RMF
Roads Maintenance Forum

Mozambique's Response to Climate Change in the Context of Road Maintenance

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1. INTRODUCTION

Mozambique: One of Africa's Most Climate-Exposed Countries:

- Second most exposed country in Africa to floods and cyclones;
- 104 river basins, including 9 transboundary basins;
- Annual flooding influenced by La Niña and the Inter-Tropical Convergence Zone;
- Strategic transport corridors connecting six neighbouring countries to Indian Ocean ports.

2. MAJOR EXTREME CLIMATE EVENTS IN MOZAMBIQUE

Event	Impact
2000 Limpopo Floods	Major infrastructure damage
2013 Limpopo Floods	113 deaths; 200,000 displaced
2015 Floods (Zambézia, Nampula and Niassa)	326,000 affected; US$371 million damages
Cyclones Idai & Kenneth (2019)	1.7 million affected; 644 deaths
Cyclone Freddy (2023)	Severe damage to road infrastructure
Cyclone Jude (2025)	More than 6,000 km of roads affected
2026 Floods(Southern and Central Mozambique)	More than **700,000** affected

Main Impact:

- Increasing Frequency and Impact of Climate Disasters are affecting larger populations.
- Transport infrastructure is repeatedly damaged by floods and cyclones.
- Communities are increasingly vulnerable to prolonged isolation.
- **Road maintenance budgets are under growing pressure due to emergency repairs.**

3. 2026 FLOODS EMERGENCY

Between December 2025 and February 2026, Mozambique experienced one of the most severe flood events since the catastrophic floods of 2000.

- ❑December 2025: Normal river flow conditions
- ❑January 2026: Significant flood expansion across southern Mozambique

•Flooding extended beyond riverbanks, impacting roads and connectivity

➞ Demonstrates rapid onset and high vulnerability to extreme rainfall

3. 2026 FLOODS: IMPACT ON ROADS INFRASTRUCTURES

The 2025/26 rainy season has caused severe and widespread damage to Mozambique's road network, reinforcing the sector's high vulnerability to climate-related events.

- approximately 8.000 km of roads have been affected (30% of road network), with 1.000 km damaged, along with 35 bridges, 11 causeways, 13 drifts and 129 culverts.

  Critical damage types include: Road washouts and embankment failures, Erosion of shoulders and slopes, Pavement degradation due to prolonged water, Bridges (structural damage and overtopping), Culverts and drainage systems (blockage, undersizing),Drifts and low-level crossings (submerged or destroyed)

- In Gaza Province the January floods left large parts of the province and population without road access, mainly in the area of the Limpopo River.

3. 2026 FOODS: IMPACT ON ROADS INFRASTRUCTURES

- National backbone
- Trade & logistics corridor
- Humanitarian access
- Severe disruptions observed

- ANE had prioritized the N1 as the road that need an immediate emergency works to allow a quick assistance to the affected people and re-establish the transportation of goods and people along the country.

3. ANE RESPONSE STRATEGY

Based on the damages observed, the strategy was to implemented the interventions in two phases namely:

- Immediate emergency works: Immediate access: quick survey was done to identify the type of damages, quantify the works, and mobilize Contractors with capacity to implement the works in a very short time. The works were financed by the Road Fund (GOM);

- Medium-term emergency works: Rehabilitation of damaged road and bridges taking into consideration the resilience of the new infrastructures. To be financed by Development partners.

3. 2026 FLOODS: IMMEDIATE RESPONSE ON N1 ROAD

Maputo Province: The main damages are located along the 17 km of Baixa de Incoluane section, from 3 de Fevereiro to Incoluane bridge where 6 road washouts with the lengths ranging from 60 to 120 meters long and 4 to 10 meters depth were observed, including the erosions of the embankment which left many of the road sections with only half width.

Gaza Province: The main damages are located along 3.2 km from Limpopo River bridge up to Nguluzane River bridge section, where we observed 2 road washouts.

