

Group Meeting

Field Trip Update

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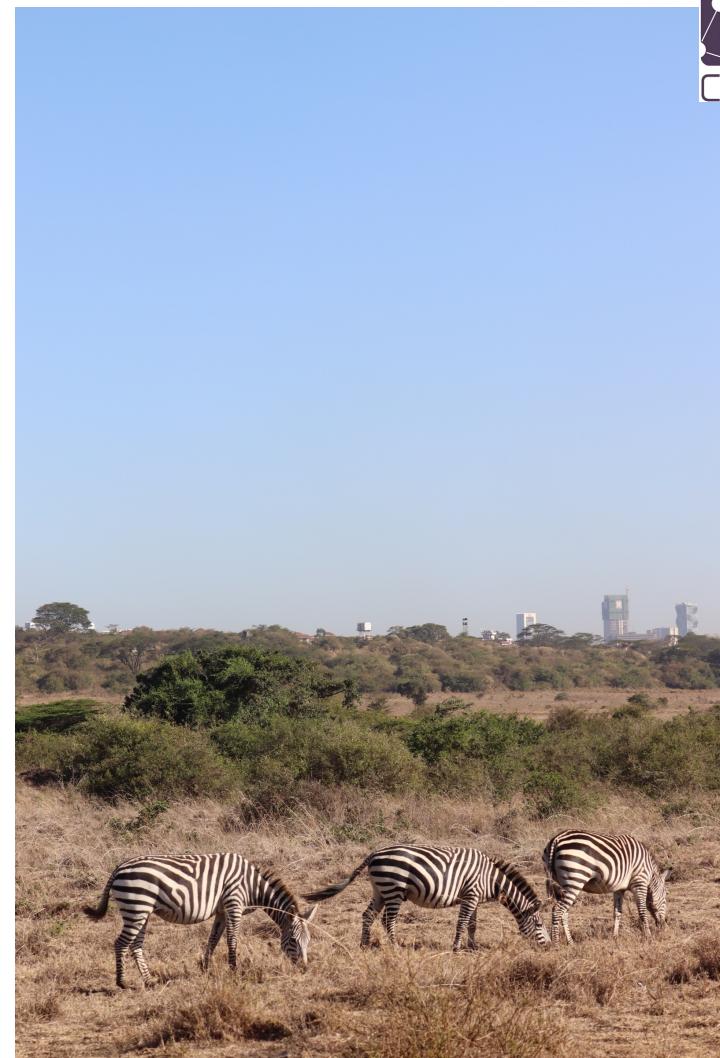
Background

Fieldtrip Plan

Observation

Data Collected

Reflection



Background - Context

Flood Risk Assessment

Exposure Analysis

Building
Informality

Land Use

Elevation

Flooding Hazards

Flood
Intensity

Flood
Frequency

Vulnerability Assessment

Governance

Health
System
Accessibility

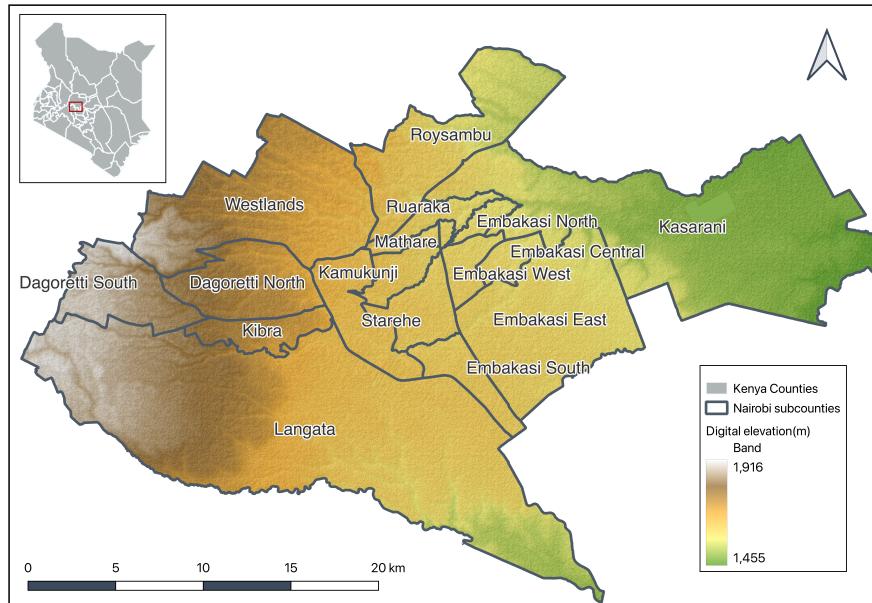
Improving
data
justice
with small
datasets

