Republic of Mozambique
State Administration and Public Function Ministry
National Institute for Disaster Management
INGC

CENOE
National Center for Emergency Operation

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Beijing 2016

Use of Space Technology and Disaster Risk Assessment in MOZAMBIQUE

INTRODUCTION

Mozambique

- **Location:** Southern Africa eastern coast (10 º 27 'e 26 º 52' south and 30 º 12 'e 40 º 51' east)

- **Surface:** 799,380 km2 and 2.700 km of coast line

- **population: 20,5 million (47,7% Man and 52,3% Woman);**

- **68,5% of population is rural;**
- **31,5% urbane;**

Economy:

- **80% of population – agriculture.**
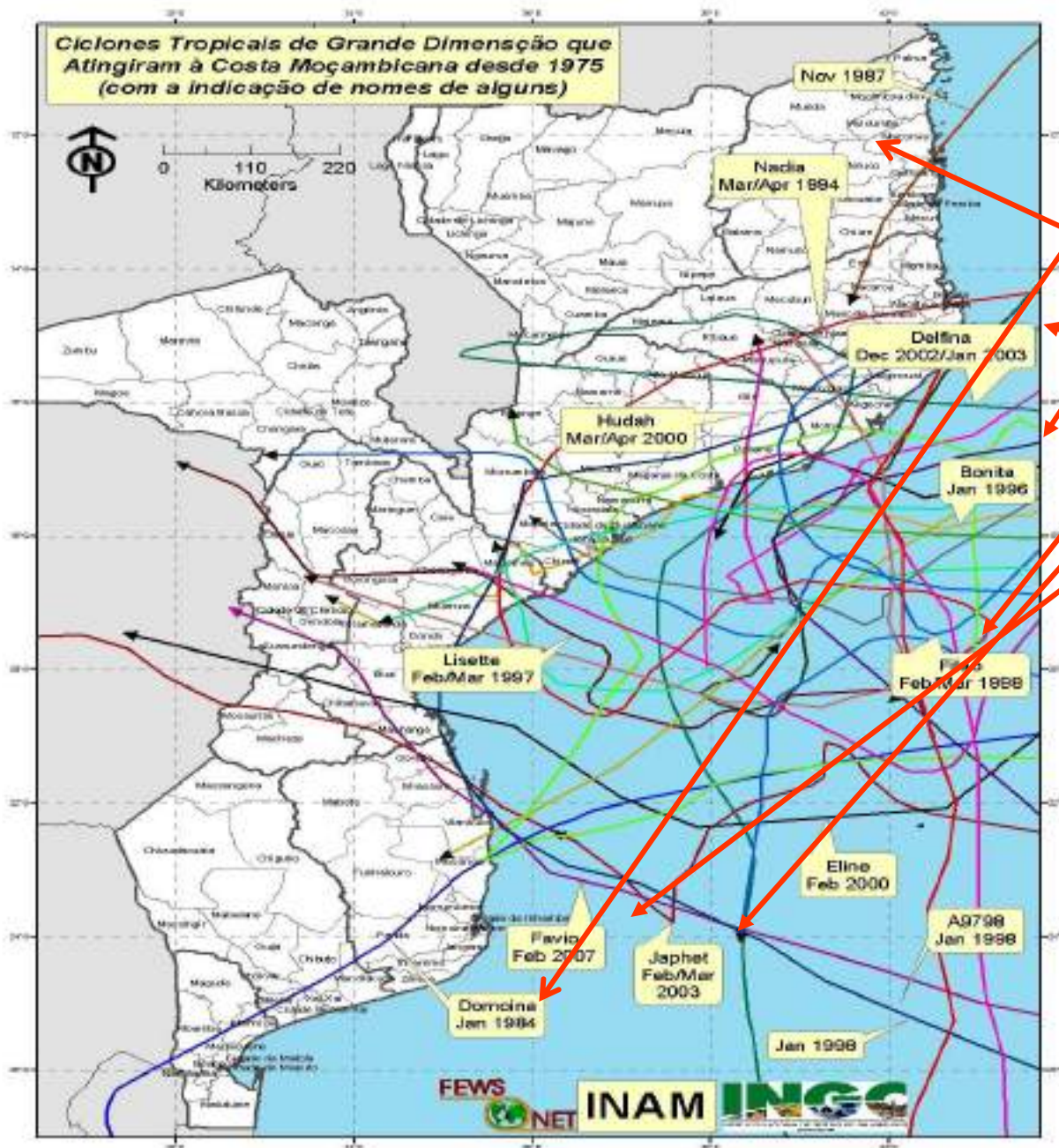

Official Language: PORTUGUESE

INGC

INGC operation

Direction and Coordination on Disaster Management

Strategy border to Guiding Plan (Context)

- **Vulnerability Reduction**

- **Prevention and Mitigation**

- **Response and Assistance**

Main Cyclone tracks:

Demoina: (109 óbitos, 80.000 afectados)

Nadia: (54 óbitos, 903.000 afectados);
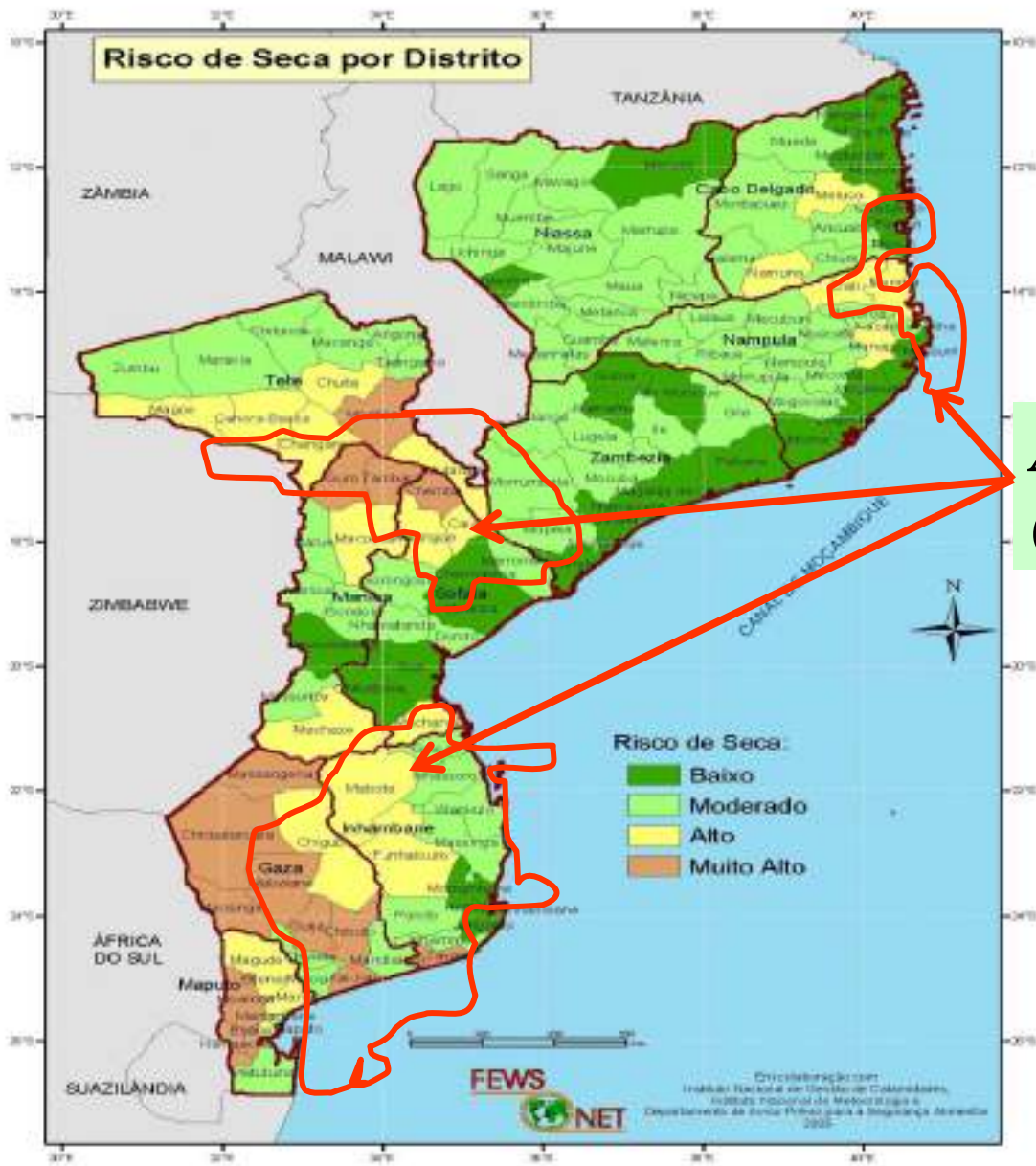
Bonita: (1 óbito)

