



2018 UK-Malawi Disaster Research Workshop

6th August, 2018

Seismic Risk Management in Malawi

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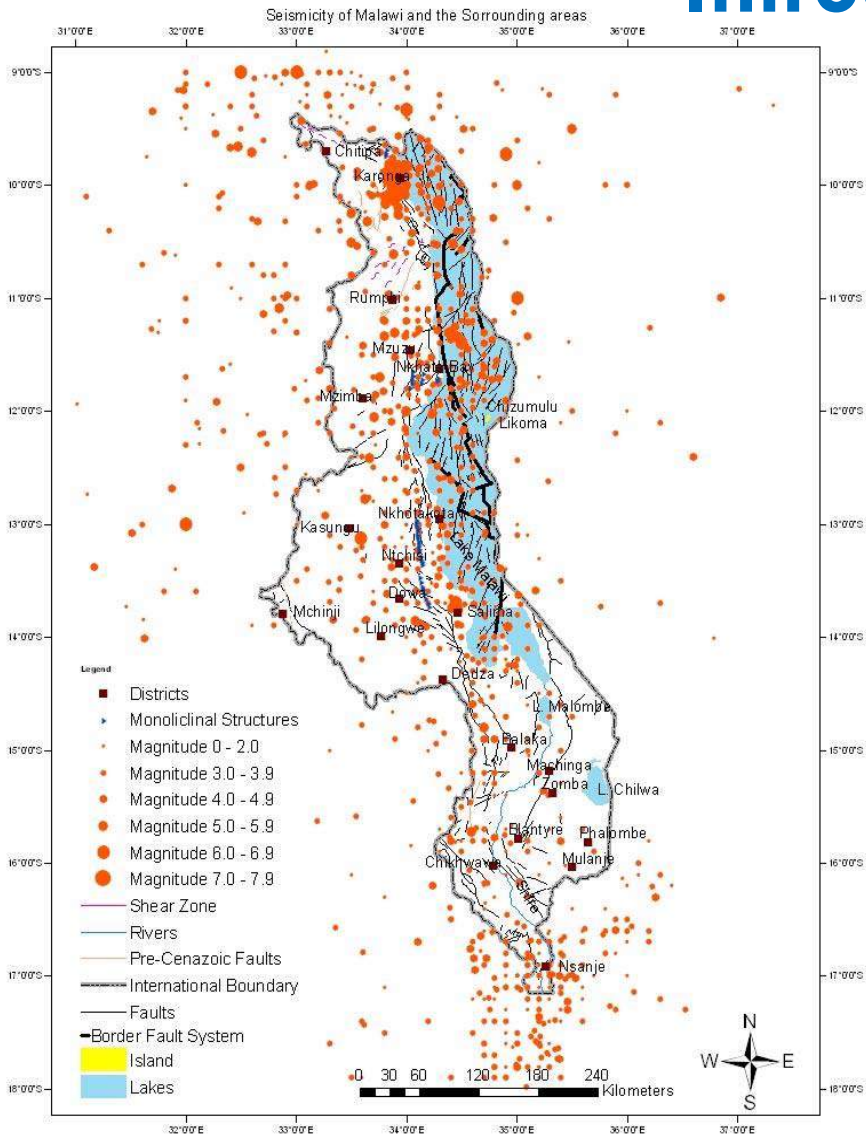
Department of Disaster Management Affairs



Outline

- Introduction
- Key Challenges
- Issues being tackled
- Conclusion

Introduction



Source: Chindandali, et al., 2017

- Malawi is located in the East African Rift Valley.
- Is, therefore, prone to earthquakes
- Major last earthquake: **Karonga**, 2009, M6.2, 10,792 houses damaged, 3,047 hhs affected, recovery costs US\$14 million +
- Most recent: 8th March, 2018, **Nsanje**, M5.6, minimal impact

Key Challenges

Increasing urbanization:

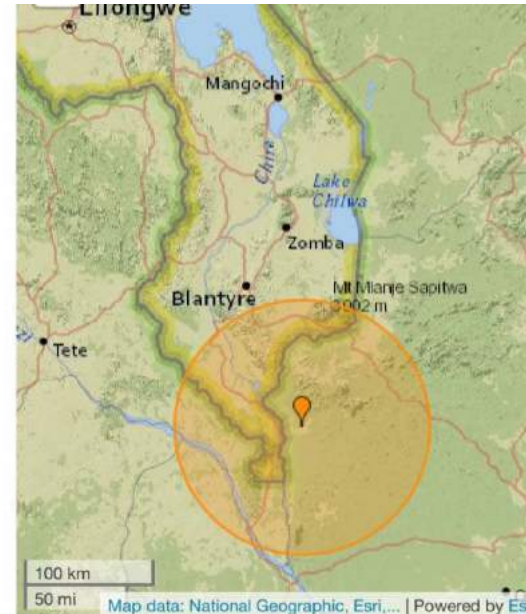
- Malawi is currently largely rural (15% of the pop is urban).
- There is, however, an increasing urban trend
- This provides both a challenge and an opportunity to improve urban infrastructure and housing.
- There is also an increase in informal settlements

Current policies:

- Policies and regulations that consider the implications of earthquakes are **limited**.
- Currently, a National Urban Policy being developed, new DRM Bill drafted, and working on improving building standards.

Knowledge and Awareness:

- Knowledge and awareness on **earthquake risk**, **preparedness** and **response measures** is limited.
- This has resulted in misinformation and failure to take appropriate preparedness actions



22 minutes ago 5.6 magnitude, 6 km depth
Nsanje, Southern Region, Malawi

Search

EXPECT A HUGE EARTHQUAKE TODAY AT 4:30pm

Malawians should expect a huge earthquake, with magnitude of 7.8 which might cause a lot of devastation. According to the Malawi meteorological center the earthquake is expected to hit some parts of the country, so all persons are advised to stay outdoors from 16:30.

MALAWI COLLEGE OF ACCOUNTANCY

INTERNAL MEMORANDUM

TO : ALL MEMBERS OF STAFF AND STUDENTS

FROM : THE REGISTRAR

DATE : 08TH MARCH, 2018

SUBJECT : EARTH QUAKE ALERT

We have been alerted that we may have another earthquake at around 4:30pm today. This will be at a bigger scale than what we experienced this morning.

May I request all of you to get out of your offices, rooms or classes and stay outdoors from 4:30pm please. Remember to stay calm at all times and avoid running around so that we do not create unnecessary commotion thereby either injuring yourself or others.

Key Issues being Tackled

- Avoid running outside. Research has shown that most injuries occur when people inside large buildings attempt to move to a different location inside the building or try to leave.
- Do not get into a lift. If you are already in a lift, step at the nearest floor and get out.
- If you are driving, pull over to the side of the road that is free from traffic, building, pole, trees and stay in the vehicle until the shaking stops.
- If you are outside, get into the open away from buildings, power lines and trees.
- If you are in a mountainous area, or near unstable slopes or cliffs, be alert of falling rocks and other dangers that could be loosened by the earthquake.
- Check for casualties and do not move seriously injured persons unless they are in immediate danger of further injuries.
- Report injuries or fires to relevant authorities.
- Don't stay in weakened buildings. Construct temporary grass shelters or stay in tents.

Expect aftershocks. Most of these are smaller than the main earthquake. Some may be strong enough to do additional damage to weakened structures.

Provide psycho- socio support to children and other traumatised persons.

Do not go sightseeing and stay out of damaged buildings.

Recovering from an Earthquake Disaster

- Build back the damaged infrastructure better and safer by following construction guidelines.
- Expect aftershocks and help those around you if you can.
- Report injuries or fires to relevant authorities.
- Provide psycho-socio support to children and other traumatised persons.

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GOVERNMENT OF MALAWI

DEPARTMENT OF
DISASTER MANAGEMENT AFFAIRS
OFFICE OF THE PRESIDENT AND CABINET

Living with Earthquakes



Our Vision: 'A Nation Able to Cope with Disasters'

1.5 Earthquake

Being on the East African Rift Valley System, the eastern country of Malawi is prone to earthquakes.

The occurrence and impact can differ in each occasion, nevertheless the whole construction sector needs to take appropriate measures to face this hazard.

By definition, an earthquake "is the shaking and a fracture of the surface of the earth resulting from sudden underground movement along a fault plane or from volcanic activity. Earthquakes are normally caused by tectonic activities.

These activities include volcanism, converging, sliding and rupture of rock masses or plates. In most cases, vulnerability of an area is subject to presence of faults, joints and weaknesses of the plate's movements. The great Africa rift valley system is the main cause of earthquakes in Malawi".

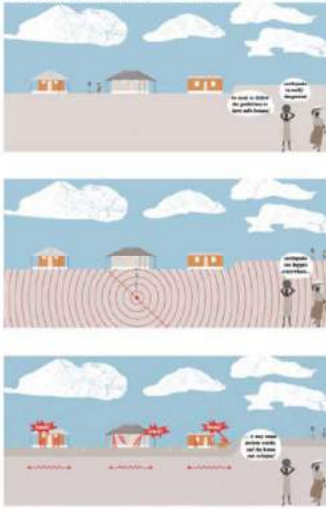
In order to respond to the risk of earthquakes it is recommended to:

Follow the building regulations and the construction guidelines in order to properly address the safe construction of the house, paying special attention to the correct use of the materials and to construction techniques.

1. Department of Disaster Management Affairs, "Threat Risk Management Standards: A Handbook for practitioners, owners, clients, investors and donors in Malawi", 2011, pp. 101

18 Understanding risk


4. THE WHOLE MALAWI CAN BE AFFECTED BY EARTH SHAKE, BE PREPARED



Safe house construction guidelines

Safer House Construction Guidelines

Bureau TNM



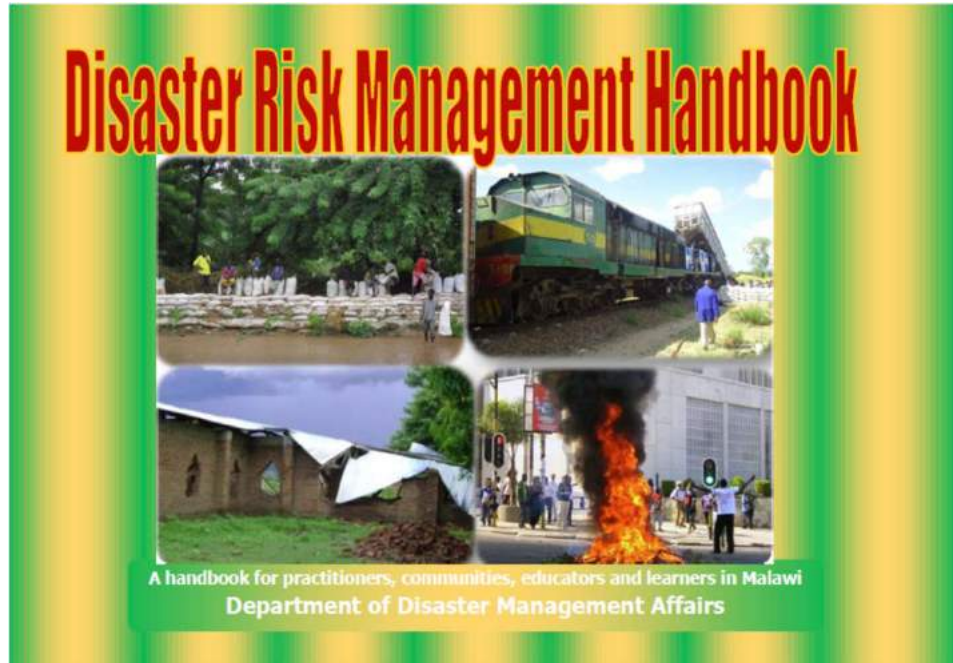
Safer House Construction Guidelines

Living with Earthquakes brochure

Looking at safer construction practices (including locally applicable) across hazards, including earthquakes

Provides general info on earthquakes and what people can do and not do when it occurs

Key Issues being Tackled



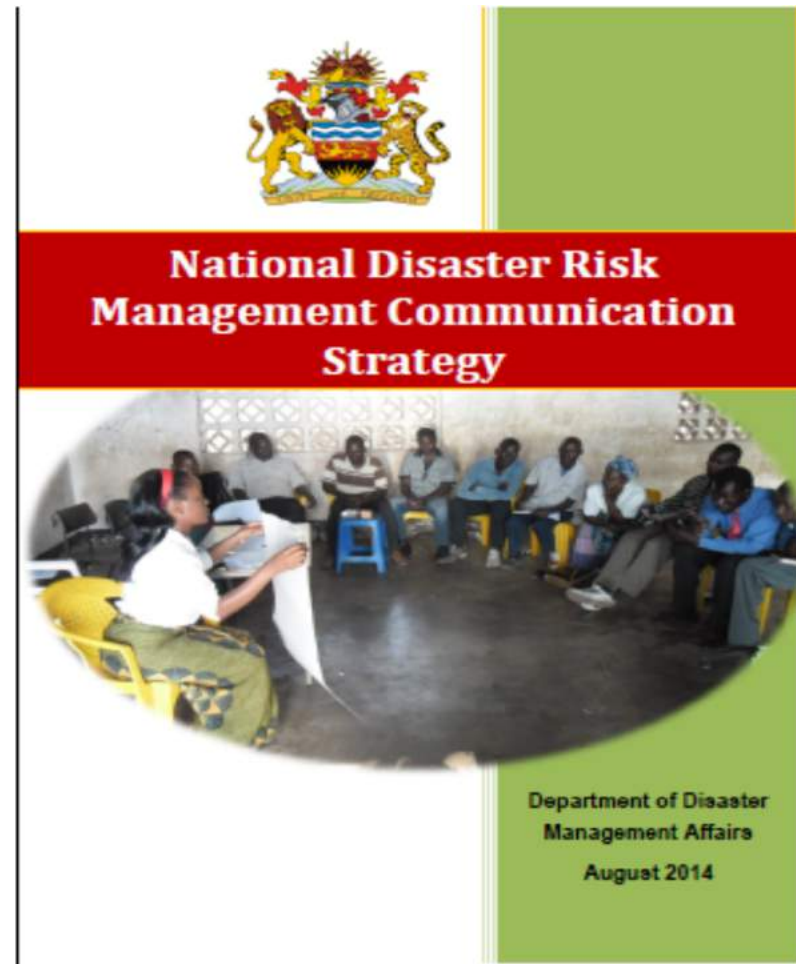
- Safer schools construction guidelines currently under development - *will provide for multi-hazard resilient designs and construction of public education infrastructure to make them safer*

- Provides for how to prevent, mitigate, prepare for, respond to, and recover from different kinds of hazards, including **earthquakes**.
- Has been widely distributed in libraries and schools.....

Key Issues being Tackled

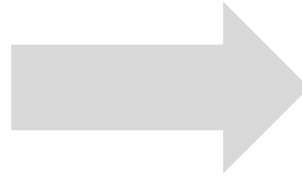
Review of the National DRM Communication Strategy

- National DRM Communication Strategy developed in 2014
- Currently being reviewed
- Revised version of strategy to include messages on earthquakes – **do's and dont's**



Key Issues being Tackled

Disaster Risk Management
Bill



- Improving coordination of disaster risk management programmes
- Promoting resilience across hazards and by all relevant sectors

National Urban Policy



- Promoting efficient urban development planning and management
- Strengthening environmental quality and resilience of urban settlements

Building Regulations &
Construction Guidelines



- Enhancing building practice from design to construction for resilient infrastructure

IEC materials



- Increase knowledge and awareness among stakeholders, including the general public on seismic risk management

Conclusion

- Strengthening building regulations, standards and policies key for seismic risk management
- Strike a balance between locally-appropriate/affordable construction practices and more advanced ones to build resilience
- Public awareness and education critical for preparedness and building resilience
- Collaboration with academic institutions in research and capacity building is important
- There is need for investment in more resilience practices in the public and private sectors
- There is need to disseminate seismic hazard maps widely
- Need to regularly undertake earthquake simulation exercises, esp. in schools

Thank you for your attention

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