 295 807
Total Livestock	0	318 526 103	0	4 976 970
Administrative infrastructures				
Cabo Delgado	4 209 000	0	65 766	0
Nampula	188 000	0	2 938	0
Total admin. Infrastructure.	4 397 000	0	68 703	0
Irrigation				
Cabo Delgado	21 922 128	0	342 533	0
Nampula	96 323 760	0	1 505 059	0
Total Irrigation	118 245 888	0	1 847 592	0
DRR				
Cabo Delgado	78 109 400	0	1 220 459	0
Nampula	21 969 600	0	343 275	0
Total DRR	100 079 000	0	1 563 734	0
Total needs	222 721 888	3 006 851 358	3 480 030	46 982 052

Fisheries

In fisheries most of the damage was to boats and fishing gear, in addition to the flooding of ponds and aquaculture infrastructure.

Table 18: Total effects in fishery infrastructure

Province	Aquaculture units affected	Damage					Losses
		Ponds		Ponds in field		Alevines	Lost production (tons)
		numbers	area (m2)	numbers	area (m2)	numbers	
Cabo Delgado	41	53	26 500	5	12 500	104 500	23
Nampula	0	0	0	0	0	0	0
Total	41	53	26 500	5	12 500	104 500	23

Table 19: Total damage and loss in fisheries in MZN and USD

	Damage		Loss	
	Local Currency (MZN)		Local Currency (MZN)	
	Public	Private	Public	Private
Fishery / aquaculture				
Cabo Delgado	0	158 075 000	0	5 355 250
Nampula	0	29 150 000	0	0
Total Fisheries	0	187 225 000	0	5 355 250
Administrative infrastructures				
Cabo Delgado	0	0	0	0
Nampula	3 000 000	0	0	0
Total admin. Infrastructure.	3 000 000	0	0	0
Total	3 000 000	187 225 000	0	5 355 250

Table 20: Recovery needs in fisheries

	Needs		Needs	
	Local Currency (MZN)		US Currency (US$)	
	Public	Private	Public	Private
Fishery / aquaculture				
Cabo Delgado	0	205 400 700	-	3 209 385,94
Nampula	0	39 352 500	-	614 882,81
Total Fisheries	0	244 753 200	0	3 824 269
Administrative infrastructures				
Cabo Delgado	38 000	0	594	0
Nampula	3 302 100	0	51 595	0
Total admin. Infrastructure.	3 340 100	0	52 189	0
DRR				
Cabo Delgado	0	304 000		
Nampula	0	329 400		
Total DRR	0	633 400	0	0
Total needs	3 340 100	245 386 600	52 189	3 824 269

Transport and telecommunications

Roads and bridges

In Cabo Delgado and Nampula the cyclone caused disruption in the Province connectivity with some districts remaining isolated until now. In Cabo Delgado alone more than 14 cuts in the road network were immediately identified, including five bridges and drainage aqueducts. In Nampula the damages were even more extensive.

All the damages were to public infrastructure while losses are all in the private sector and expand beyond the transport operators as they disrupt connectivity affecting other sectors, namely the movement of persons and the production and supply chain of the local economy.

Table 21: Total damage and loss to transport

Transport Sector		Damage		Loss	
		MZN		MZN	
Categories	Province	Public	Private	Public	Private
Road Network	Nampula	1 335 428 571			445 142 857
	Cabo- Delgado	979 607 143			326 535 714
TOTAL		2 315 035 714	-	-	771 678 571

Given the vulnerability exposed by cyclone Kenneth, it is recommended that recovery includes an effort to upgrade and improve the road conditions to a higher standard to reduce future risk and build back better.

Table 22: Recovery needs in transport

Transport Sector		Needs (including Build Back Better)	
		Local Currency	
Categories	Province	Public	Private
Road Network	Nampula	1 869 600 000	
	Cabo- Delgado	1 371 450 000	
TOTAL		3 241 050 000	-

Telecommunications (mobile service)

In the telecommunications sector, there were damages to infrastructure that led to the interruption of services causing losses to the providers. Not only the transmission towers were totally destroyed but equipment and buildings were severely damaged.

Table 23: Total damage and loss to telecommunication

Damage & Loss	Damage		Loss		Needs - BBB	
	MZN		MZN		MZN	
	Public	Private	Public	Private	Public	Private
Total	30 905 054	70 967 161	934 000	2 144 741	40 176 570	92 257 309
Total - USD	490 556	1 126 463	14 825	34 044	637 723	1 464 402

Energy

In Cabo Delgado the energy sector suffered damages in the distribution grid, including posts and transformers, affecting 53 687 customers. Destruction included 15 508 meters (that are part of the households effect). The reestablishment of the energy system in the affected districts (see table) is estimated at MZN 224 million or USD 2,4 million.

