



Centre for Research on
Governance and Development

Advancing Legally Resilient Standards to Public Infrastructures

***An Opportunity for Political Parties Ahead
of the 2023 Municipal and 2024 National Elections***

Carlos Shenga and Lorraine Howe

CPGD Policy Brief No 5

March 2023

Authors

Carlos Shenga and Lorraine Howe

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Suggested citation

Shenga, C., and Howe, L. (2023), “Advancing Legally Resilient Standards to Public Infrastructures”, *CPGD Policy Brief 5*, Centre for Research on Governance and Development.

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Advancing Legally Resilient Standards to Public Infrastructures

INTRODUCTION

Mozambique is a country extremely vulnerable to the impacts of climate change and is subsequently facing loss and damage from a range of, often compound, hazards such as flooding, droughts and cyclones. Not surprisingly, an overwhelming majority of 82% of Mozambicans reported that they are ‘very concerned’ about the impacts of changes in climate patterns on their lives and livelihoods¹ (Howe and Shenga, 2022). They also expressed that the government, donors and non-government agencies should act to address climate impacts by: (i) rebuilding damaged infrastructures, (ii) providing assistance programmes to support people’s livelihoods, and (iii) reallocating those in need to safer places (Howe and Shenga, 2022).

Severe weather and climatic conditions are affecting the region with increasing frequency and intensity (IPCC, 2022), as Mozambique has experienced with tropical cyclones Idai and Kenneth hitting the country respectively, on 14 March and 25 April 2019 (OCHA 2019). Since Idai and Kenneth, Mozambique has been affected by severe tropical storm Chalane on 30 December 2020 (OCHA 2020); and tropical cyclone Eloise on 23 January 2021 (OCHA 2021). In 2022, the country was affected by moderate tropical storm Ana, on 24 January (OCHA 2022a); and by intense tropical storm Gombe, on 11 March (OCHA 2022b). Presently, Mozambique is feeling the effect of severe tropical storm Freddy that made landfall twice on 24 February 2023 and 11 March 2023. As of 28 February, the National Institute for Disaster Risk Management (INGD) reports that Freddy affected 163,808 people. This is compounded on top of 232,419 people already affected by heavy rains in the preceding weeks in Maputo city and province, Manica and Tete provinces (OCHA 2023).

This policy brief analyses the extent of public infrastructure damage caused by recent extreme storm events in Mozambique; and it raises policy recommendations for government and opposition policymakers on how to adapt to these impacts. It does so, employing existing available data from different national and international organizations.

