Climate change vulnerability, risk, impact and adaptation in Nairobi’s informal settlements of Korogocho and Mukuru Kwa Njenga

Dr. Samuel Owuor
Department of geography & Environmental Studies
University of Nairobi

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BACKGROUND ON KOROGOCHO

- Koch, the 4th largest slum covers 49.2 ha found in Kasarani District

- Consists of 8 Villages (Grogan A, Grogan B, Kisumu Ndogo, Nyayo, Highridge, Korogocho A, Korogocho B and Gitathuru)

- Korogocho neighbours the Dandora dumping site

- Population (100,000 - 120,000, with 18,000 households)
Mukuru kwa Njenga is one of the three largest slums in Nairobi, covering area of approx. 32 ha.

Consists of eight villages (Sisal, Vietnam, 48, Milimani, Riara, AA, Wapewape and MCC),

Located in a valley next to an old mining area and an industrial waste disposal site.

The Ngong River passes through the settlement.
<table>
<thead>
<tr>
<th>KOROGOCHO</th>
<th>MUKURU</th>
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<tr>
<td>Korogocho is near the Dandora dumping site</td>
<td>Mukuru neighbours the quarry and an</td>
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<tr>
<td>Population (100,000 - 120,000, with 18,000</td>
<td>industrial dumping site</td>
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<td>households)</td>
<td>Population approx. 700,000 people</td>
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<tr>
<td>Construction materials for houses temporal/recycled</td>
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<td>Slum upgrading efforts ongoing</td>
<td>Government eviction order active</td>
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<tr>
<td>No sewer line network within</td>
<td>Mukuru Kwa Njenga has no main sewer line</td>
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<tr>
<td>Lack of waste management plan</td>
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RESEARCH METHOD

- Research employed both primary and secondary data
- Primary data collected through:
  1. direct field observation;
  2. a random survey of households;
  3. focus group discussions;
  4. random informal interviews
- Secondary data review
- Key informant sessions
DISASTERS IN KOCH


- River Gitathuru and Nairobi River, often burst their banks during heavy rains (upstream)


Ngong River overruns settlements or underground water leads to localized flooding/waterlogging


Health epidemics – In 2007, 2008, 2009

Droughts and famines – In 2008/2009, 2010
VULNERABILITY TO CLIMATE CHANGE
Enhanced by:

- Increasing population;

- Inherent chaotic nature;

- Location;

- Socio-political marginalization and exclusion; and

- Poverty and unstable social networks.
VULNERABILITY AND RISKS

Lack of a good drainage system in Mukuru is a major problem, which enhances such vulnerability to disease epidemics and flooding.

Lack of a specific dumping site means the residents have to dump wherever they can. Further blocking the drainage network that is now almost non-existent.
The Houses in Mukuru and Koch are constructed using timber, iron sheets/tin, and or a combination of both. Some are constructed using blocks, cement while others use mud and tree logs.
The direct impacts

- Loss of human lives
- Physical injuries to humans
- Loss of property and assets
- Disruption and loss of normal livelihoods
- Permanent or temporary displacement
- Increased incidences and outbreaks of water-borne, vector-borne, rodent-borne and infectious diseases
- Damage and destruction of infrastructure
Perennial flooding seems to have convinced the occupants of this house in Mukuru to vacate. The area has since turned into waste marshland.

Schools are also constructed in such areas, further exposing the children to the challenges associated with flooding.
Indirect Impacts

- Increased food insecurity and malnutrition
- Women and the girl-child spending more time looking for or fetching clean water
- Disruption of school attendance
- Severe water scarcity
- Intra-city environmental migration
- Increased seasonal or permanent environmental migration
- Increased poverty situation
- Increased cost of medication

IMPACTS OF CC IN KOCH AND MUKURU
COPING STRATEGIES

- Coping with floods (relocation, migration,
- Coping with health epidemics
- Coping with droughts and famines

Preparation strategy for floods!!!!!!
COPING MEASURES

Houses are somehow raised with cement to reduce the impacts of the flooding in Mukuru. In Koch, the use of artificial dykes was noted.
POLICY AND INTERVENTION MEASURES

- Promotion of good governance at the city level
- Promotion of sustainable livelihoods at the local level
- Disaster awareness, preparedness, management and risk reduction at the local level
- Reducing the informal settlements’ vulnerability to climate change
- Increasing the informal settlements’ adaptation to climate change
- Community-based campaigns, advocacy and interventions
- Promotion of partnerships and Common action plan