Table 24: effects of Kenneth on energy sector

Cabo Delgado: Electricity sector damages and affected clients										
DISTRITOS AFECTADOS	REDE [kms]		POSTES PARTIDOS		POSTES INCLINADOS		TRANSFORMADORES		CLINTES AFECTADOS	
	MT	BT	MT	BT	MT	BT	TOTAL	TOMBADOS	CLIENTES	CONTADORES DANIFICADOS
PEMBA	90	560	8	80	10	120	175	2	43144	7360
MECUFI	115	30	6	15	8	13	39	2	1124	823
METUGE	70	60	6	10	6	16	58	1	2256	897
MACOMIA	58	146	122	205	98	315	18	4	2,732	2,459
MELUCO	59	12	68	30	138	180	7	1	781	703
QUISSANGA	70	16	176	125	378	200	9	2	2,405	2,164
MUIDUMBE*	24	8	3	20	23	120	2	0	126	113
IBO	5	14	25	173	35	151	5	3	1,099	989
TOTAL	**491**	**846**	**414**	**658**	**696**	**1115**	**313**	**15**	**53,667**	**15,508**

Other effects

The meteorological equipment in Cabo Delgado suffered damages, leading to an increased risk as communication to the population of potential future cyclones and other events and the ability to generate alerts for evacuation is compromised. Estimate costs of replacing damaged equipment is estimated at US 1,5 million or 97,1 MTZ millions.

Table 25: effects on early warning systems

Items	Qty	Unit value	Subtotal USD
Maintenance of meteorological stations	5	20.500,00	102.500,00
Data logger Telvent	2	334.687,00	669.374,00
Digital thermometer M170	2	95.000,00	190.000,00
Sensor HMP 155D	2	90.000,00	180.000,00
Udometer	1	225.000,00	225.000,00
Delegation's building roof	1	150.000,00	150.000,00
Total			**1.516.874,00**

The public administration also suffered the total destruction of 11 buildings (7 of them in Quissange District, 2 in Meluco, and one each in Ibo and Macomia) and partial destruction of 28 buildings (10 in Ibo, 8 in Meluco 7 in Quissanga and 3 in Metuge).

Recovery needs

At this early stage recovery and reconstruction needs are yet to be fully identified. Nevertheless, the Provincial Governments are facing immediate needs that go beyond the emergency phase and humanitarian assistance.

The tables below show the work in progress in identifying the very short-term immediate repairs, temporary restoration of services and some already identified repairs and reconstruction in various sectors. These are to be seen as a non-exhaustive initial acknowledgement of the demands and challenges that Kenneth is posing on local governments.

In this section is presented a summary of all the sectors for which needs have been identified and some specific needs in Nampula, for resettlement and agriculture for which detailed information has been made available.

Table 26: Consolidated recovery needs for all sectors (as 16 May)

	NEEDS	
	MTZ	**USD**
TOTAL	9 844 432 271	224 390 187
Productive	3 478 563 061	54 352 548
Agriculture and food security	3 229 573 246	50 462 082
Fisheries	248 728 700	3 886 386
Industry and commerce	122 183	1 909
Tourism		138 932 2 171
Social	2 984 028 003	117 196 370
Housing	1 300 000	70 591 245
Education	862 448 858	13 475 763
Health	2 120 164 352	33 127 568
Science and technology Ensino Tec. Prof. e Superior	17 895	280
Culture, Youth and Sports	96 898	1 514
Infrastructure	3 374 065 323	52 719 771
Transport/Roads	3 241 050 000	50 641 406
Telecommunication	132 433 879	2 069 279
Energy	54 044	844
Water and sanitation	527 400	8 241
Crosscutting issues	7 775 884	121 498
Gender	248 290	3 880
Environment / relocation	6 213 284	97 083
Governance	250 000	3 906
Livelihoods	526 095	8 220
Social Protection	538 216	8 410

Nampula Government identified needs

These provincial needs are partial and in the case of agriculture and transport are already included in the respective sectors, where more complete analysis was made.