3. 2026 FLOODS: IMMEDIATE RESPONSE ON N1 ROAD



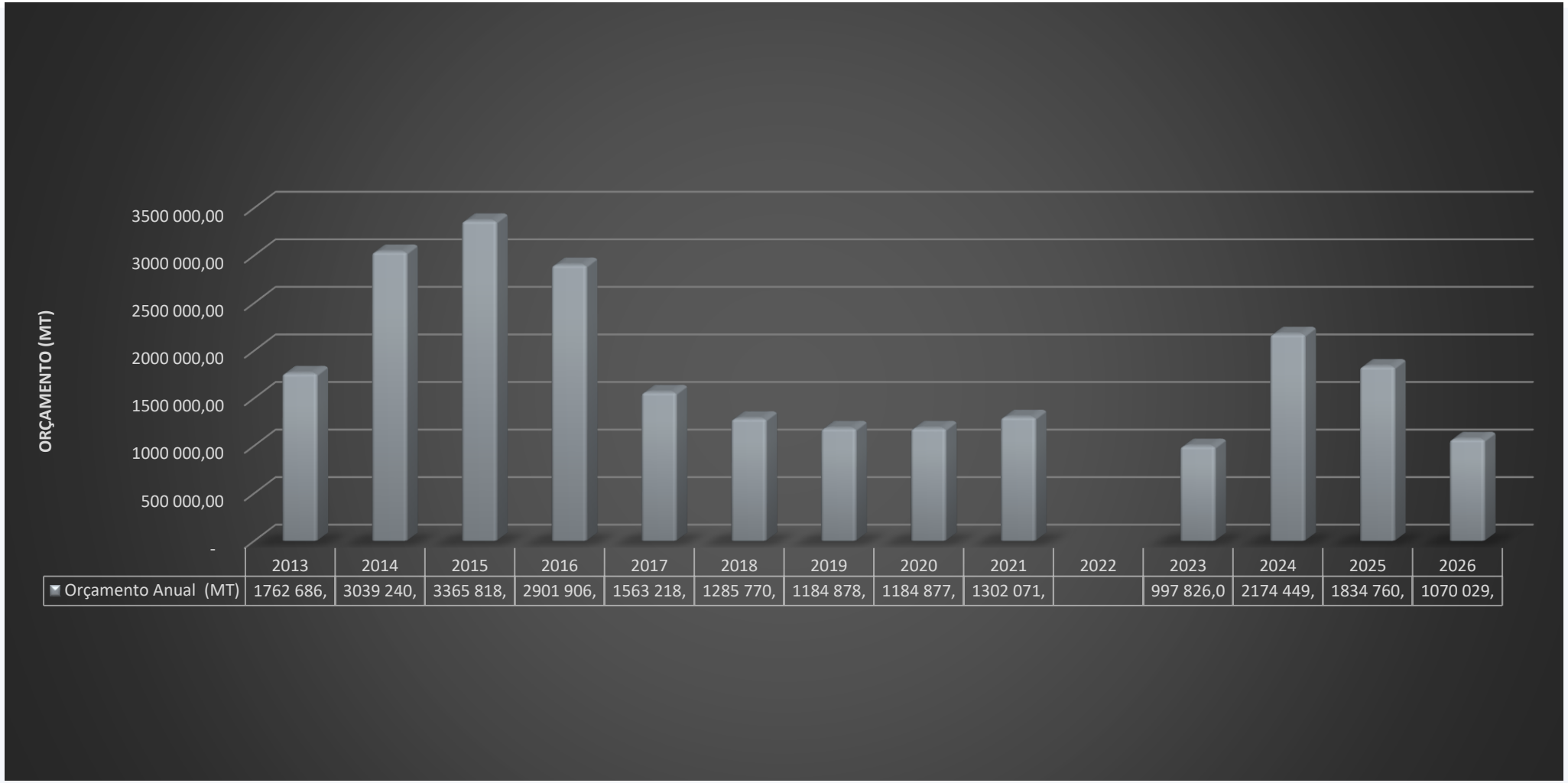
- The main scope of the works to restore the connectivity was fill the cuts with different grades of stone including re-establish the normal width of the road.
- Significant logistical constraints due to material mobilization from Maputo, with transport distances exceeding 100 km to Incoluane and 200 km to Xai-Xai, resulting in increased costs and delays in emergency response works.