- Improving Data Justice for Flood Risk Assessment in Nairobi, Kenya

Fun question:

How many seasons do places near the
Equator have?

Background - Case study



Nairobi, Kenya

- Rainy season
 - Long rainy season: April to June
 - Short rainy season: November to mid-December
- Drought season
 - July to October
 - December to March

Fieldtrip design

Local collaborator: Kounkuey Design Initiative (KDI)

- A community development NGO
- Projects in Nairobi - Slum upgrading: internet accessibility, public space, nature-based solutions, drainage installation
- Local experts hired residents still live in Kibera



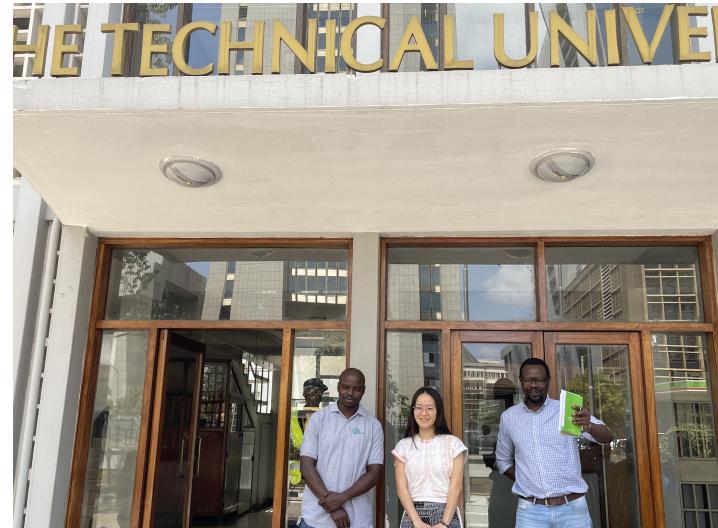
Fieldtrip design (spontaneous meetup)



UN-Habitat:

- Nairobi Rivers Basin Rehabilitation and Restoration Program

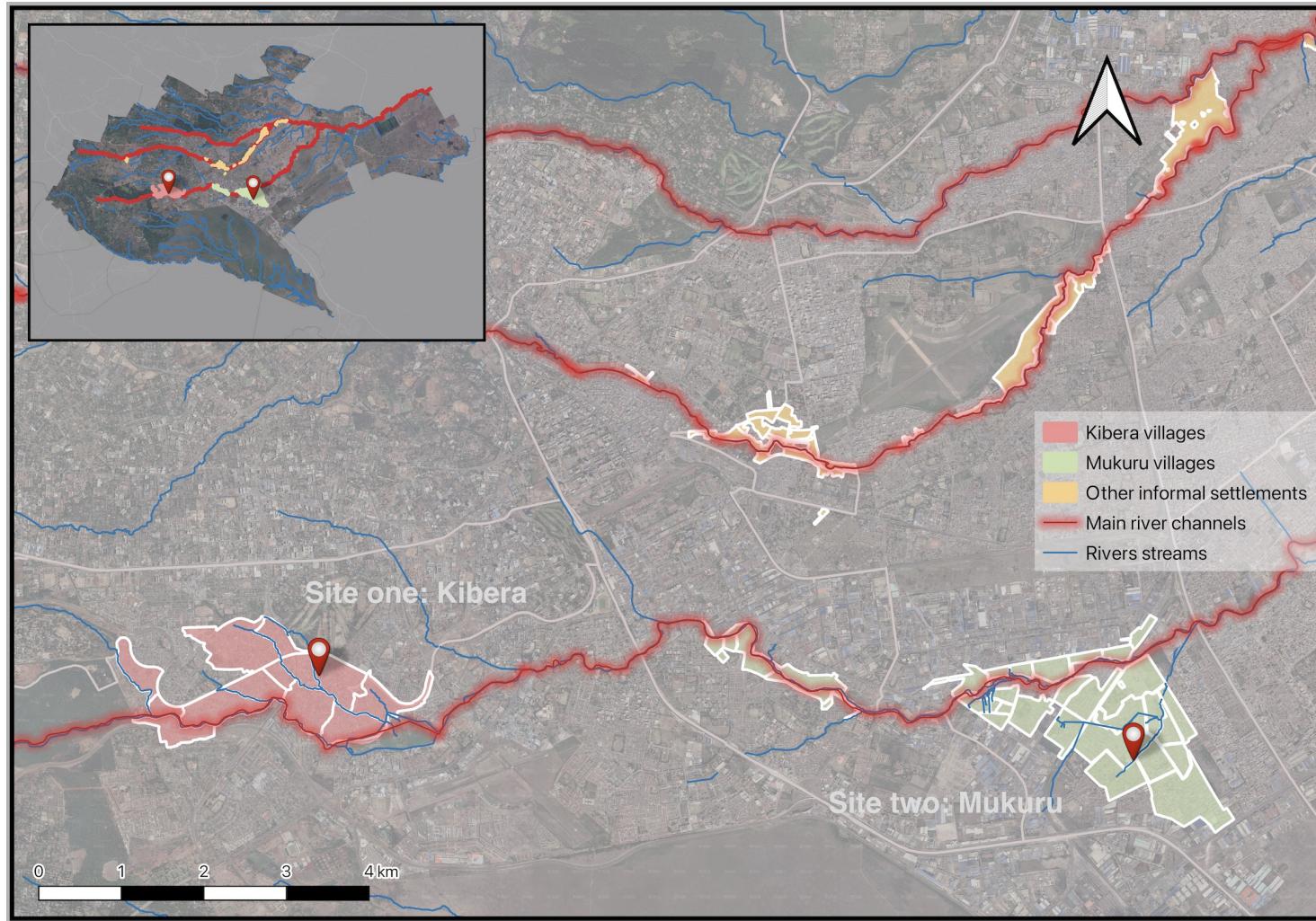
Thanks to Mr. Mark Ojal for the connection



Technical University of Kenya

- Participatory flood modelling for negotiation and planning in urban informal settlements

Observations - 2 Slums location



Observations - 2 Slums



Kibera

- Largest urban slum in Africa
- River: Ngong River, Nairobi Dam
- Home to approximately 250,000 people across an area of just 2.5 kilometres



Mukuru

- One of the largest slums in Nairobi
- River: Ngong River
- Situated on waste lands in the industrial area

Observations - Slums == Urban Village

Africa Slums

Chinese Urban Village

Similarities

Differences



Observations - Slums characteristics



Sewage system

- Illegal/Legal ?



Animals

- can be used for identifying informal area from SVI

Observations - Slums characteristics



Commercial activities

- Umbrella can be used for identifying informal trades from SVI
- High buildings within slums might be considered to be more risky (?)

KDI Projects - Public Space Projects



Sanitize facility

- Shared space for social activity
- Washing area
- Lower price for clean water
- Flag for flood information dissemination



Meeting room

- WiFi access
- Meeting room for SMEs
- Sanitize facility

KDI Projects - Flood Prevention NBS Projects



Gabion

- Flood prevention



Drainage

- Flood prevention

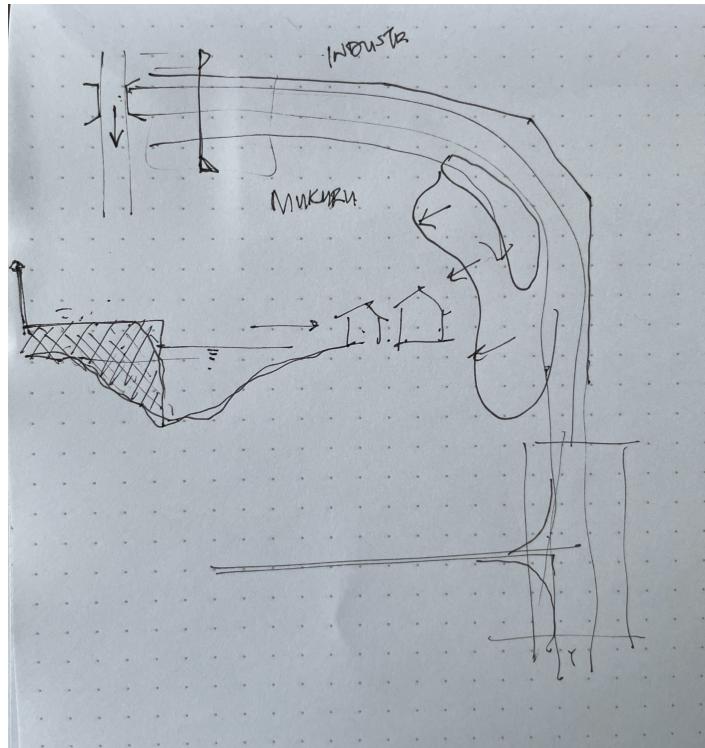
KDI Projects - School Upgrading



School Upgrading

- refurbishing classroom
- planting
- residents lifting

Observations - Flooding cause



Public Space Project

Industry

Illegal dumping

Government ignorance

Observations - Trust transects

	Individual	Community	NGO	Government	International organisation
Prevention	clean waste in the drainage, place sack bags / soil, dig drainage	Clean waste in the drainage	Flag for information exchange, upgrading projects, awareness posters and workshops	Weather prediction and warning (people don't believe)	Upgrading projects (UN-Habitat)
Response & Rescue	people move , elevation, steps in front of door, phone call	WhatsApp message, Facebook post	fundraising and material support (KDI)		Fundraising and material support (Red Cross)
Reduction				National Policy for Disaster Management in Kenya (2019)	Sendai Framework for Disaster Risk Reduction (UNDRR 2015-2030)
Remarks	friends and relatives etc.	strong connection, organised	more influence within slums due to workshop activities etc.	illegal dumping, no implementation, corruption and reluctant	less influence to residents

- Key word from 'Messy maps: Qualitative GIS representations of resilience'

Data Collected

- City Raster: Flood Risk, Precipitation, SRTM, Vegetation Cover
- City Vector: Building Footprint, Dumpsites, Informal Settlements, Landuse, River&Channel, Neighborhoods, Parks, Population, Railway, Roads, Schools, Sewer
- River 500m Buffer Vector: Universities, Rural Agriculture, Population, Ongoing Projects, Landuse, informal settlements, Dumpsites etc
- Informal Settlements Raster: Orthomosaic, Flood Extent
- Informal Settlements Vector: TBC

Reflections

1. City, river and informal settlements scale analysis

- City: green space
- River: distance to the river
- Informal settlements: public space
- Generic: elevation, awareness, access to health facility

2. Flood identification

- RS: satellite image, drone image
- SVI: damaged building, drainage,
- Social media posts: flood, rain, waste, river traffic, bridge, flag, gabion, cholera
- Hydraulic data: Precipitation, ground water level

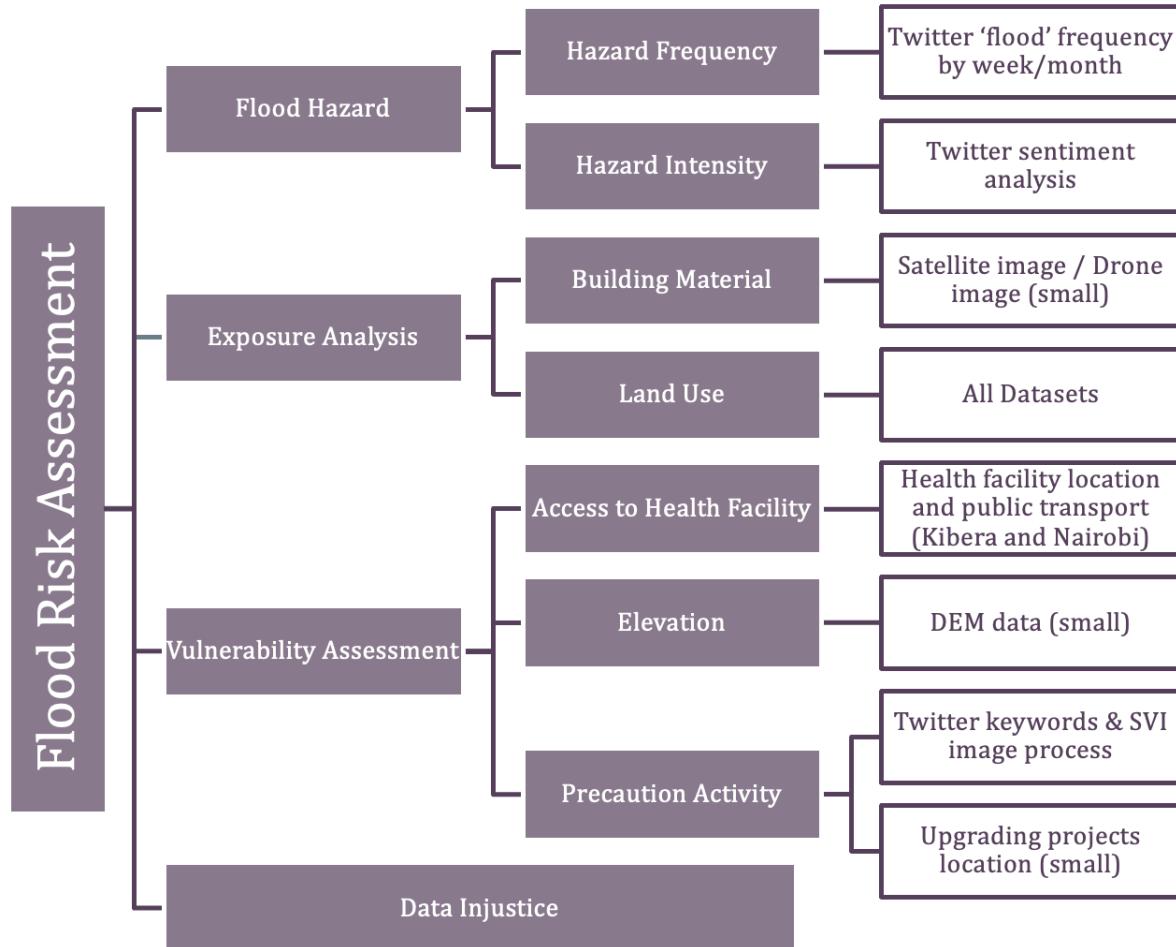
3. Informal settlements identification

- Open Building/OSM: building footprint

4. Flood cause

- Rain flood
- River flood

Reflections - Indicators for FRA



Expected Result

Risk Map Frame Work

Fun question:

How many seasons do places near the
Equator have?

2 Winter and 2 Summer?

New names:
 ## `..` -> `...1`

...1	Individual	Community	NGO	Government	International organisation
Prevention	clean waste in the drainage, place sack bags / soil, dig drainage	Clean waste in the drainage	Flag for information exchange, upgrading projects, awareness posters and workshops	Weather prediction and warning (people don't believe)	Upgrading projects (UN-Habitat)
NA	NA	WhatsApp message, Facebook post	NA	NA	NA
Response & Rescue	people move , elevation, steps in front of door, phone call	NA	fundraising and material support (KDI)	NA	Fundraising and material support (Red Cross)
					Sendai Framework
					23 / 24