Delfina: (59óbitos, 497021 afectados)

Filao: (100 óbitos, 500 afectados)
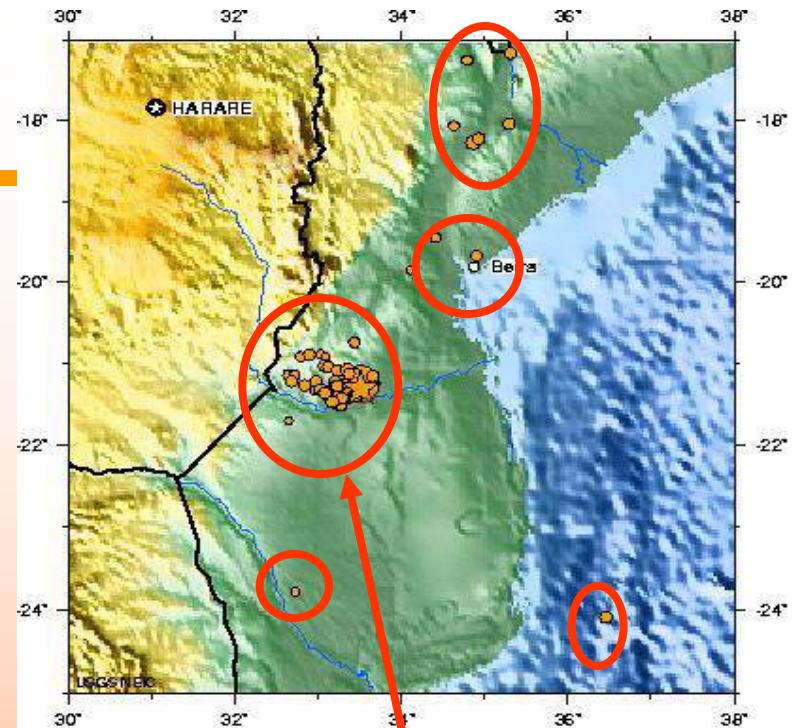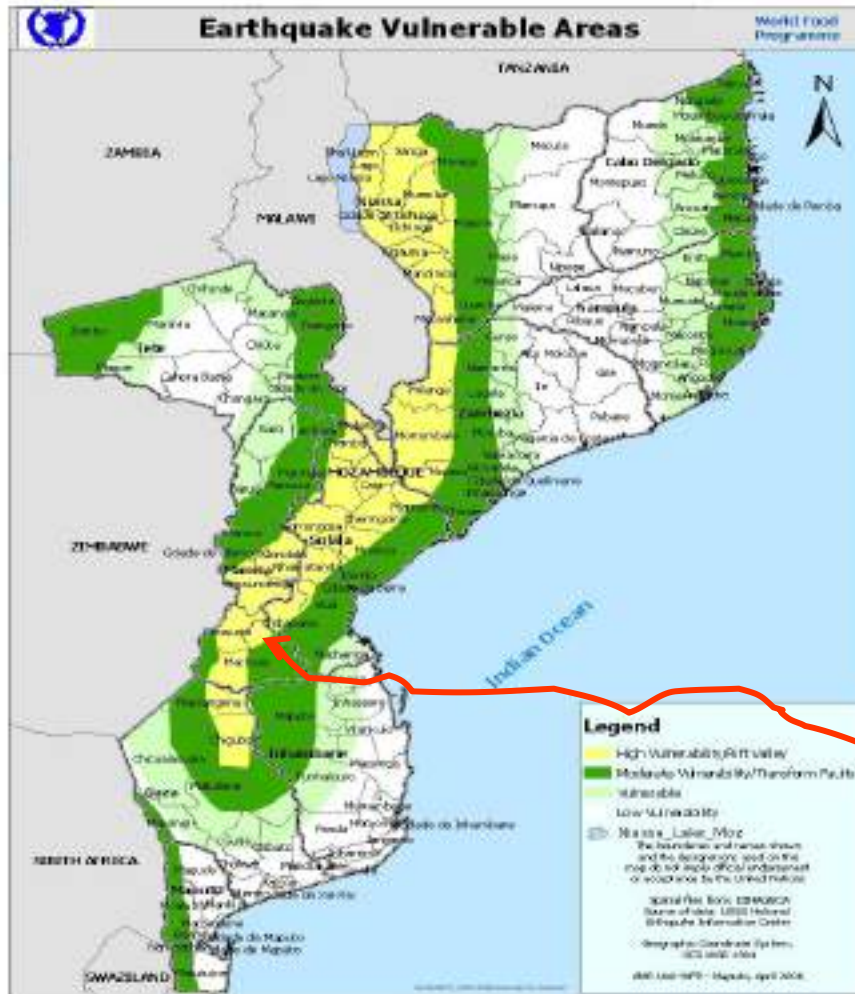
Japhet: (21 óbitos, 105.231 afectados);

Favio: (9 óbitos, 150.000 afectados).

Ano	Bacias Hidrográficas	óbitos	afectados
1972	Limpopo		
1975	Limpopo, Incomati		
1984	Limpopo, Incomati		
1985	Pungue, umbeluzi,Maputo, Incomati, Zambeze		
1997	Motomoli, Licungo, Lurio		
1998	Govuro	23	70.000
1999	Umbeluzi, Incomati, Limpopo, Pungue, Zambeze, Lugela		400.000
2000	Limpopo,incomati, Umbeluzi, Save, Buzi	699	4.500.000
2001	Pungue, Zambeze, Chire, Licungo	113	553.000
2006	Zambeze		
2007	Zambeze, Buzi		181.000
2008	Zambeze, Pungue, Buzi, Save, Lucungo, Messalo	9	102.000

Arid and Semi – arid zones (1.5 Million affected)

Vale do Rift

Earthquake Vulnerable Areas — World Food Programme

Legend
- High Vulnerability/Rift Valley
- Moderate Vulnerability/Transform Faults
- Vulnerable
- Low Vulnerability

MOZAMBIQUE
2006 02 22 22:19:07 UTC Depth: 11 km, Magnitude: 7.0
Seismicity 1990 to P