3. 2026 FLOODS: FINANCIAL IMPACT

Summary of financial impact:

- Total damage: **USD 285M**
- Immediate needs: **~USD 120–150M**
- Gaza basin: **largest concentration of costs**
- N1 share: **~15% of total,** Despite its relatively smaller share of total costs, the economic impact of disruptions is significantly higher, given its role as Mozambique's primary transport artery and backbone of national and regional trade.

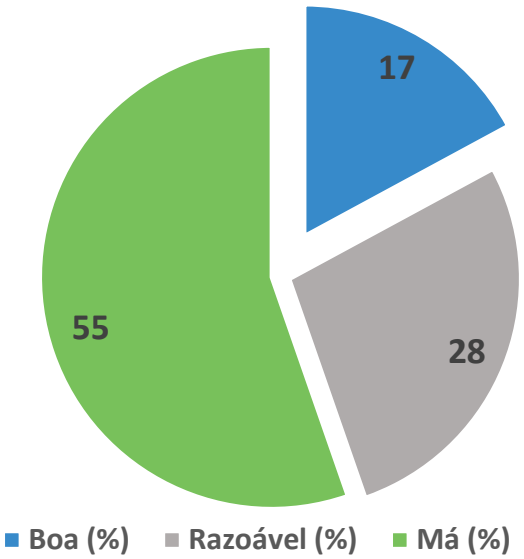
4. Historic Maintenance Annual Budget (Mt)



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Orçamento Anual (MT)	1762 686,	3039 240,	3365 818,	2901 906,	1563 218,	1285 770,	1184 878,	1184 877,	1302 071,		997 826,0	2174 449,	1834 760,	1070 029,

5. ROAD NETWORK CONDITIONS & NEEDS FOR THE NEXT 5 YEARS

CLASS	UNPAVED (km)	PAVED (km)	TOTAL (km)
• Primary	298.0	5,791.0	6,089
• Secondary	3,520.4	1,389.6	4,910
• Tertiary	11,508.0	1,235.0	12,743
• Local Roads	6,576.3	105.4	6,682
TOTAL	**21,902.7**	**8,521.0**	**30,424**



TO REVERSE THE CURRENT CONDITION OF THE ROAD NETWORK, THE FOLLOWING INVESTMENTS ARE REQUIRED OVER THE NEXT FIVE YEARS:

