Mozambique experience and learnt lessons from the Natural Disaster

Disaster impact on the Socio-economic and Communication Sectors

16th September 2019

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INTRODUCTION

- This presentation aim to share Mozambique experience and learnt lessons from the disaster
- Brief Current stage of the Communications Market, Share the Impacts on socio-economic and Communication infrastructures
- Actions taken by several organizations in response to natural desasters: the tropical Cyclones IDAI and Kenneth
- Cyclone IDAI affected communications in 4 Central provinces: Sofala, Manica, Tete and Zambézia, and;
- Cyclone Kenneth affected communications in 2 provinces: Cabo Delgado and Nampula.

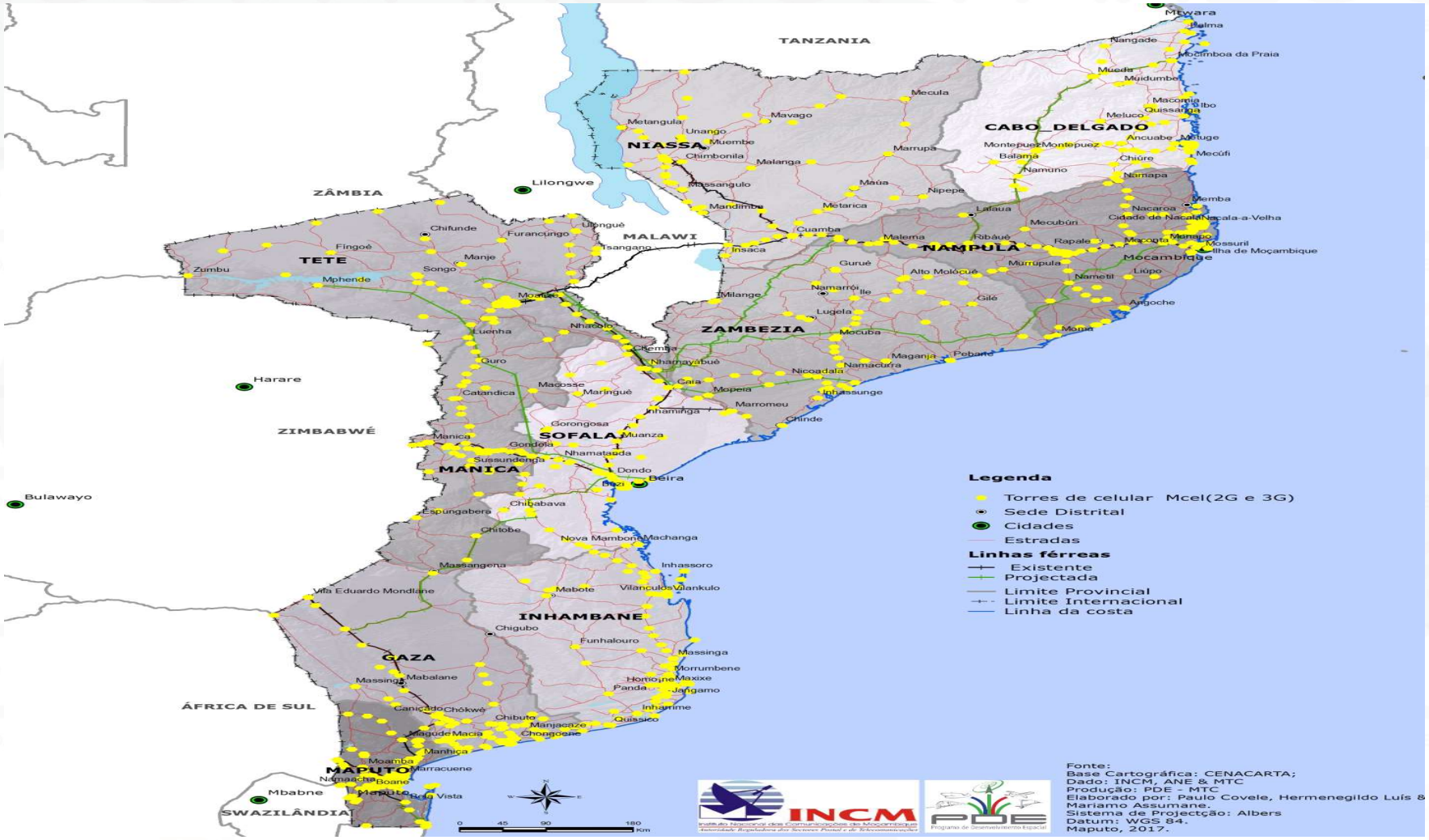
Country Background

Total area= 801,590SqKM

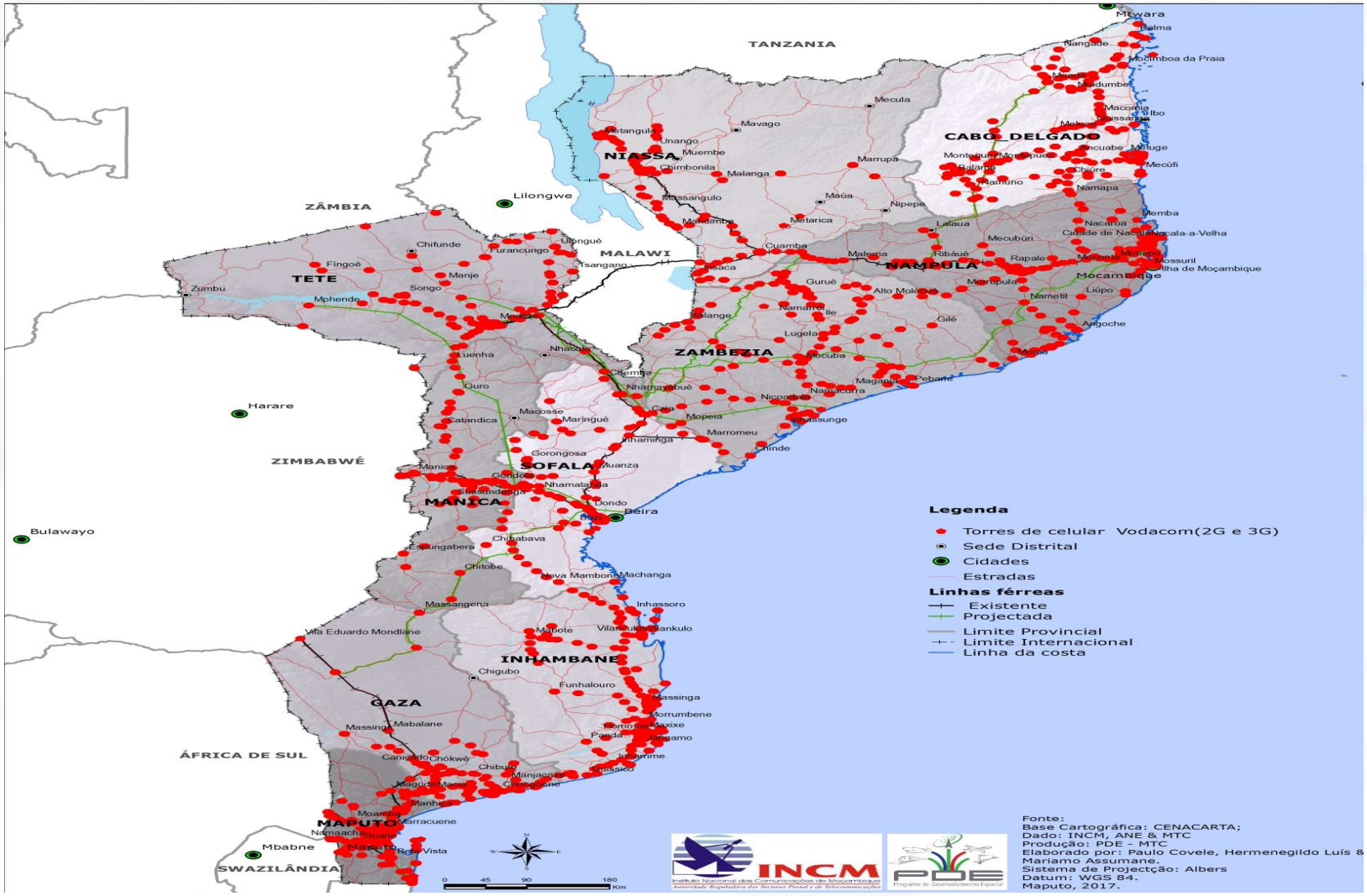
784,090 SqKM= land
17,500 SqKM =water bodies.