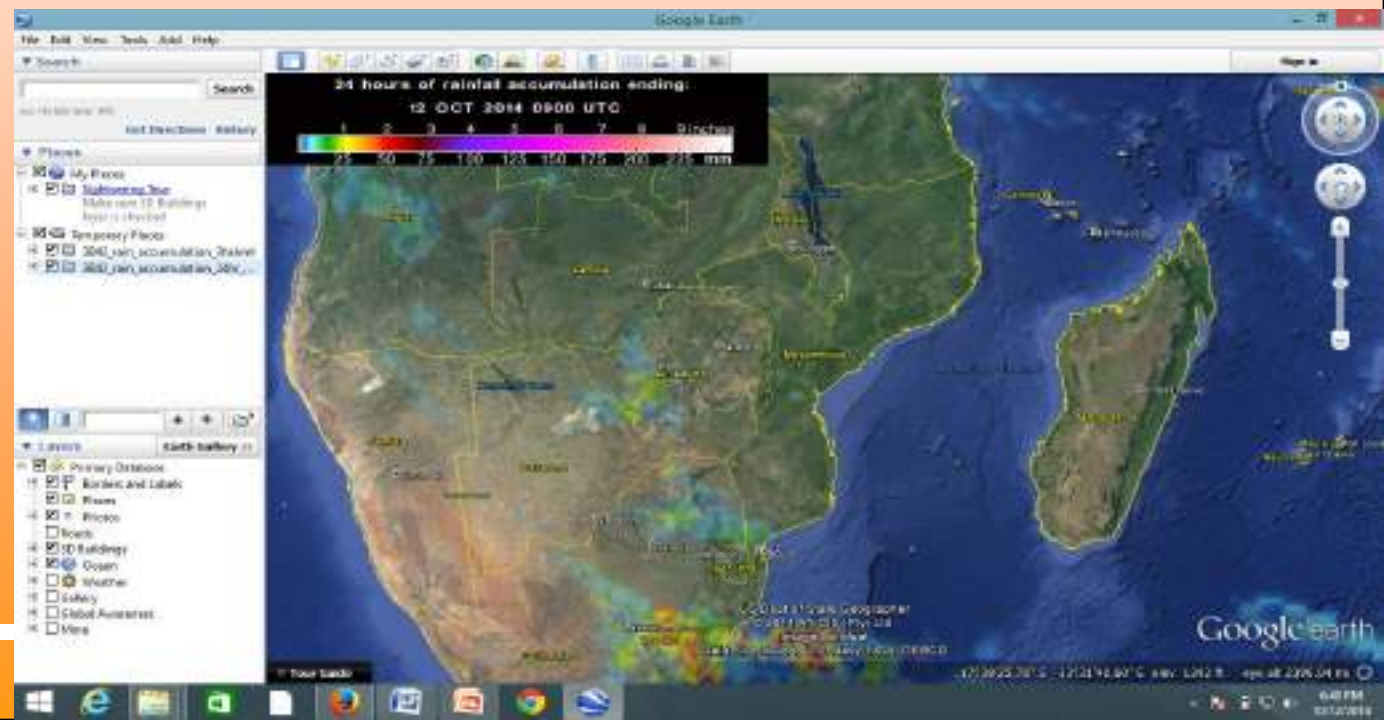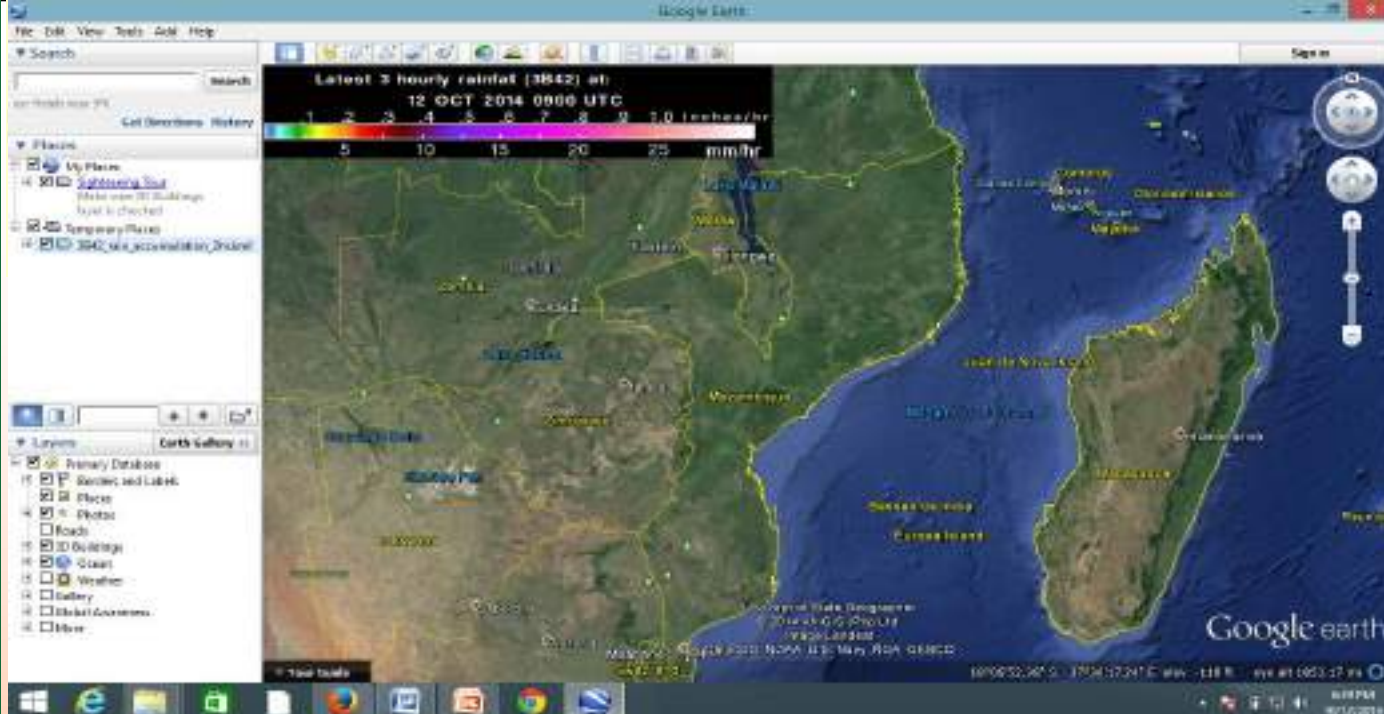*22Fev06 Sysm, with 7.0 magnitude in Machaze*

Afected 1.444

Death: 4

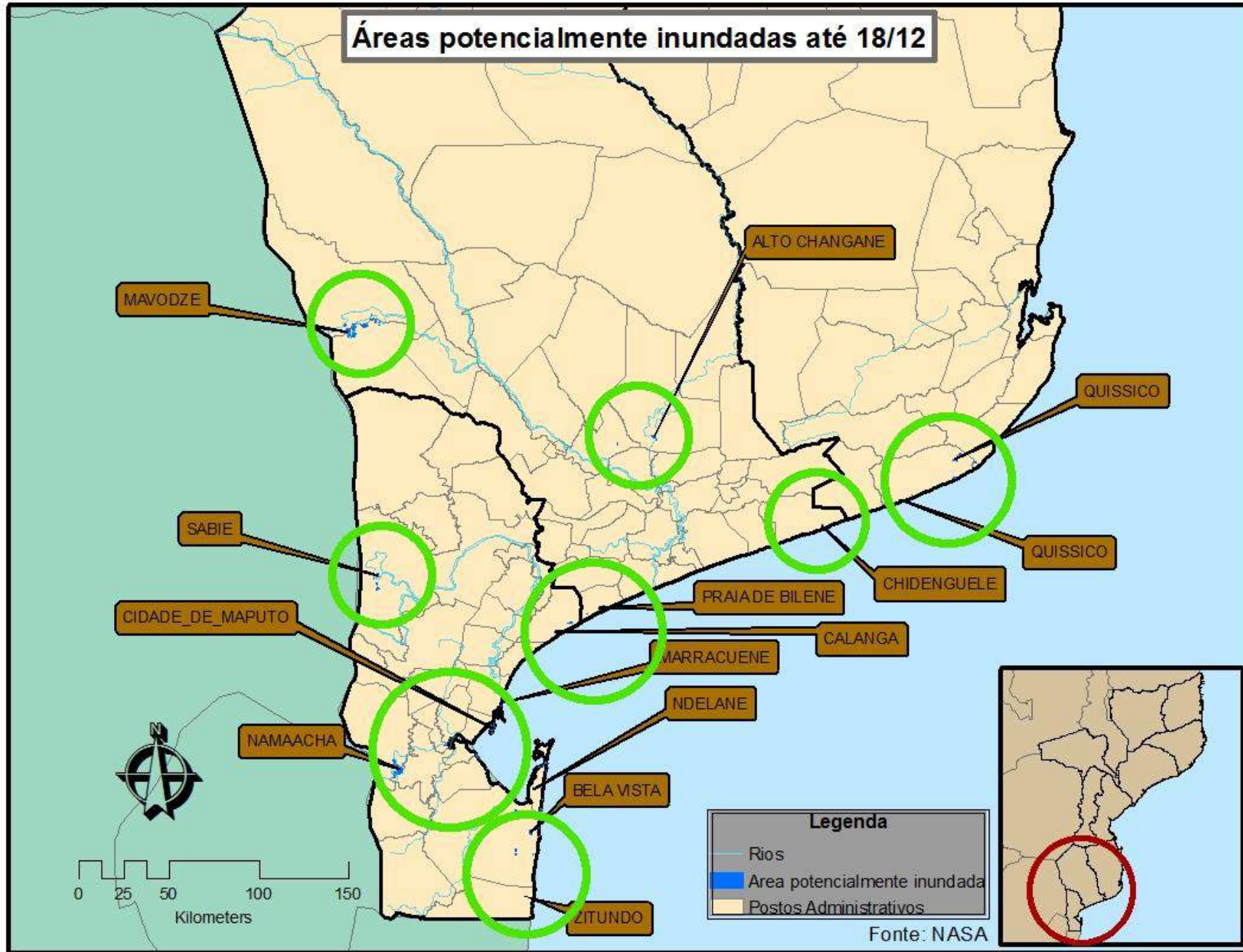# Use of Space Technologies for Disaster Management activities in Mozambique