Table 27: Government identified needs in Nampula

Group - Sector	Sector	Cost (MT)	National sector involved	Coordination
Priority 1	Agriculture, fisheries and food security	1 954 942 970,00	MASA, Universities	MASA
	Fisheries	73 224 000,00	MMAIP	
	Commerce & industry		Sector Privado, MIC	
Priority 2	Housing		MOPHRH, Autarquias	MISAU
	Education		MINEDH, Autarquias	
	Health and nutrition		MISAU, Autarquias	
	Culture, Tourism and Youth		MJD, MICULTUR, Autarquias, Sector Privado	
Priority 3	Water resources, water, sanitation and hygiene.		MOPHRH, MISAU, Autarquias	MOPHRH
	Transport: roads, bridges		MOPHRH, Autarquias	
	Transport: railways, airports, ports, and telecommunication		MTC, MCTESP	
	Mining and energy		MIREME	
	Administrative infrastructure and sports and cultural infrastructure		MAEFP, MOPHRH, MJD, MICULTUR, Autarquias	
4 Crosscutting issues	Children and gender		MGCAS, Autarquias	MITADER
	Land, Environment and Rural Development	627 783 500,00	MITADER, Autarquias	
	Governance		MEF,MINT, MAEFP, Autarquias	
	Disaster risk reduction		INGC, MOPHRH, Universidades, Autarquias	
	Employment and livelihoods		MITESS	
	Social protection		MGCAS, Autarquias	
5 Human and Macroeconomic impact	Macroeconomic impact		MEF, Bank of Mozambique	MEF e Gabinfo
	Human impact assessment (living conditions, livelihoods, food security, gender equality, social inclusion)		MITESS, INE, MGCAS	
	Press release		Gabinfo	
6 Implementation mechanisms	Financing, operationalization of recovery, implementation, monitoring and evaluation		Governo de Moçambique, Autarquias e parceiros	Gabinete de reconstrução IDAI PC - IDAI
TOTAL		**2 655 950 470,00**		

The cyclone created risks in an area that authorities have deemed uninhabitable, and they propose as a priority need to resettle some 4,000 families. The preliminary cost of this resettlement is indicated in the table below.

Table 28: Preliminary cost for resettlement in Nampula

Type	Item	Unit	Qty	Unit Cost	Cost Per House	Needs By District		TOTAL (MT)
						Erati	Memba	
						273	44	317
Materials	Cement	Sac (50 kg)	20	450,00	9 000,00	2 457 000,00	396 000,00	2 853 000,00
	Beams	0,05x0,22x6,00	18	750,00	13 500,00	3 685 500,00	594 000,00	4 279 500,00
	Zinc	3,60 meters	26	500,00	13 000,00	3 549 000,00	572 000,00	4 121 000,00
	Stakes	Unit	160	70,00	11 200,00	3 057 600,00	492 800,00	3 550 400,00
	Bamboo	Unit	300	30,00	9 000,00	2 457 000,00	396 000,00	2 853 000,00
	Plate Nails	Kg	2	100,00	200,00	54 600,00	8 800,00	63 400,00
	4 inch Nails	Unit	1	100,00	100,00	27 300,00	4 400,00	31 700,00
	Annealed Wire	Kg	10	100,00	1 000,00	273 000,00	44 000,00	317 000,00
Carpentry	Doors	2,00mx0,90m	2	2 000,00	4 000,00	1 092 000,00	176 000,00	1 268 000,00
	Windows	1,00mx1,00m	3	750,00	2 250,00	614 250,00	99 000,00	713 250,00
	Locks	Exterior	2	500,00	1 000,00	273 000,00	44 000,00	317 000,00
	Door hinges	Unit	4	150,00	600,00	163 800,00	26 400,00	190 200,00
	Hinges for windows	Unit	12	120,00	1 440,00	393 120,00	63 360,00	456 480,00
Transport						525 000,00	675 000,00	1 200 000
TOTAL BY DISTRICT					**66 290,00**	**18 622 170,00**	**3 591 760,00**	**22 213 930,00**

Table 29: CABO DELGADO Recovery needs for road infrastructure (from the Provincial Government)