Census	2007	2017
Total	25M	27M%
Urban	30%	33.4%
Rural	70%	66,6%

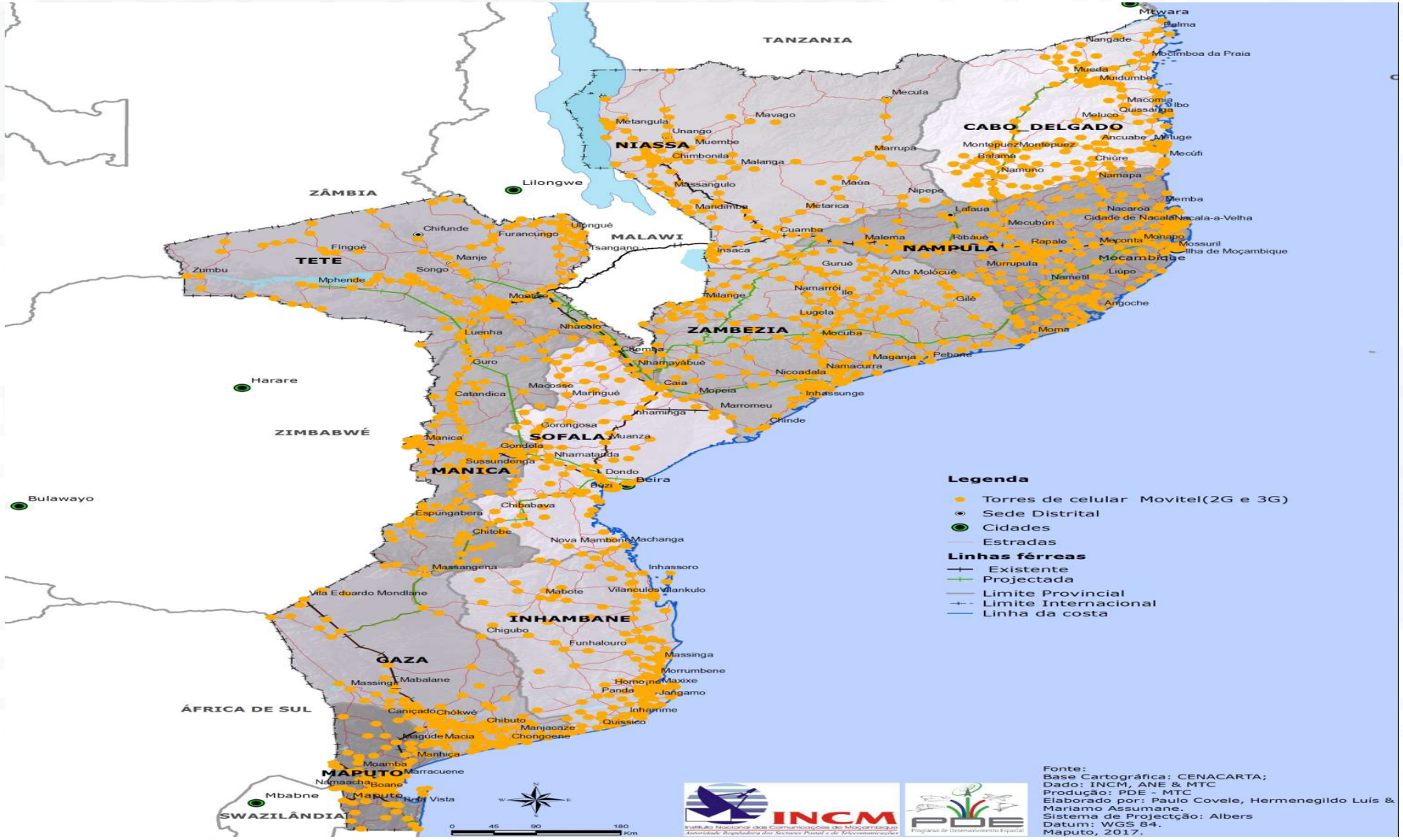
Mozambique Communication Market_TMcel Coverage 2018