The use of space technologies in Mozambique has started in the year 2009 through the production of maps for Decision Purposes
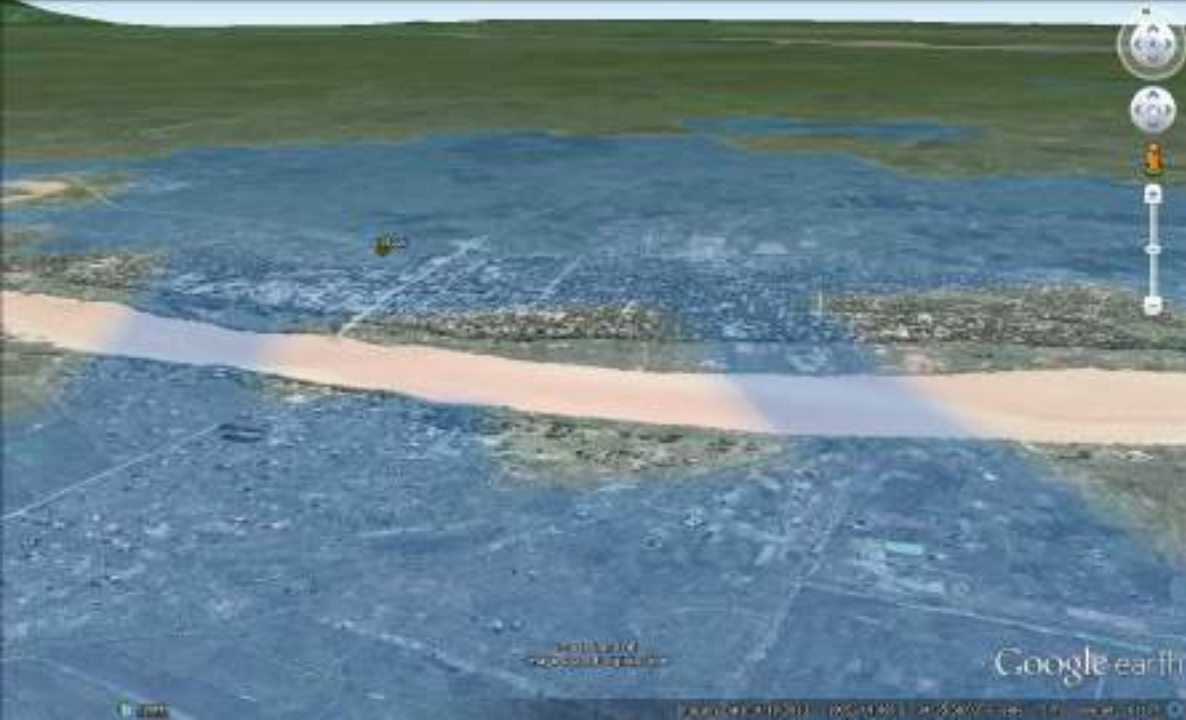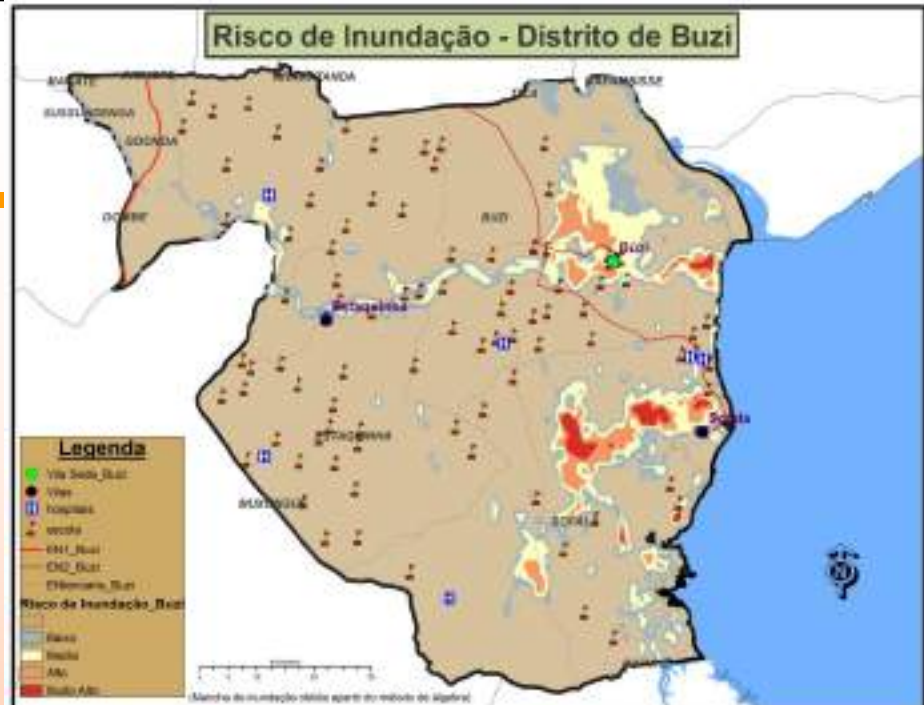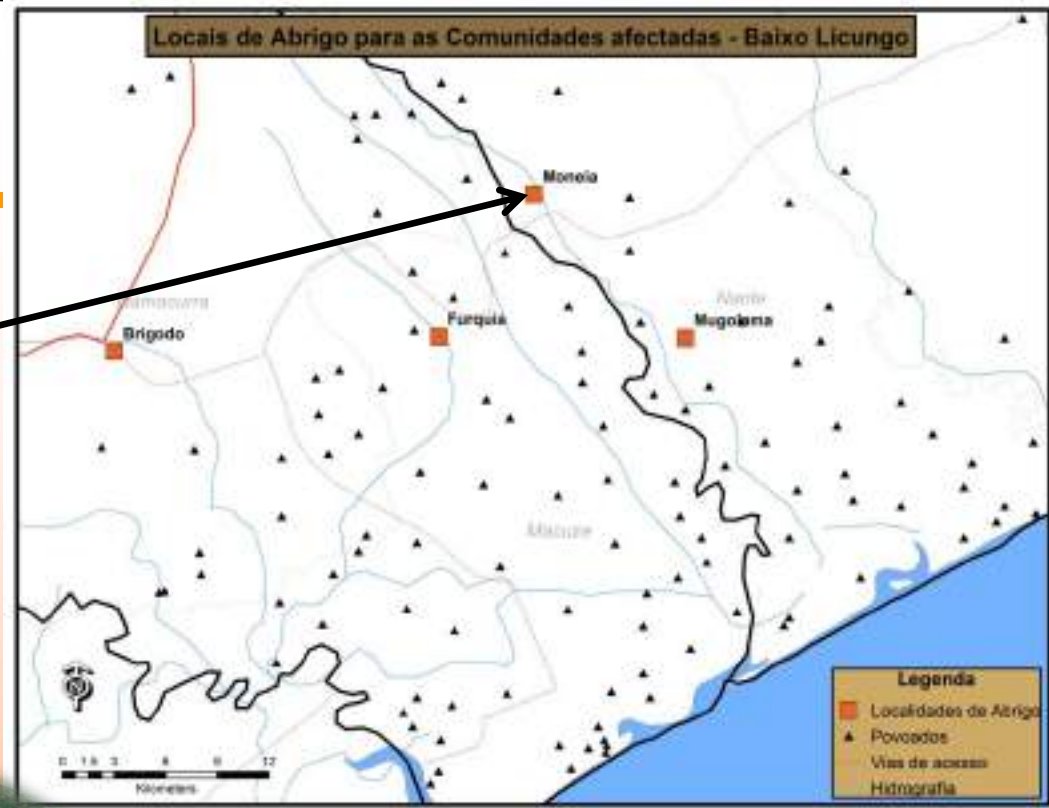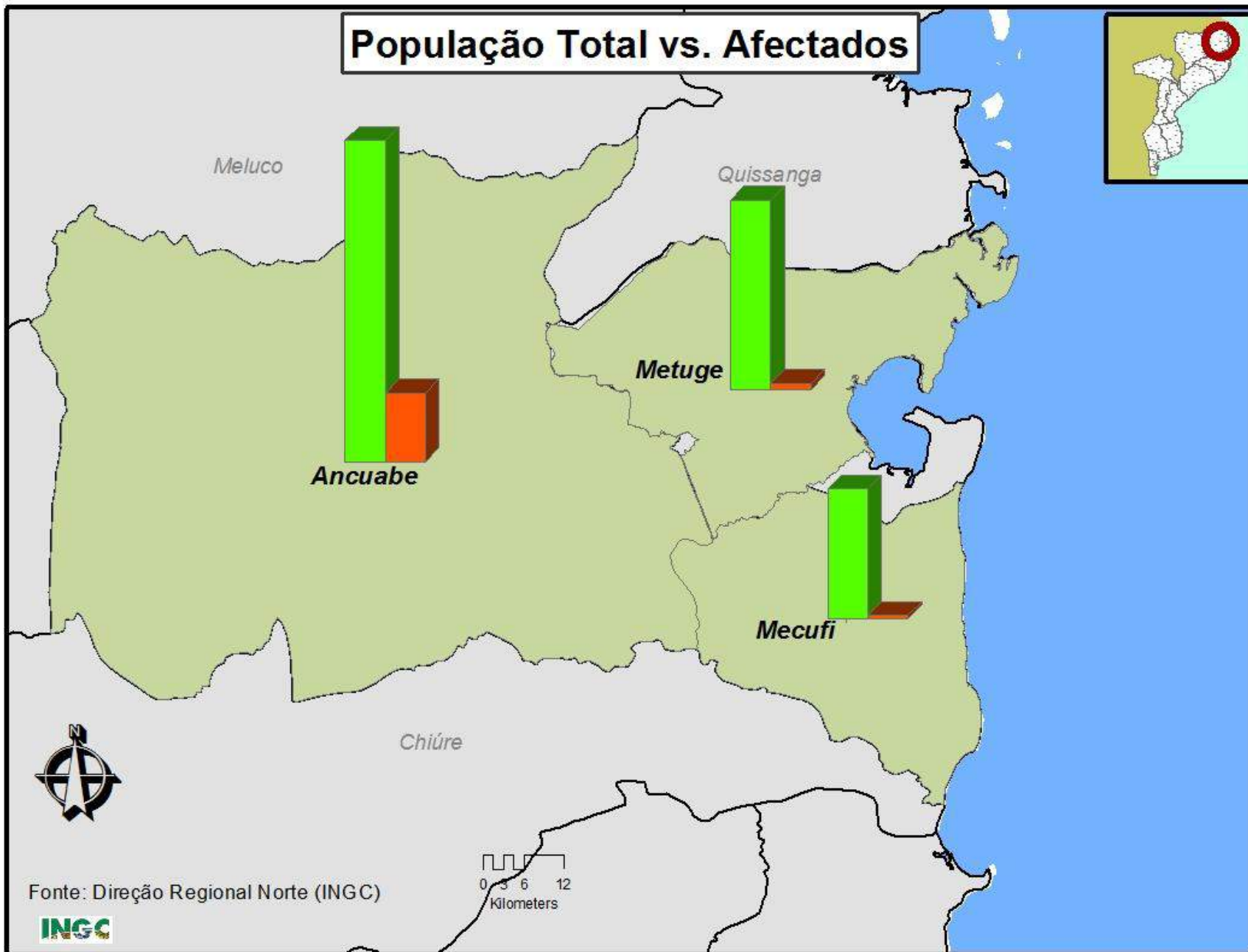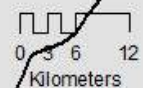
trmm.gsfc.nasa.

Áreas potencialmente inundadas até 18/12

ALTO CHANGANE

MAVODZE

QUISSICO

SABIE

QUISSICO

CIDADE_DE_MAPUTO

PRAIA DE BILENE

CHIDENGUELE

CALANGA

MARRACUENE

NDELANE

NAMAACHA

BELA VISTA

ZITUNDO

Legenda

Rios

Area potencialmente inundada

Postos Administrativos

Fonte: NASA

Kilometers
0 25 50 100 150

Simulação da possivel Trajectoria
Ciclone Hellen

Legenda

Posição actual

Ciclone Hellen
Velocidade dos Ventos
— 60 km/h
— 90 km/h
— 120 km/h
Posto Administrativo__em_risco
Posto Administrativo

Modelo obtida apartir do GDACS

0   105   210   420   630
Kilometers

GDACS

Risco de Inundação - Distrito de Buzi

NASA/ edcuser/ fewsips

Brigodo

Furquia

Megolana

Moneia

Macudane

Mateue

Muriziua

Moneia

Legenda

Localidades de Abrigo
Povoados
Vias de acesso
Hidrografia

Kilometers

Image © 2014 DigitalGlobe
Image © 2014 CNES / Astrium

Provincia da Zambezia

Legenda
- Povoados_em_risco
- Maximo de inundacao na area
- Distritos_Zambezia

Area de inundação

Legenda
- Rios
- Maximo de inundacao na area
- Distritos

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População Total vs. Afectados

