

Group Meeting

Field Trip Update

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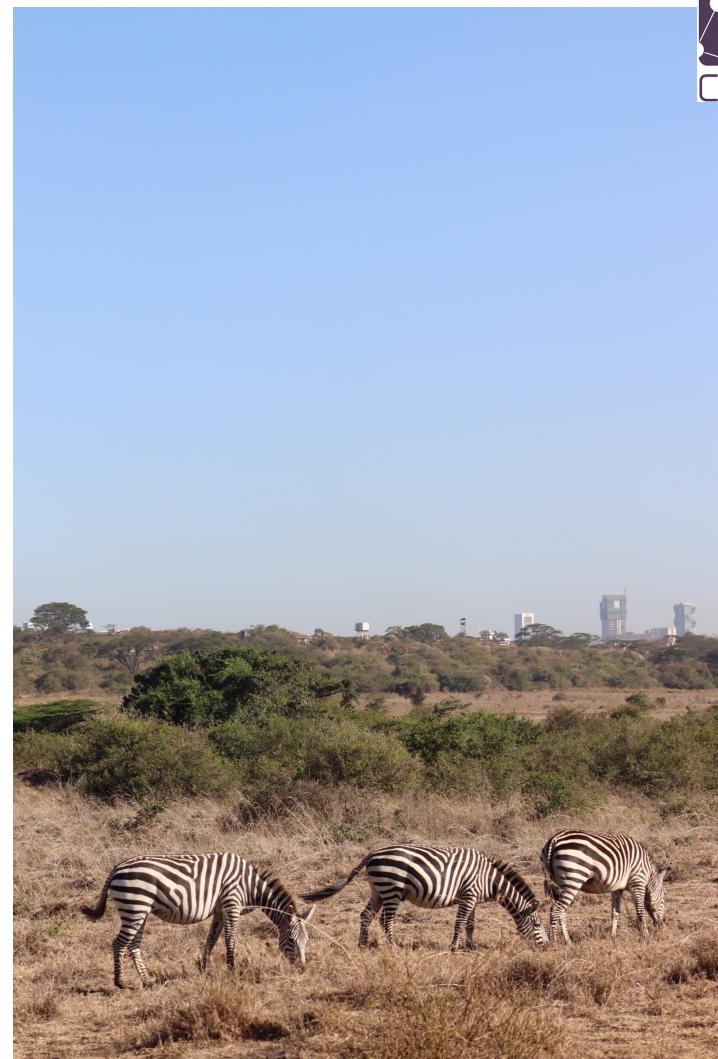
Background

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

Information
Connectivity

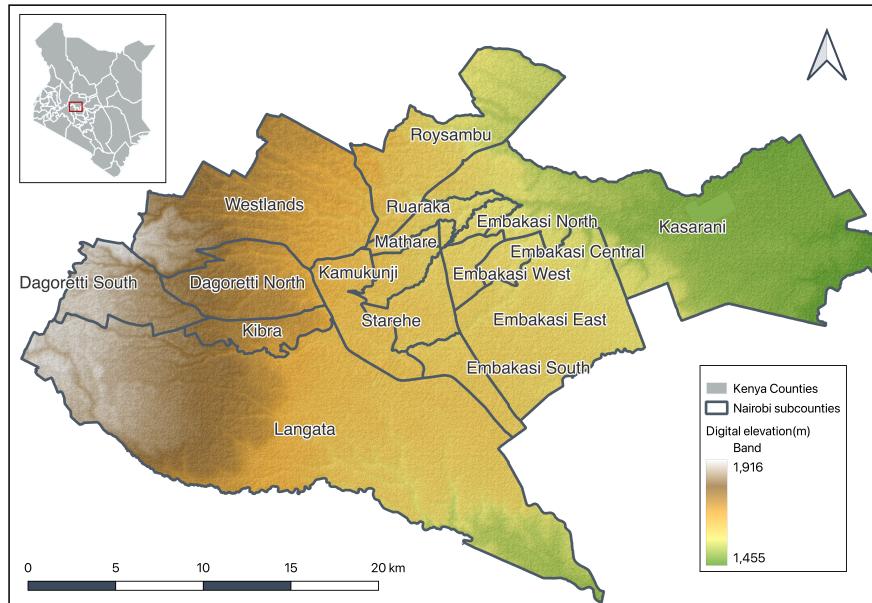
Governance

Health
System
Accessibility

Improving
data
justice
with small
datasets

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

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

Fun question:

How many seasons do places near the
Equator have?

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



Fieldtrip spontaneous meetup



UN-Habitat:

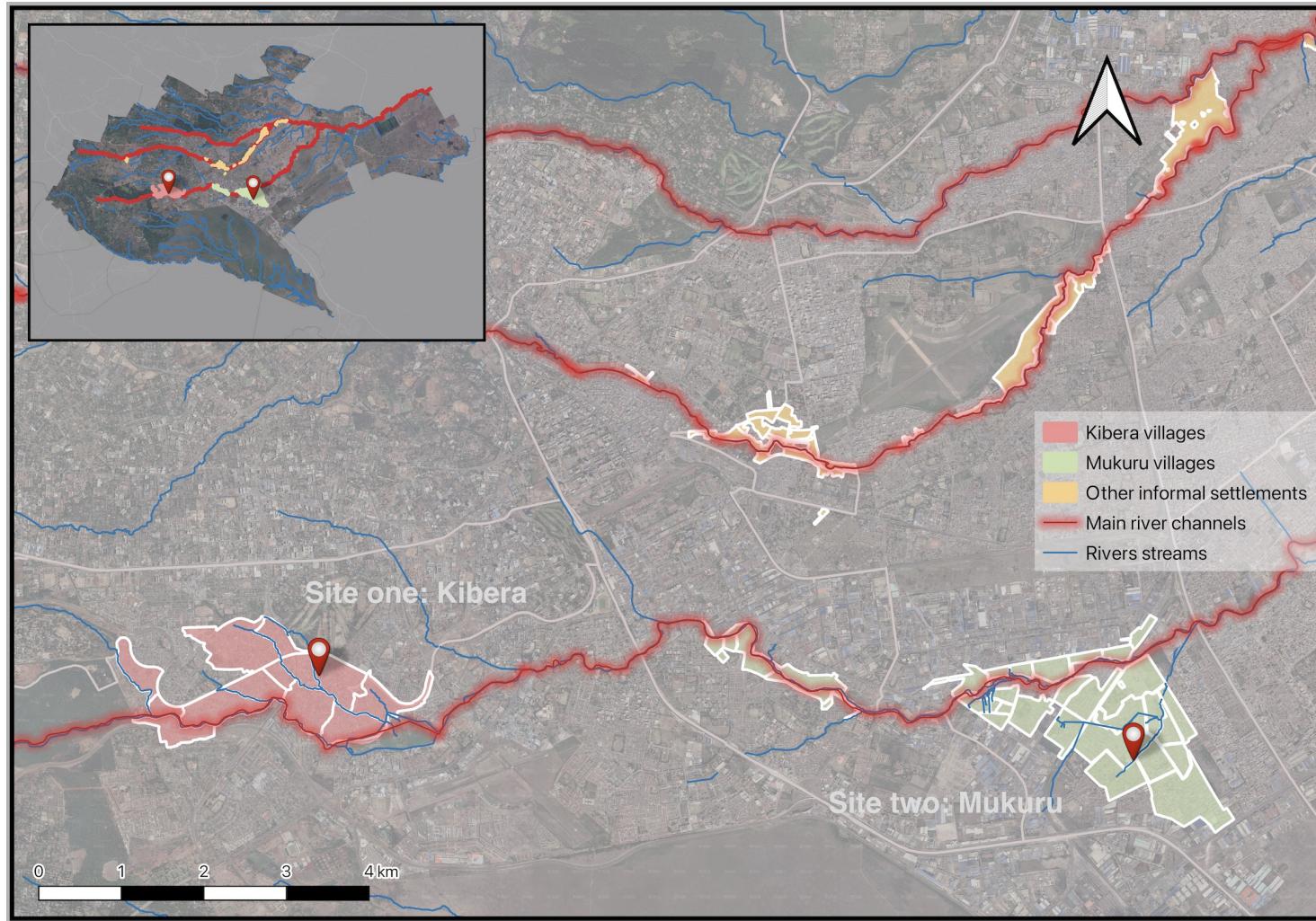
- Nairobi Rivers Basin Rehabilitation and Restoration Program



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

-

Observations - Slums characteristics



Commercial activities

- Umbrella

Observations - Trust transects

Flood Prevention

- Individual: Clean waste in the drainage, sack bags and soil, dig drainage
- Community: WhatsApp message, Facebook post, Clean waste in the drainage
- NGO: Set flag for information exchange, upgrading projects, Posters
- International Organisation: upgrading projects
- Government: minimal weather prediction (people don't believe)

Response

- Individual: people move , elevation, steps in front of door
- Community: WhatsApp message, Facebook post,
- NGO: KDI – fundraising and Material support
- International Organisation: red cross
- Government:

Observations - Trust transects

Rescue

- Individual: act, phone call
- Community: community level
- NGO:
- International Organisation:
- Government:

Reduction

- Individual:
- Community:
- NGO: awareness, education workshop
- International Organisation:
- Government: no implementation, corruption, slow, and reluctant

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

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Drainage

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KDI Projects - School upgrading



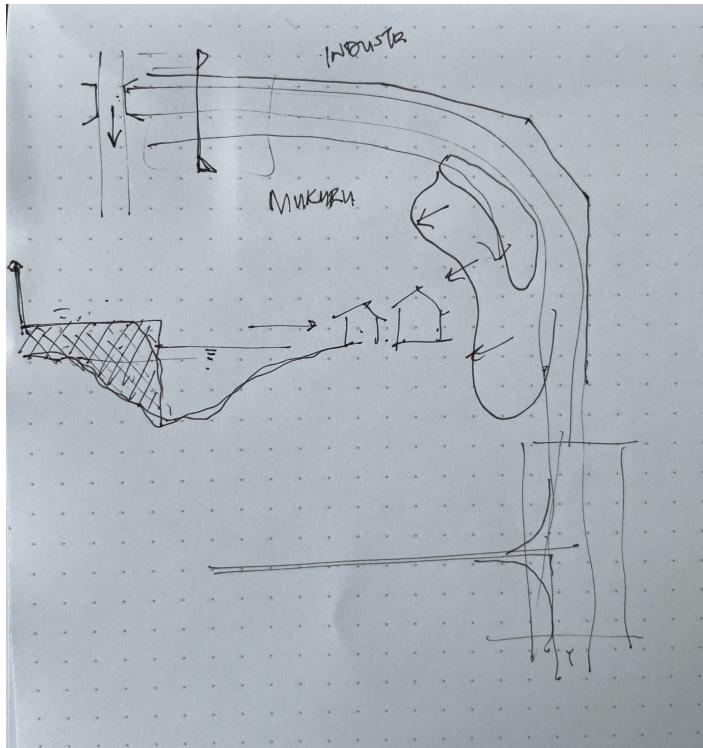
School Upgrading

- refurbishing classroom
- planting
- residents lifting



School Upgrading

Observations - Flooding cause



Public Space Project

Industry

Illegal dumping

Government ignorance

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

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

Field trip suggestion

Keep a daily diary

Know what you want and where
to get

Plan ahead