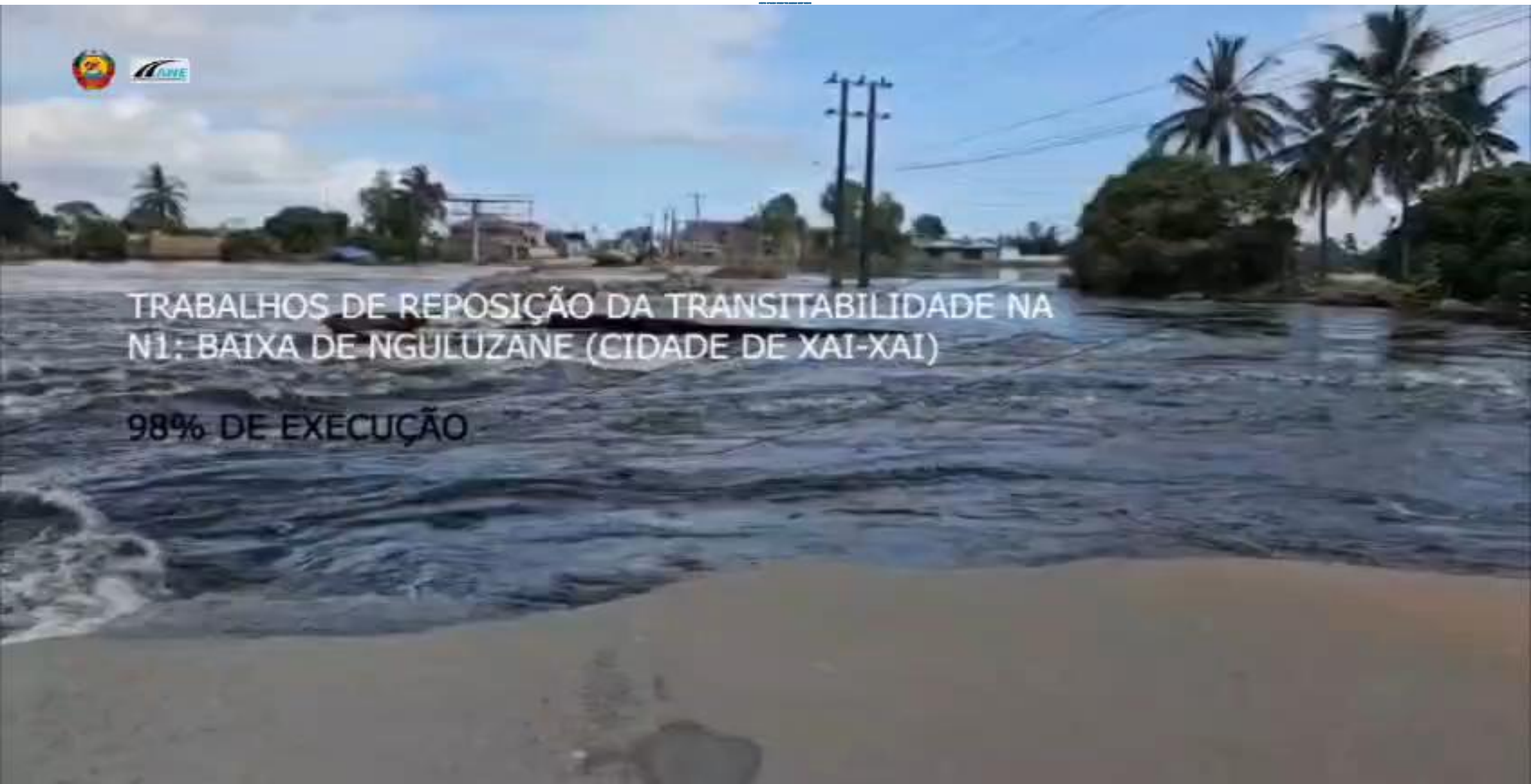
- Rehabilitate 1,817 km of roads currently in poor condition, at an estimated cost of USD 1.315 billion;
- Carry out periodic maintenance on 2,080 km of roads currently in fair condition, at an estimated cost of USD 312 million;
- Provide annual funding for routine maintenance of 20,000 km of the road network, at a cost of USD 210 million per year;
- Provide annual funding for emergency road works, at a cost of USD 160 million.

6. FINAL CONSIDERATIONS

- The climate-related shocks are increasing in frequency and impact, posing a structural risk to road infrastructure;
- Many failures were associated with inadequate hydraulic capacity and overtopping;
- Routine maintenance of drainage systems can prevent costly emergency interventions;
- The scale of damage demonstrates that current financing mechanisms are not sufficient to absorb recurrent emergency events;
- Emergency interventions are diverting resources from routine maintenance, leading to a growing backlog and deterioration of the road network.

7. VIDEOS BAIXA DE INCOLOANE

7. VIDEOS BAIXA DE NGULUZANE



THANK YOU