Ongoing activities regarding use of Space Technologies in Mozambique

Área húmida e inundável - Município da Matola
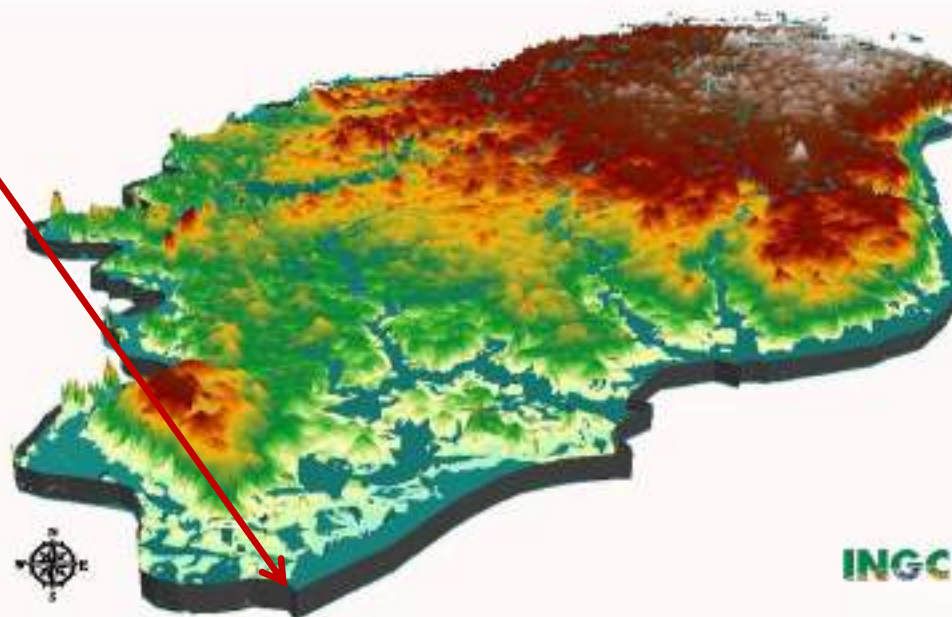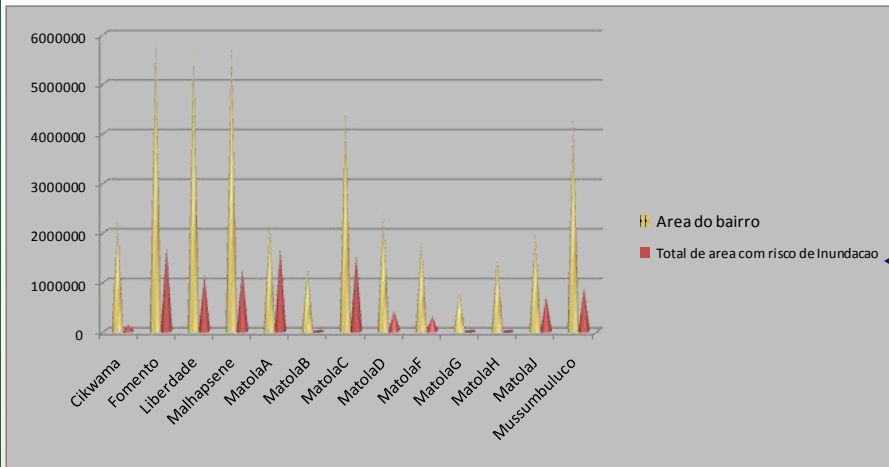
Infra-estruturas de Ensino em risco de Inundação
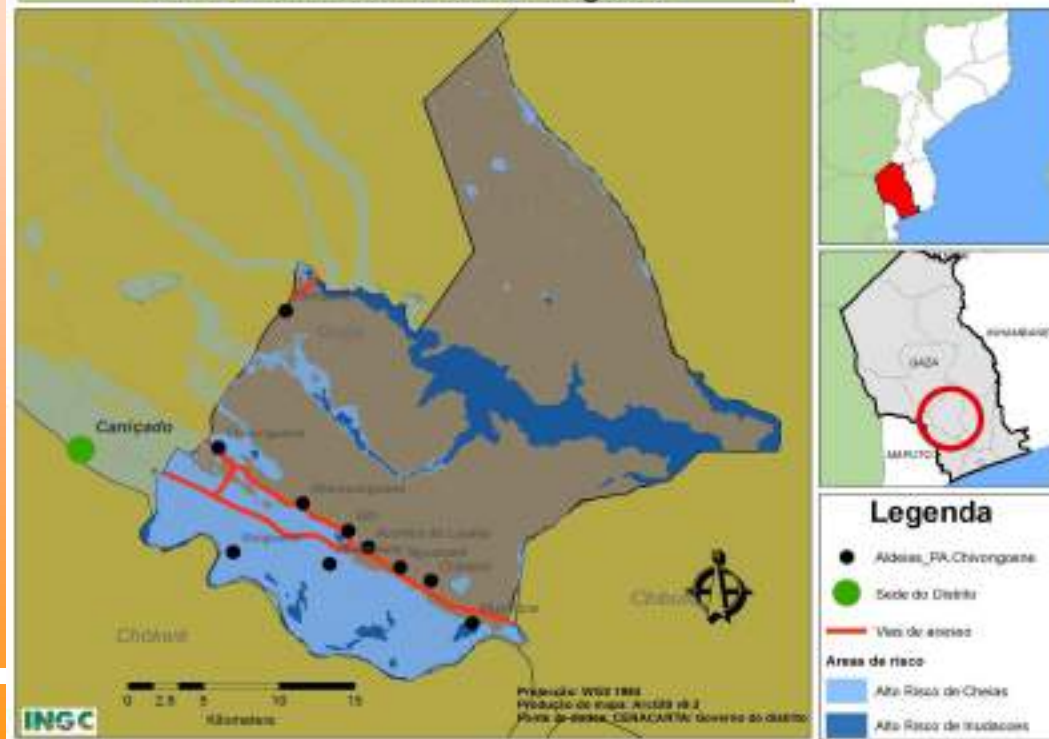Município da Matola
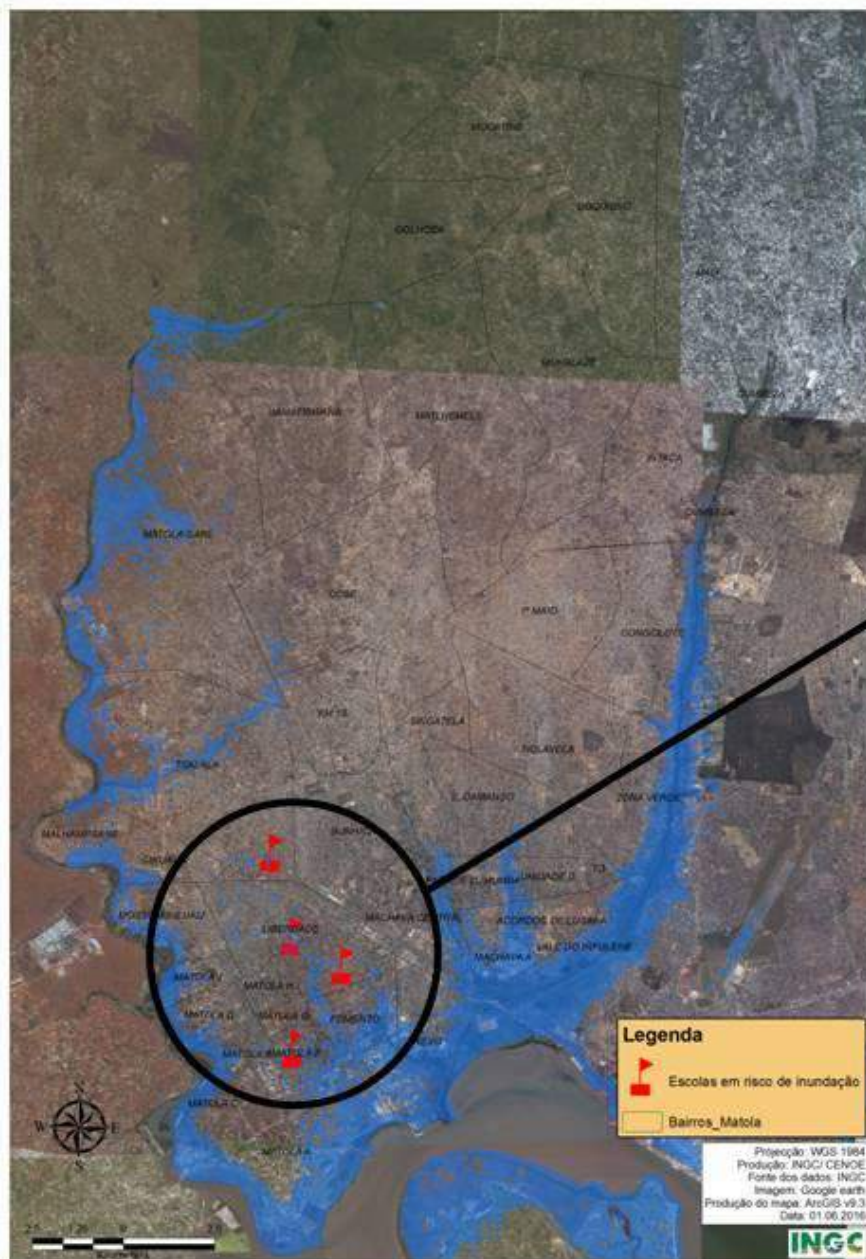
Mapping:
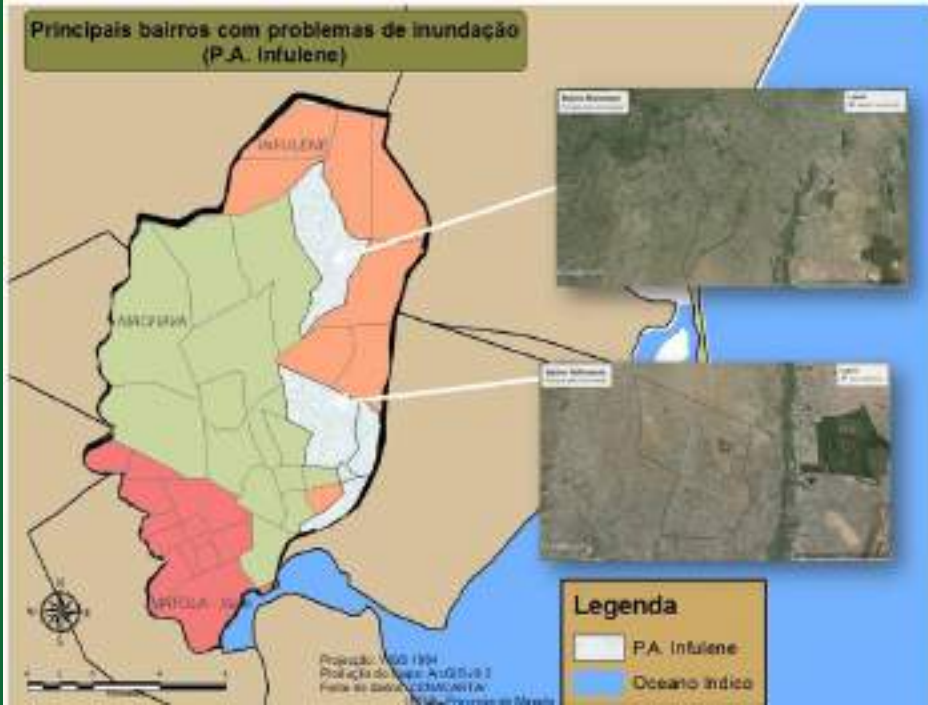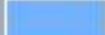
Áreas de risco de Cheias no distrito de Guijá
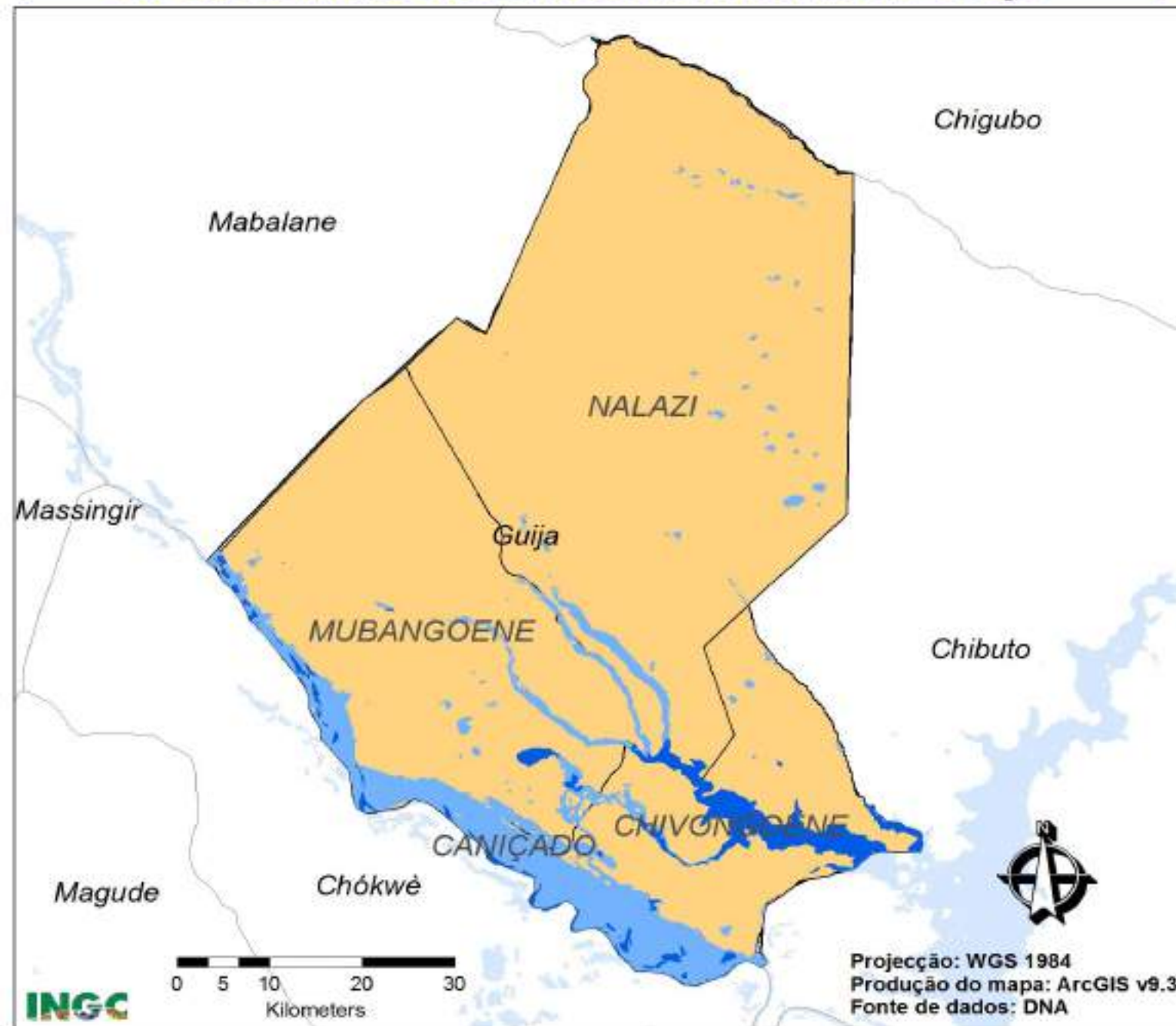
P.A. Canicado
Pontos que ficam interrompidos durante Cheias