Mozambique Communication Market_Vodacom Coverage 2018



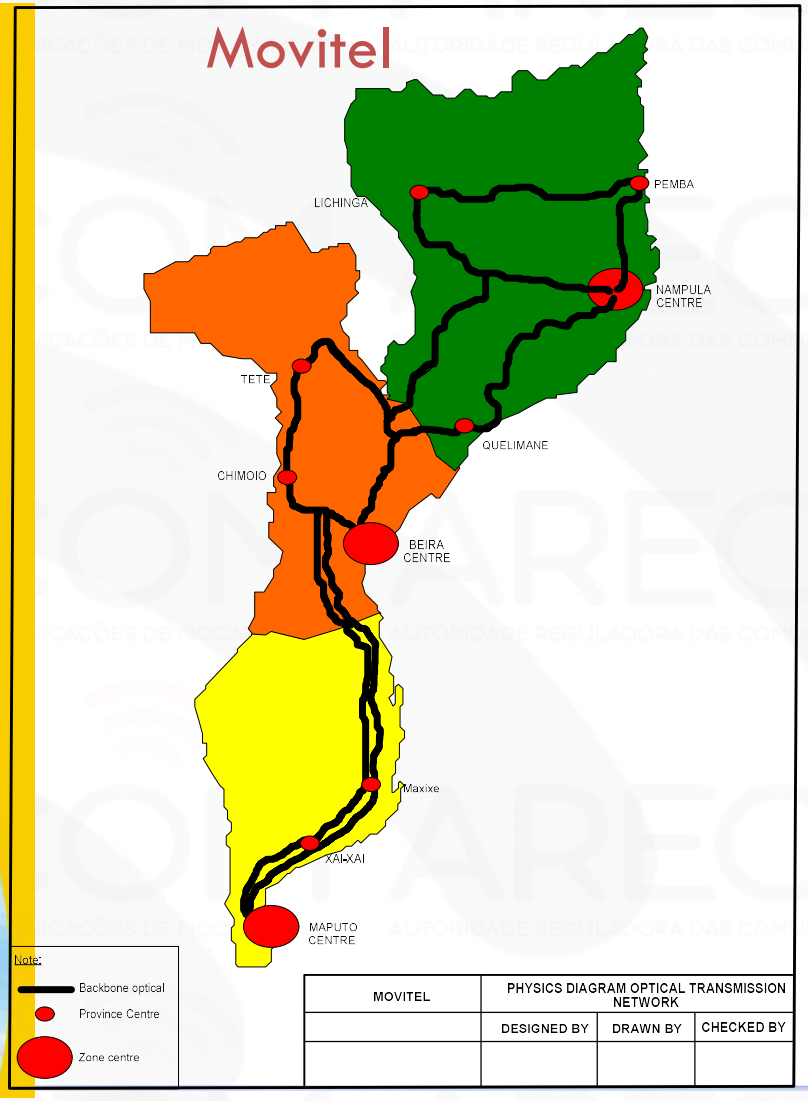
Mozambique Communication Market_Movitel Coverage 2018