DAMAGE FROM TROPICAL STORM EVENTS

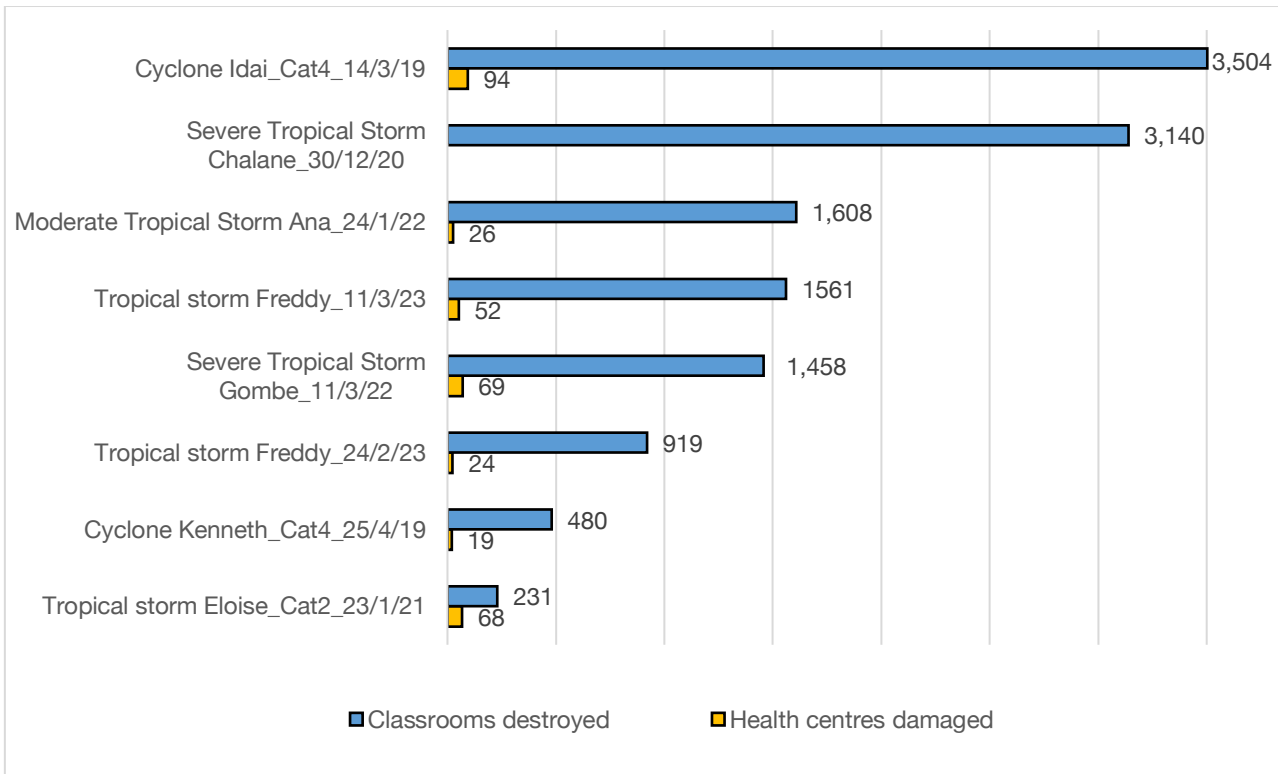
Tropical cyclones and storms have been inflicting economic and non-economic loss and damage in Mozambique. Each of these events that has made landfall in Mozambique has destroyed hectares of agricultural land, impacting crop production and food security; and destroyed roads and bridges. They have also damaged other critical infrastructure such as schools and health facilities; power supply and distributions networks; and water supply systems. They have economic and non-economic losses on cultural identity and heritage, ecosystems and biodiversity and human life. They have killed and injured hundreds of people and displaced many communities. Cyclone Idai, for instance, affected 1.85 million people, damaged 240 thousand houses, 94 health facilities and killed 603 and injured 1.6 thousand people in Sofala, Manica, Tete and Zambézia provinces (OCHA 2019). Preliminary

¹ Results from a nationwide representative multi stratified random probability sample of 1,200 adult individuals conducted in May-June 2022.

assessments from the most recent storm system, Freddy, indicate that its first landfall destroyed or damaged 919 classrooms and 25 health centers (INGD 2023a) and the second landfall 1,561 classrooms and 52 health centers (INGD 2023b).

Figure 1 reports public infrastructure damage by cyclones and storm events in Mozambique. School classrooms experienced the highest levels of destruction during Cyclone Idai in 2019 followed by storms Chalane (2020), Ana (2022) and Gombe (2022).

Figure 1: Public infrastructure damage from tropical storm events in Mozambique, 2019-2022



Compiled by the authors from United Nations Office for the Coordination of Humanitarian Affairs (OCHA) data, www.unocha.org and the National Institute for Disaster Risk Management (INGD) for the tropical storm Freddy.

One particular feature of the damage that these events have on schools and/or classrooms is the removal of their roof destroying doors and windows leaving them unprotected from incoming sun and rain (see Figure 2, Image 1). As a result, pupils end up attending classes in exposed or unsafe settings, underneath trees and/or in tents provided by humanitarian agencies (see Image 2) which can compromise educational performance. In addition, school materials such as textbooks, student records and school reports are also often lost or damaged due to their exposure to outside elements (see Image 3).

Figure 2: Images of infrastructure damage and impacts of tropical storm events



Anticlockwise from top left:

Image 1: Pupils attending school in a classroom damaged by Cyclone Idai, Mozambique (Photo credit: UN Photo/Eskinder Debebe, accessed here: <https://unhabitat.org/news/13-oct-2019/un-habitats-standards-built-schools-survived-mozambiques-cyclone-idai>).

Image 2: Pupils drying damaged school materials after Cyclone Idai, in Inchope, Mozambique (Photo Credit: Tsvangirayi Mukwazhi/AP accessed here: <https://edition.cnn.com/2019/03/18/world/gallery/cyclone-idai-gallery/index.html>).

Image 3: Pupils attending class in provisional tent, Sofala Province, Mozambique (Photo Credit: Global Partnership for Education/Carine Durand on [Flickr](#)).

GOVERNMENT AND DONOR RESPONSE

Following the humanitarian response to the 2019 cyclones Idai and Kenneth consisting of life saving and early recovery involving humanitarian agencies, the government presented the results of a post-disaster assessment. The assessment highlighted that the cost for recovery and reconstruction was about US\$ 3.2 billion².

It established (i) the national post-cyclone reconstruction authority (*Gabinete de Reconstrução Pós Ciclones*, GREPOC)³ to supervise planning, implementation, monitoring and evaluation, recovery and reconstruction; and (ii) a post-reconstruction programme (*Programa de Reconstrução Pós-Ciclone*, PREPOC) to orient funding and implementation, monitoring and evaluation of the effects of the recovery and reconstruction in the following five years.⁴

In this scope, the European Union responded with a Multi-Donor Trust Fund (MDTF) component⁵ known as the Mozambique Recovery Facility (MRF), implemented by the United Nations Development Programme (UNDP). The MRF aims, among other aspects, (i) to restore resilient and inclusive livelihoods and economic empowerment of the affected people particularly women; and (ii) to restore and increase access to housing and community infrastructure (EU 2019). On livelihoods, the action has provided, for instance, affected households with poultry (pairs of ducks) that is resilient to flood events. Regarding infrastructures, the facility rehabilitated and built several infrastructures applying resilient standards. Examples include the Samora Machel Secondary School, Beira; District Secretariat of Beira; Estoril Secondary School, Beira; and the creation of new resettlements in a number of districts where primary schools, houses and markets were built.⁶

MDTF donors and others have also responded accordingly. To name some, the Korean Red Cross, American Red Cross, Associação Muçulmana de Sofala and Fundação Tzu Chi responded with construction of T1 (one room) houses. The latter have also responded with construction of classrooms in primary schools. The Japanese International Cooperation Agency (JICA) responded by mapping risk and flood-prone areas in Beira as well as recovery and reconstruction of infrastructures (GREPOC 2022).

With storm events becoming more frequent, the need for funding for recovery and reconstruction efforts increases year on year. Every year, school infrastructure needs to be rebuilt, replacing damaged or destroyed classroom roofs, windows and doors. Before Mozambique rebuilt the 3,984 classrooms damaged by both cyclones Idai and Kenneth in 2019, an additional 3,140 classrooms were damaged by storm Chalane in 2020. Yet, another 3,066 classrooms were damaged by storms Ana and Gombe in 2022. This way of responding to climate impacts is known as ex-post. It is simply a reaction to an event after it has taken place. The alternative is to act ex-ante through anticipatory action, mitigation and adaptation measures (Byrnes and Surminski 2019, Schäfer and Künzel 2019, Abid *et al.* 2020, Oviedo and Moroz 2013). Ex-ante planning can also lead to better recovery by

² The results were presented at the International Conference of Donors, on 31 May and 1 June 2019 in Beira, Sofala Province.

³ Decree 26/2019, of 11 April; Decree 45/2019, of 22 May.

⁴ <https://www.grepoc.org.mz/poc/>

⁵ The MDTF includes the EU, UNDP, Canada, The Netherlands, Norway, Finland, China Aid, and India.

⁶ Monitoring of the Recovery and Resilience Programme, February 2022.

reducing risk and building resilience (Ilever and Bhatia 2011) which is central to achieving the Sendai Framework for Disaster Risk Reduction, which outlines actions to "Build Back Better" in recovery, rehabilitation and reconstruction (UNDRR 2015).

One recent ex-ante government measure that has been taken is the approval of a ministerial diploma (Diploma Ministerial 122/2021) issued by the Ministry of Education and Human Development and Ministry of Public Works, Housing and Water Resources providing 'Guidelines on Resilience to Natural Threats, Environmental and Social Safeguards for School Buildings'. This is an important first step, among a broad remit of needs, that could help the country to start to reduce damages to public infrastructures from future climate impacts.

DISCUSSION

Climate events, such as tropical cyclones and storms are increasing in frequency and intensity in Mozambique. This is precipitating the government and donors to respond with early-warning, lifesaving and short- and long-term recovery efforts. The trend in response to climate events in the country has, for the most part, been after the event has taken place (ex post) rather than ex ante through mitigation and adaptation – although efforts to enhance early warning systems have begun⁷. Recognising that most infrastructures due to storm events tend to be destroyed and/or severely damaged due to poor quality and/or lack of resilient standards, UN-Habitat, UNDP and the national reconstruction authority GREPOC made an appeal for guidelines for resilient construction standards to be agreed, applied and adhered to by all stakeholders as funds become available from donors such as the World Bank, the European Union and others, to support reconstruction efforts (UNDRR 2019). Whilst a ministerial diploma was approved in October 2021 in relation to resilient buildings standards for schools, it is still not legally prescribed for other types of public infrastructures. Further the enforcement of the resilient building standards in practice will need to be closely monitored.

Climate change loss and damage can be 'avoided' if damage is prevented through mitigation and adaptation measures (Verheyen 2012, Byrnes and Surminski 2019). This suggests that, instead of just responding to a climate event after its impacts by supplicating for funds, political parties in government and opposition should look for strategies that address it beforehand. Mitigation and adaptation measures against climate events in Mozambique will be essential to avoid widespread short- and long-term disruption to livelihoods and essential public infrastructures whether these be schools, healthcare facilities, roads and bridges, water supply systems etc. The adoption of legislation that obliges all constructors to adopt resilient standards when re/building public infrastructures is one critical component.

An advantage of the government approving this type of legislation is that it may boost the governing party's prospect of being re-elected if it contributes to reducing people's vulnerability to climate shocks in the future. Alternatively, the power of opposition political parties should not be underestimated in advancing that legislation as a pledge in their

⁷ On 8 September 2022, the Government of Mozambique, along with other SADC member states signed the Maputo Declaration on the Commitment by SADC to enhance Early Warning and Early Action in the Region. Accessible here: https://au.int/sites/default/files/pressreleases/42156-other-Maputo_Declaration_Final_AUC_11_Sept-2022.pdf.

electoral manifestos. This is advantageous in the context of weak governance as well as to enhance opposition party prospects of election. An aspect that Mozambican political parties should not ignore is that 82% of Mozambicans are ‘very concerned’ about the impacts of climate change in their lives and livelihoods (Howe and Shenga 2022), suggesting that adopting policies that build resilience to adverse climate impacts should be beneficial to them.

For those Mozambicans covered by municipal governments in particular, the incumbent parties at municipalities may advance bills to ensure municipal public infrastructures, such as markets, roads and bridges and water drainage channels are planned, constructed and maintained to adhere to resilient standards. In the same way, opposition parties may take advantage of pledging in their electoral manifestos for legislation that demands resilient standards of construction and maintenance of municipal public infrastructures.

RECOMMENDATIONS

- The governing party should adopt and enforce legislation that compels all constructors to adhere to minimum resilient construction standards when re/building public infrastructures.
- Opposition political parties should pledge and include in their 2024 electoral manifestos proposals for how to legislate and enforce all constructors to apply minimum resilient construction standards to re/build public infrastructures.
- The incumbent parties at municipalities should advance and enforce legislation that obliges resilient standards of construction and maintenance of municipal public infrastructures.
- The opposition political parties at municipalities should pledge and include in their 2023 electoral manifestos proposals for how to legislate and enforce resilient standards of construction and maintenance of municipal public infrastructures.

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