Legend
Ponto de interrupcao
Posto Administrativo de Canicado

P.A. Canicado
Pontos que ficam interrompidos durante Cheias

Legend
Ponto de interrupcao
Posto Administrativo de Canicado

Principais com risco de Erosão
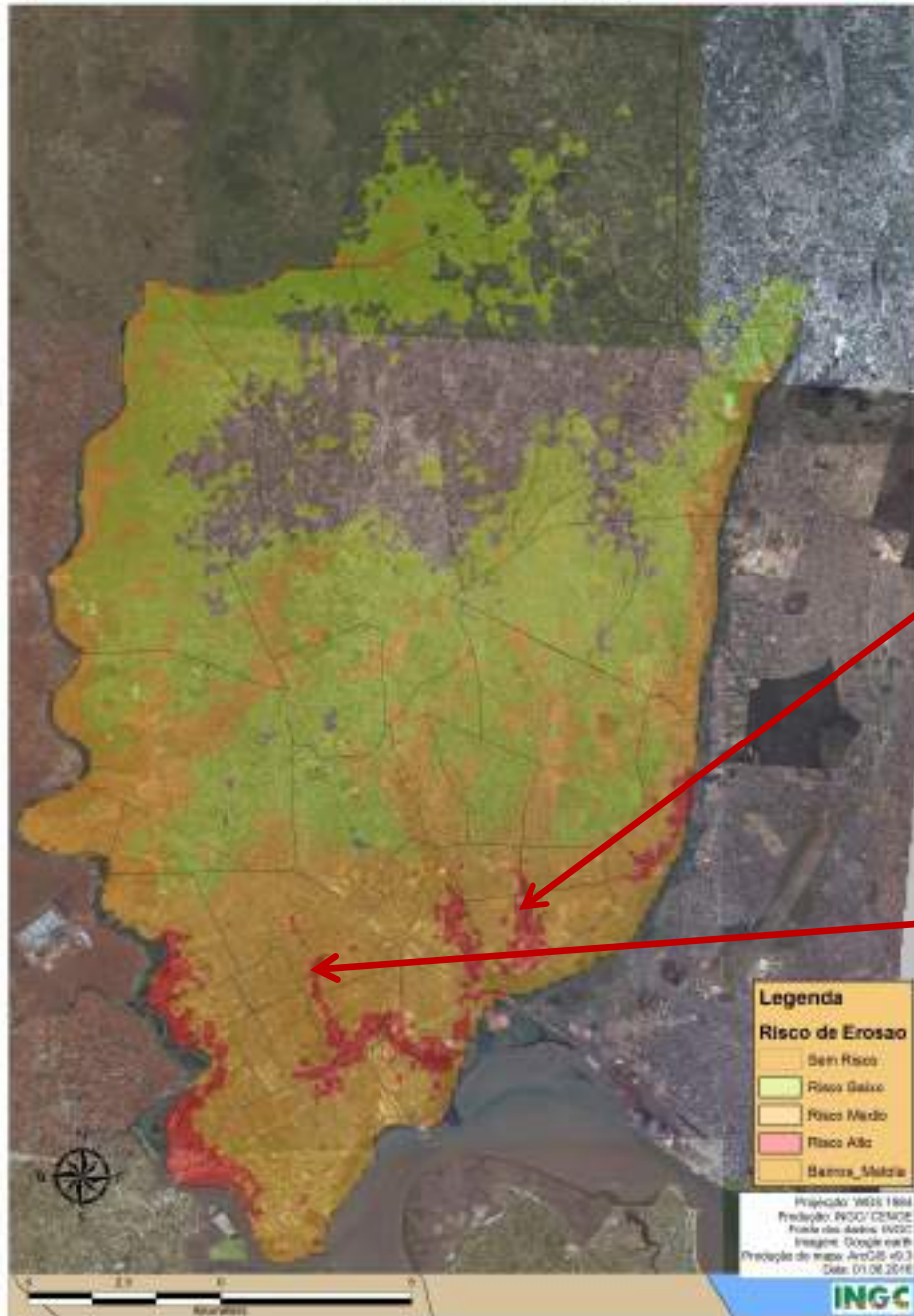Município da Matola

Legenda
Risco de Erosao
Sem Risco
Risco Baixo
Risco Medio
Risco Alto
Bairros_Matola

Area ardida entre 2001 - 2015

MANICA
SOFALA
INHAMBANE
GAZA
MAPUTO

NALAZI

MUBANGOENE

CHIVONGOENE

CANICADO

0 4.5 9 18 27
Kilometers

Projecção: WGS 1984
Produção do mapa: ArcGIS v9.3
Fonte de dados: CENACARTA/ Governo do distrito