Transmission Backbone

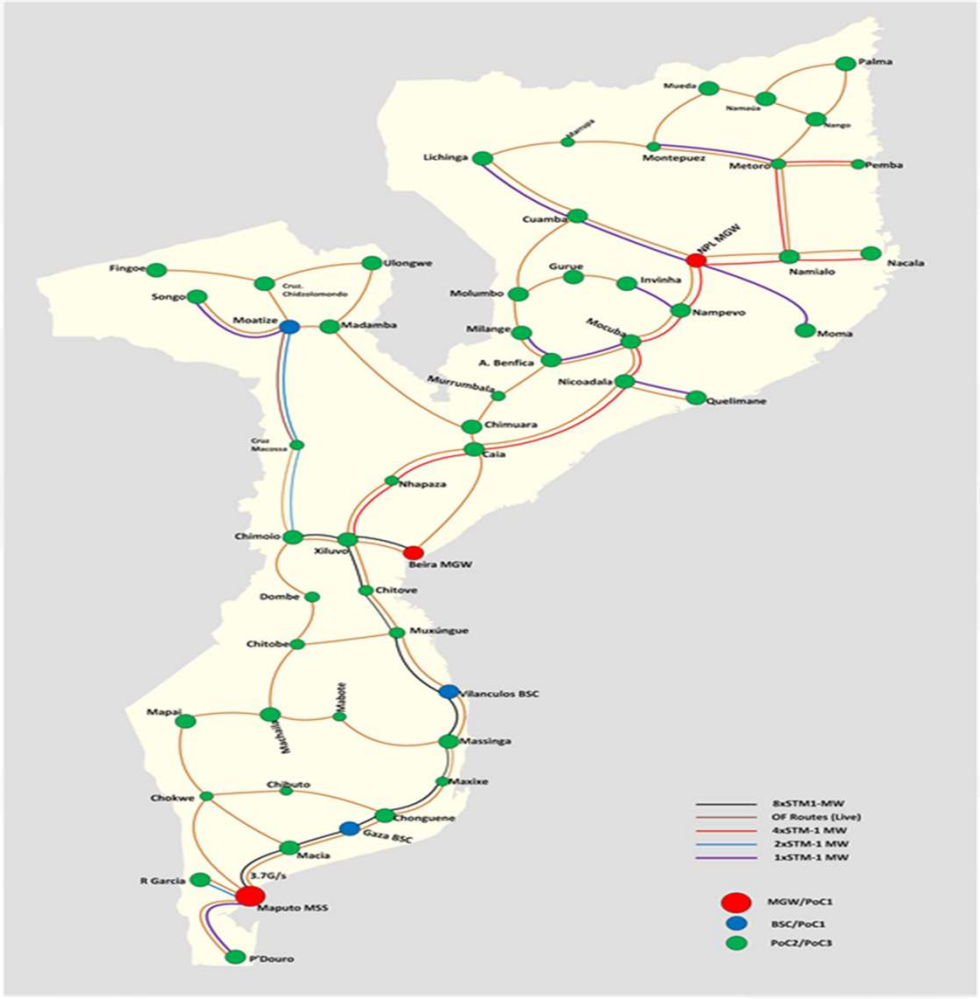
_TmCel

Movitel



Transmission Backbone

Vodacom



Internacional SEACOM Submarine cable-African cable system

- **In Operation_2009**

- **Owned by International Telecom Operatos and by the Following Countries: South África, Tanzânia, Quénia, Djibuti, Mauritius, Índia e France;**
- **Provide BB connection via Submarine Fiber Optic laid along Eastern Coast of Africa;**
- **Allow connectivity Hinterland Countries.**

Internacional EASSY-East African Submarine Cable System

- **In Operation_ 2010**

- **Owned by Public Telcos**
- **It allows broadband connections via a submarine fiber optic cable along the Eastern Coast of Africa;**
- **The cable links South Africa (Durban) to Sudan (Port Sudan), with mooring point in Maputo;**
- **This cable allows Mozambique to interconnect with other international cable systems.**

Mobile Coverage

All Provincial and District Capitals, 86% of Administrative posts, 50% of Localilies, as well as all Municipalitiess e Development Corridors are covered by cellular mobile service.

In Short, 85% of the Country Covered

Access Infrastrutures

Global	TECHNOLOGY			
	2G	3G	CDMA	TOTAL
BTS	5,150	2,788	47	7,985

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

- **According to Global Facility for Disaster Reduction and Recovery, "Mozambique is the third most at-risk country in Africa when it comes to extreme weather";**
- **Natural hazards: severe droughts; devastating cyclones and floods occur in central and southern provinces;**
- **In 2000, Tropical Cyclone Leon-Eline had been the strongest cyclone to ever hit Mozambique. It ripped through the region, with winds just over 210 kph (130 mph) and resulted in about 800 deaths;**
- **Tropical Cyclone Dineo 14 March 2017;**
- **Normally is one Cyclone every 9 years but this time, Two in Six Weeks;**
- **The most recently Cyclone IDAI, delivered heavy rains for days before and after making landfall on March 14, with winds near 224km/h affected communications from and to Sofala, Manica, Tete, Zambézia, and two weeks later Cyclone Kenneth affected Nampula, Niassa and Cabo Delgado provinces.**

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

- **The two Cyclones IDAI and Kenneth affected communications from and to Sofala, Manica, Tete, Zambézia and Niassa provinces, as well as communications from and to Cabo Delgado and Nampula provinces, respectively.**
- **Findings: Damage caused included cutting off the optical fibre transmission network, radio communication systems, overturned towers and respective antennas, cables as well as the station controllers equipment.**
- **Lack of Powers in some Sites.**
- **Access roads and bridges damaged**

Disaster evaluation and Impacts on Communications infrastrutures

TROPICAL CYCLONE KENNETH

Disaster evaluation and Impacts on socio-economic and Communications infrastructures- constraints

- **TmCel Submarine Cable out of service;**
- **3 transmission Backbone Affected;**
- **Domestic Satellite Communication _IDR (Phase out);**
- **Meteorological System affected (no air traffic);**
- **Roads destroyed**
- **Extensive flooded areas;**
- **Financial System totally affected;**
- **Operators Funds reallocated;**

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

TROPICAL CYCLONE IDAI

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

CYCLONE IDAI

Province	Capacity installed			Affected BTSs		
	TMCEL	VM	MV	TMCEL	VM	MV
Sofala	165	313	237	90	235	249
Manica	112	185	224	63	42	
Tete	137	242	228	42	37	
Zambezia	144	291	297	56	34	1
Total	558	1031	98	251	348	250

In total there were 849 affected stations, of which 251 were TMCEL, 348 were Vodacom and 250 were Movitel.

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

CYCLONE IDAI

Province	Affected Subscribers		
	TMCEL	VM	MVTL
Sofala	212.600	547.609	335.009
Manica	189.921	138.961	444.832
Tete	102.524	493.382	365.699
Zambezia	143.639	552.979	873.487
Total	648.684	1.732.931	2.019.027

In total there were 4.400.642 Subscribers affected by Tropical Cyclone IDAI

Disaster evaluation and Impacts on socio-economic and Communications infrastructures

TROPICAL CYCLONE KENNETH

Província	Capacidade Instalada			Estacões Afectadas		
	TMCEL	VM	MVTL	TMCEL	VM	MVTL
Cabo Delgado	121	304	160	19	67	60
Nampula	230	470	415		0	0
Total	351	774	575	19	67	60

In total there were 146 affected stations, of which 19 were TMCEL, 67 were Vodacom and 60 were Movitel.

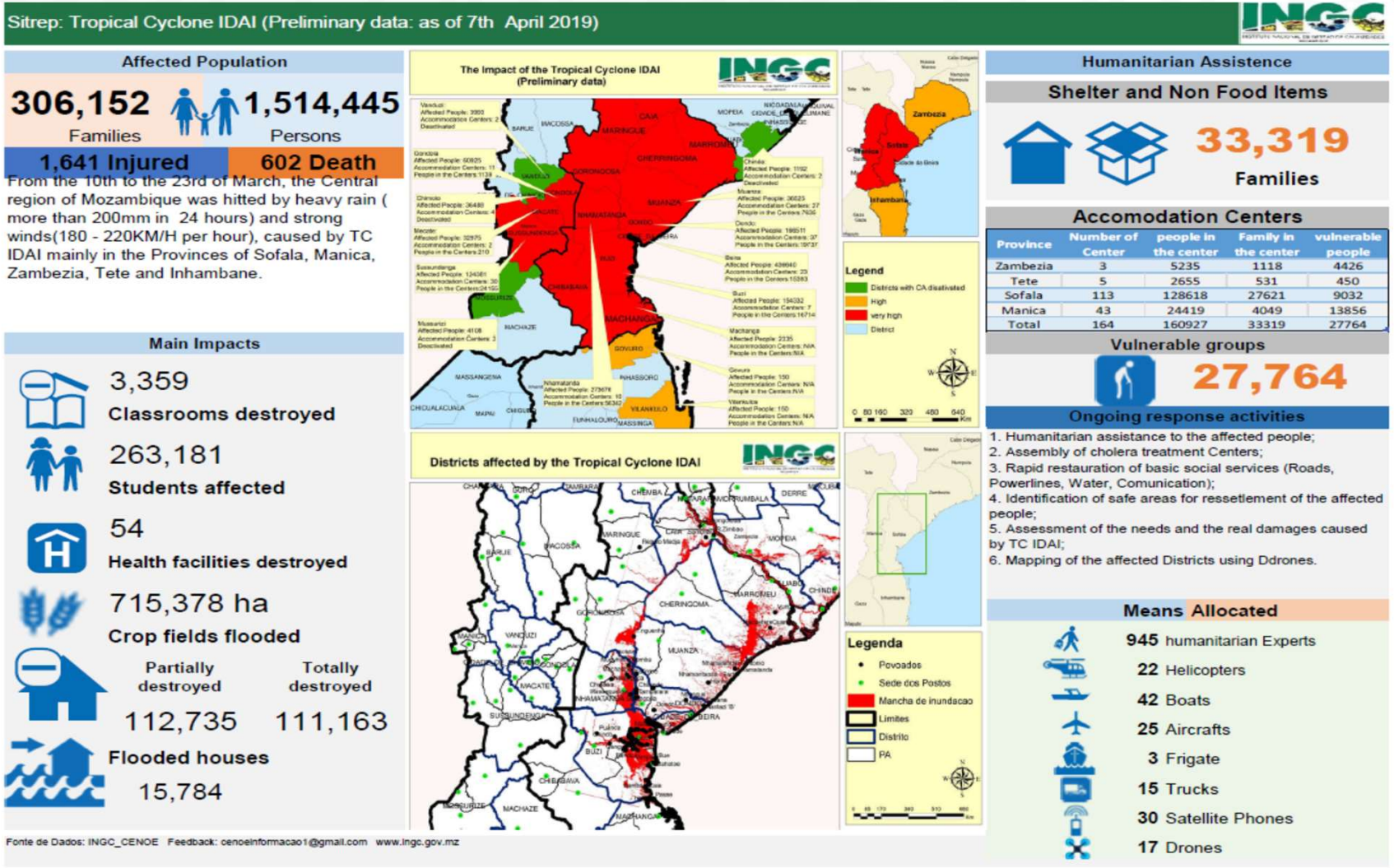
Disaster evaluation and Impacts on socio-economic and Communications infrastructures

TROPICAL CYCLONE KENNETH

Província	Affected Subscribers		
	TMCEL	VM	MVTL
Cabo Delgado	72.804	284.128	570.746
Nampula	0	0	0
Total	72.804	284.128	570.746

In total there were 927.678 Subscribers affected by Tropical Cyclone Kenneth ,

Disaster evaluation and Impacts on Communications infrastructures- CYCLONE IDAI



Disaster evaluation and Impacts on Communications infrastructures

_TROPICAL CYCLONE IDAI

ETC response to Disaster and constraints

- On request, two days later, The ETC deployed one staff member from FITTEST to Mozambique on 16 March to carry out assessments in the affected areas and set up common communications services to facilitate humanitarian response activities, if necessary.
- The ETC partners Ericsson Response, the Government of Luxembourg and Télécoms Sans Frontières, mobilized resources and communications equipment to support the demand of communications services to the humanitarian community in the affected areas.
- The ETC had also activated the Crisis Connectivity Charter Eutelsat and Inmarsat which had deployed connectivity equipment to further support response efforts.

ETC response to Disaster and constraints

Cyclone Idai

- ETC connectivity services in areas affected by Cyclone Idai in Sofala province were transitioned to local commercial solutions at the end of May. By then, more than 1,800 humanitarians from 440 organisations registered to access the connectivity services.
- The ETC established an SOC in Beira which was deactivated on 25 July after three months of operation.
- As part of its S4C activities, the ETC is collaborating with the National Forum of Community Radios in Mozambique (FORCOM) to rehabilitate damaged 6x community radios in Buzi, Dondo, Beira, Nhamatanda and Gorongosa in Sofala province.

ETC response to Disaster and constraints

Cyclone Kenneth

- ETC had established a Security Operations Centre (SOC) for Very High Frequency (VHF) and High Frequency (HF) radios in Macomia to ensure safety and security of humanitarians working in that area.
- Throughout the ETC's response to Cyclone Kenneth, more than 346 humanit arian responders from 61 organisations registered to access ETC connecti vity services across Pemba, Ibo island and Macomia.
- The Support from ITU in 30 Satellite telephones for assistance in Emergency Communication means have helped the Government and rescue Team coordination);
- **Constraints**
- **Excessive Bureaucracy in Customs Clearance: delay in Disaster Relief**

Local Key stakeholders action

- Vodacom provided 3 Satellite telephones and Tmcel 2 Satellite telephones;
- Ministers and Senior staff from the key sectors were sent to the affected areas for direct coordination of actions and accountability.
- Infrastructure sharing aiming communications restoring as quickly as possible;
- Awareness Campaign to population in order to use MNO network where Communication were Restored via the respective operator.

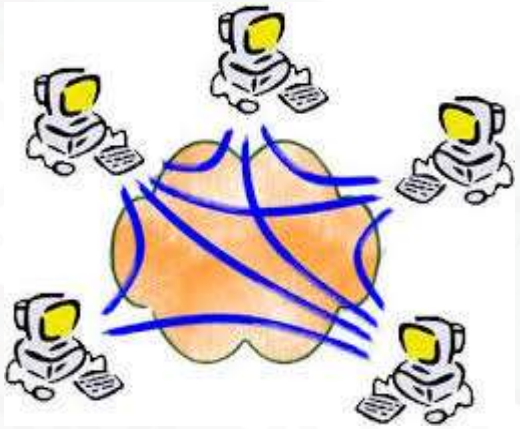
Learnt Lessons and Way Forward

- Construction of resilient infrastructures
- Implementation of redundancy at the critical points of the network by own or shared means
- Leading support and fundraising campaigns
- Contribute to bulk alerts

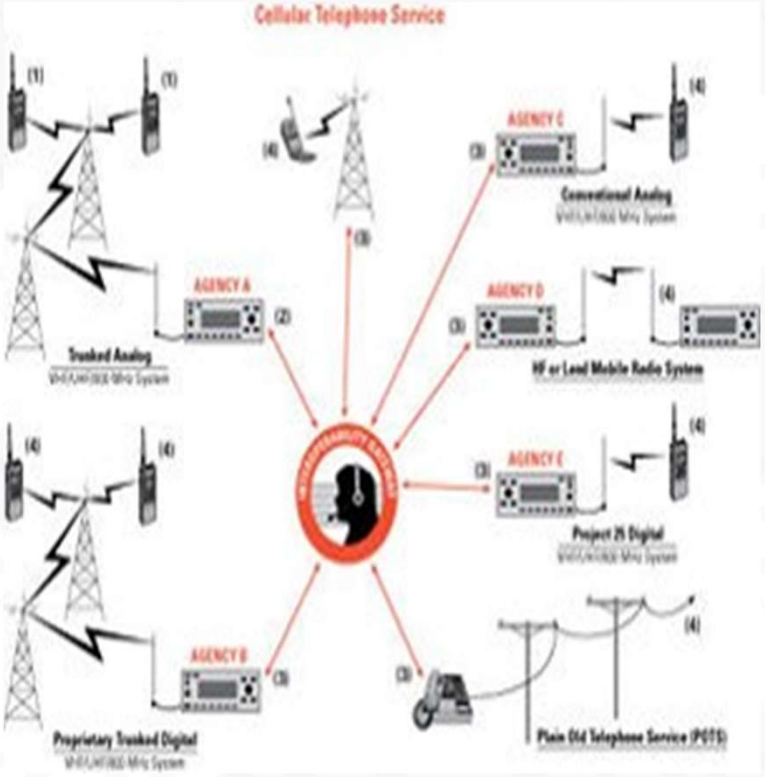
- Implementing CERTs
- Include in the drawings of the infrastructures situations of disasters
- Adopt alternative technologies to ensure communications in risk areas (including Satellite Communications)
- Customs Clearance in Disaster Relief

Learnt Lessons and Way Forward

- Design and implement a contingence plan
- Ensure the implementation of infrastructure sharing
- Ensure the implementation of redundancy measures for telecommunications infrastructures
- Design combined regional and international resources allocation and measures to timely respond to any emergency.



ARE WE READY FOR THE NEXT DISASTER?



THANK YOU!……. MERCY!...OBRIGADO!