No.	District	Roads	Damage	KM	Estimated value (MZN)	Recovery proposal
1	MACOMIA	N 380 MACOMIA - OASSE	Infrastructure in the meeting of the Metal Bridge, and entraining of the same-intransitavel	10+000	50 000 000,00	Bridge reconstruction, construction of a bypass
		R 766 MACOMIA - MUCOJO	Drifting of the compound drift over the Muagamula-Intransitavel River	24+001	59 999 999,00	Construction of a bridge
		N 380 MACOMIA - OASSE	Diffuse de Aqueduro, erosão que Poe Cause road cutting	89+000	1 000 000,00	Double surface coating, landfills with stabilized soils
2	MECUFI	R 760 MUXARA - MECUFI	Galgamento of rainwater on the road, large erosions in several points-traffic conditioning to cars with 4 x 4	10+000, 20+000, 24+600...	20 000 000,00	Construction of large volumes of landfills and various works of arts
		R 760 MECUFI - RIO MEGARUMA - MAZEZE	Entraining of aqueducts-intransitavel	16+000, 18+000, 30+000…	20 000 000,00	Aqueducts construction
3	PEMBA	N 1 PEMBA - METORO	Galgamento of the stormwater in the prataform of the road, on the bridge over the river Mies-Transitoo conditioned to a lane	15+000	10 000 000,00	Construction of more aqueducts
4	MELUCO	R 767 CRZ N 380 UNGUIA - MELUCO	Destroyed the Deviso newly built in the river Mingonha and river Minapo-Intransitavel	45+000, 56+000	30 000 000,00	Construction of two structures of 12 and 18 meters in length
		R 767 MAGUDE - RAVIA	Entraining of aqueducts-intransitavel	36+000, 47+900…	20 000 000,00	Aqueducts construction.
5	METUGE	R 762 CRZ N 1 ALDEIA MUEPANE - METUGE SEDE	Flooding of the rainwater in several sections of the road, due to the flood of the river Megaruma-Transitoo Conditioning for vehicles 4 x 4	10+000, 11+000, 18+000, 21+000…	3 000 000,00	Two Bridge Constucao
6	MONTEPUEZ	R 698 MONTEPUEZ - NAIROTO	Entraining of Varioa aqueducts-intransitavel	20+000, 25+000, 35+000…	10 000 000,00	Construction of aqueducts, large landfills

No.	District	Roads	Damage	KM	Estimated value (MZN)	Recovery proposal
7	MONTEPUEZ / NAMUNO	R 698 MONTEPUEZ - NAMUNO	Large-transit erosions-Transitoo conditioned to 4 x 4 vehicles	15+000, 17+000, 26+000…	10 000 000,00	Large-figure landfill construction
8	NAMUNO / BALAMA	R 760 BALAMA - NAMUNO	Large-transit erosions-Transitoo conditioned to 4 x 4 vehicles	21+600, 30+500	10 000 000,00	Large-figure landfill construction
9	BALAMA	R 760 BALAMA - MAVALA	Large-transit erosions-Transitoo conditioned to 4 x 4 vehicles	16+000, 21+600	5 000 000,00	Large-figure landfill construction
10	PALMA	R 775 PALMA - QUIONGA - NAMOTO	Entraining of aqueducts-intransitavel	26+400, 30+001	14 999 999,00	Bridge construction
11	CHIURE	SINGANO - JONGA		8	1 600 000,00	Road rehabilitation
		CrZ N1 - MILAMBA		2	1 300 000,00	Road rehabilitation
TOTAL					**266 899 998,00**	

Table 30: Prioritized and sequenced recovery needs in agriculture (from MASA)

Agriculture / Livestock / irrigation / DRR	Item	Priority	Description	Cost	
		(1 to 5)		MZN	USD
Short term	Provision of seeds and tools for field food and cash crops	1	Restart field crop activities	697 972 800	10 905 825,00
	Provision of poultry and milking cows	2	Restock lost poultry and cows	229 068 720	3 579 198,75
	Provision of vegetable seeds and tools for backyards	3	Re-establish backyard farming	498 552 000	7 789 875,00
	Provision of tools for canal cleaning Cash for work approach	4	Restore irrigation structures	22 864 896	357 264,00
	Reestablishment of tree nurseries	5	Restart replanting of perennial trees	26 627 783	416 059,12
Medium-term	Provision of cassava cuttings and sweet potato vines	1	Restore lost field crops	234 698 960	3 667 171,25
	Provision of small ruminants, other cattle and pigs	2	Restock lost small ruminants, other cattle and pigs	16 234 800	253 668,75
	Vaccination of surviving animals	3	Avoid losses of more animal assets	16 830 000	262 968,75
	Rehabilitation of irrigation structures and other infrastructures	4	Concrete structures and other infrastructures	192 619 904	3 009 686,01
	Rehabilitation of chicken farms	5	Restock egg and poultry production	9 450 000	147 656,25
Long term	Rehabilitation of livestock infrastructures	1	Reestablishment of livestock production	20 314 800	317 418,75
	Replanting of perennial cash crops (cashew, coconut)	2	Restart export perennial cash crops	1 130 350 000	17 661 718,75
	Capacity building for staff and farmers, communities	3	Capacity building	1 810 000	28 281,25
	DRR mitigation	4	water proof seed storages	98 868 000	1 544 812,50
	Rehabilitation of administrative infrastructures and assets	5	Improve public services	4 050 000	63 281,25
TOTAL				**3 200 312 664**	**50 004 885**

Note: Estimates for both provinces were made with the support of the Ministry of Agriculture and Food Security.

With the Support of: