Presentation 2023

WATER FROM A ROCK INITIATIVE

Global Integrated Flood and Drought Management Competition for #YouthLead
Projects

People walking through river floodwaters after heavy rainfall in Hadeja, Nigeria. © Africanews

Our Team

YouthMappers Chapter:
Department of Geography, Geoinformatics & Meteorology

Martha Djan

BSc Environemntal Science (3rd year)

Jack Kgwale

BSc Meteorology (3rd year)

Mulisa Mudau

BSc Meteorology (3rd year)

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

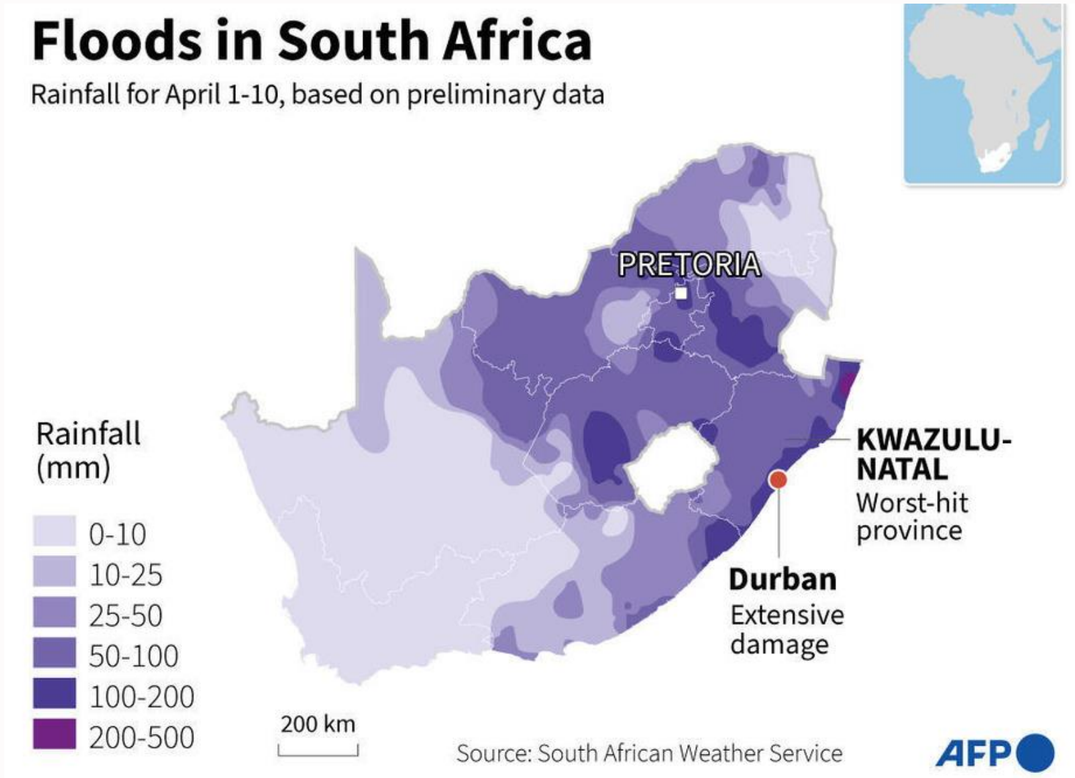
Overview

Through the use of geofencing techniques on university campuses and in vulnerable regions, early warning information can be shared in a timely fashion before extreme weather events.

Most people lose their lives during disasters due to limited information about potential disasters.

Over 440 people were killed and 40 000 were displaced. More than 600 schools were destroyed

Informed communities respond better to natural disasters.



Objectives

01 Raising awareness through digital & hard copy Response and Disaster Packages: Easily distributable between highschool learners and varsity students.

02 Map Vulnerable Communities based on criteria: Umdloti KZN infrastructure (informal settlements, urban areas), frequency of floods - low, moderate high-risk areas, proximity to the water source(floodline)

03 Creating an application that implements Geofence in local regions vulnerable to disasters.

Target Audience

Highschool Learners

“630 School in KZN affected by floods”

University Students

“Building resilience amoung the youth”

Vulnerable Communities

“Increasing awareness & Education in Vulnerable communities”

METHODS

These methods will contribute to flood preparedness by providing accurate and timely data for disaster risk assessment, improving emergency response capabilities, and enhancing communication with vital information.

Data Collection

- Using Digital Earth Africa and South Africa Weather Service for rainfall, temperature, soil moisture and vegetation data.
- Sentinel1 and 2 satellite data for flood mapping.

Analysis with Python Scripts

- Examining rainfall and temperature distribution.
- Identifying dry and wet periods.
- Analyzing soil moisture and rainfall correlation.

Remote Mapping

- Partnering with the University of Pretoria's experts, lecturers, and students.
- Using OpenStreetMap data for mapping (buildings, roads, rivers) in our mapathons.
- Prioritizing flood-prone areas

METHODS

The focus on mapping unmapped areas, routes, rivers, and emergency tags ensures that critical infrastructure and vulnerable areas are identified and accounted for in preparedness and response efforts.

Field Data Collection

- Visit our study area and talk to people living in the study area.
- Get their personal experiences with floods.

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Community Forum

- Share our findings with the communities on flood and drought.
- Through workshops, and community meetings

Implement a geofenced system

- To define the geographical boundaries of areas at risk of disasters.
- To send alerts and notifications to users in vulnerable regions.
- Raise awareness.

Timeline

Key dates for project.

1st Phase
Digital/Hardcopy Response & Preparedness Information
Oct 2023 - Jan 2024

2nd Phase
Mapping Vulnerable Areas
Nov 2023 - Feb 2024

3rd Phase
Implement Geofences
Dec 2023 - Jan 2024

4th Phase
Campus Awareness
Feb 2024 - April 2024

5th Phase
Field assessment
Jan 2024 - Feb 2024

6th Phase
Application Creation
Dec 2023 - April 2024

Water From a
Rock
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THANK YOU!

Contact no. 0842325359
Email address: u19186119@tuks.co.za