INGC

Legenda

P.A_Guija

Queimadas entre 2001_2015

Distrito_de_Guija

Area ardida por Posto Administrativo

428,019 MUBANGOENE

428,038 CHIVONGOENE

214,002 NALAZI

0 CANIÇADO

NALAZI   MUBANGOENE   CANIÇADO   CHIVONGOENE

POSTO; POSTO

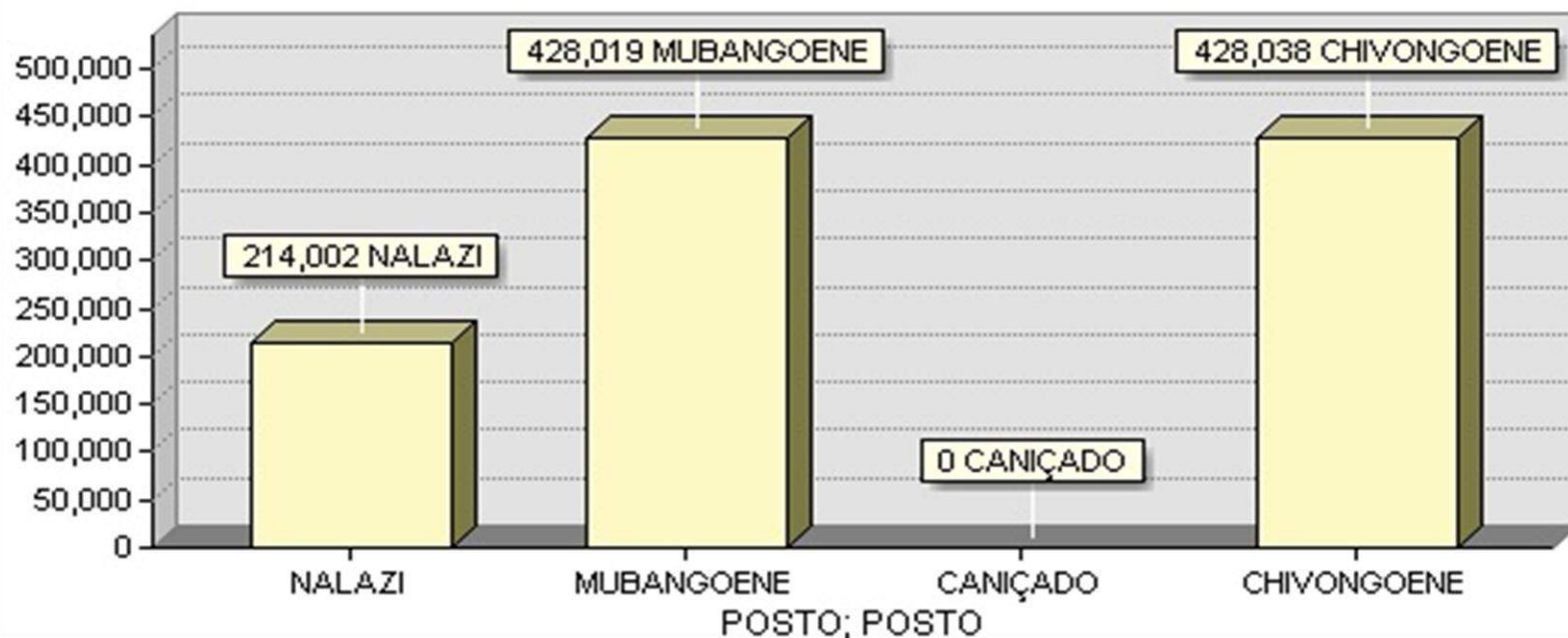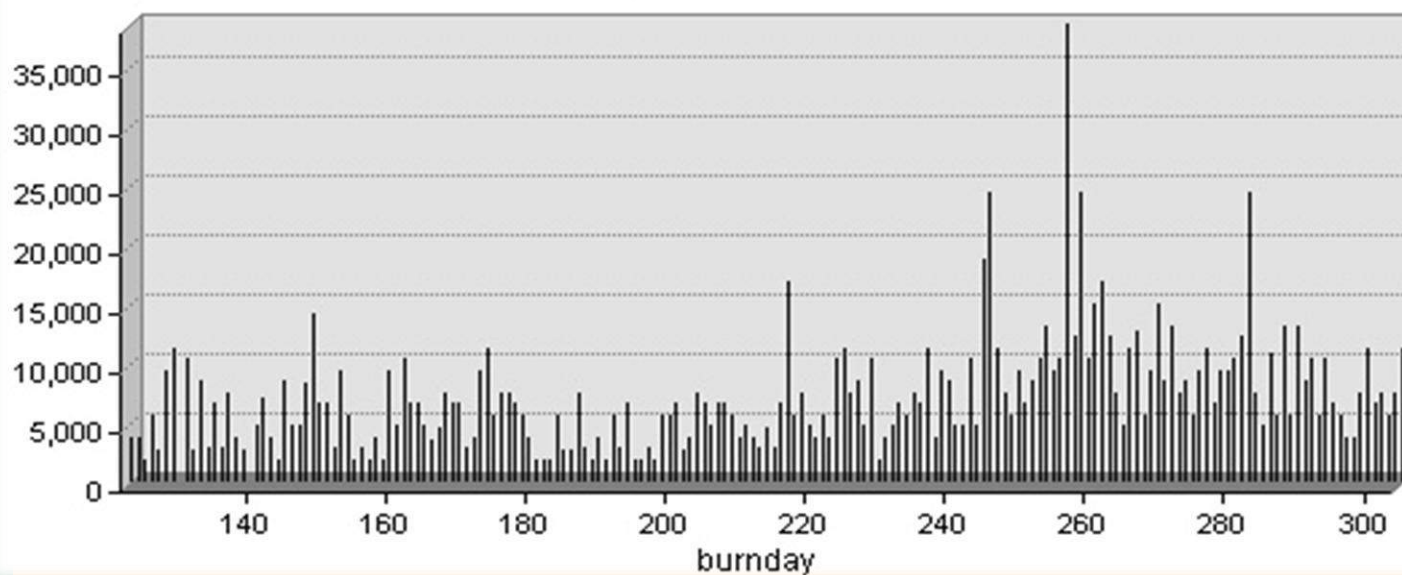## Grafico de Tendencia de Queimadas

burnday

Comportamento da Vegetacao entre 2010 e 2015

SITUAÇÃO DA SECA NO DISTRITO DE GOVURO
Assistencia alimentar por Povoado, Junho de 2016

SITUAÇÃO DA SECA NO DISTRITO DE GOVURO
Pessoas beneficiadas com assistencia alimentar, Junho de 2016

SITUAÇÃO DA SECA NO DISTRITO DE GOVURO
Distribuição de Furos de água por Povoado, Junho de 2016

SITUAÇÃO DA SECA NO DISTRITO DE GOVURO
Tipo de Fontes de Agua por Povoado, Junho de 2016

UN-SPIDER
Technical Advisory Mission
to Mozambique 8 – 12 October 2012

TAM TOR

Objectives	Output	Outcome
Review current **policies**, **procedures** and **mechanism** related to the use of space-based information and make recommendations.	**Policy level recommendations** for effective usage of space technology for disaster management will be submitted to the authorities.	**DRR and emergency response** is ensured through an **efficient** and **effective** usage of space technology for disaster management
To engage key **stakeholders** who are custodians of geo-spatial data related to disaster management	Identify mechanism for improved coordination among data providers and data users to boost information sharing amongst the stakeholders	Spatial data is available for disaster risk management, on timely basis and with higher interoperability.
Develop a **capacity building** strategy for stakeholder agencies	Medium and long-term capacity building plan and funding sources to be recommended, with facilitation through UN-SPIDER.	Top level decision makers are aware of technology trends, best practices and needs in . Critical mass of trained personnel on utilization of space technology for disaster management.
Develop a **long-term association** with UN-SPIDER to take benefits of outreach activities, capacity building programmes and resources available through UN-SPIDER network.	Develop a national forum to communicate with the stake holders and develop precise action plan to implement recommendations.	Efficient uses of national capacity and resources available through UN-SPIDER network during emergency situations, as well as in non-emergency situation.

MUITO OBRIGADO

Thank you