

Enhancing Resilience and Security of Low Income Communities to Climate Change in Growing Cities: An Assessment of Flood Management and Planning Regimes in Kampala City Uganda

Paul I. Mukwaya

Hannington Sengendo

Shuaib Lwasa

Nur O. Hirabe

Presentation outline

- 1.Introduction
- 2.Data and methods
- 3.Drivers of floods in Kampala
- 4.Flood management and planning regimes
- 5.Conclusions

INTRODUCTION

- Cities face a dual challenge of increasing population and high vulnerability to climate change impacts
- Kampala city is no exception. Flooding is a characteristic feature of the city and a show of serious inequalities
- Crisis of confidence in the local planning authority
- An indication of a failure/ and or a withdrawal of city planning systems
- Seizure and dominance of the informal sector in determining city development processes /pathways

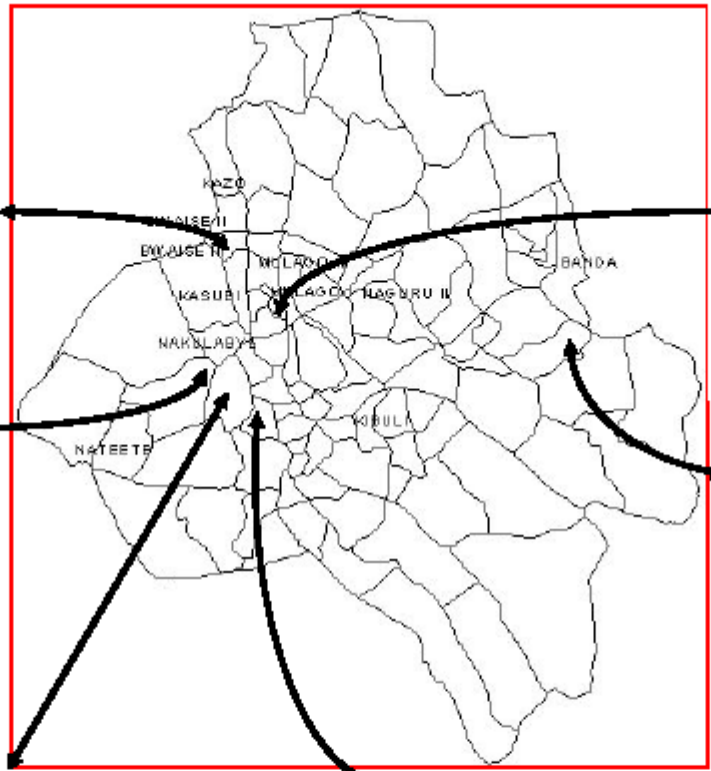
DATA AND METHODS

- Study is ongoing
- Being carried out in low income settlements in Kampala
- 60% of the city population lives in low income settlements
- Collection of biophysical and socio-economic conditions that increase the vulnerability of low income settlements to floods
- Several PRA sessions and interviews of key informants carried out and more are planned





Bwaise



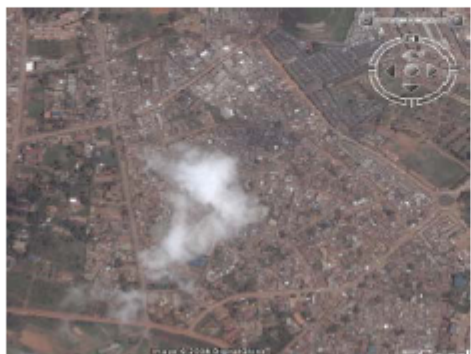
Katanga



Kivulu



Kinawataka



Kisenvi



Katwe

RESULTS

Types of floods

1. Floods from the land

- Result of intense rains that is unable to soak into the ground or enter drainage channels

2. Floods from sewers

- Inadequate capacity of sewers
- Most frequently blocked by waste materials

DRIVERS OF FLOODS

1. Population growth and urban growth paths

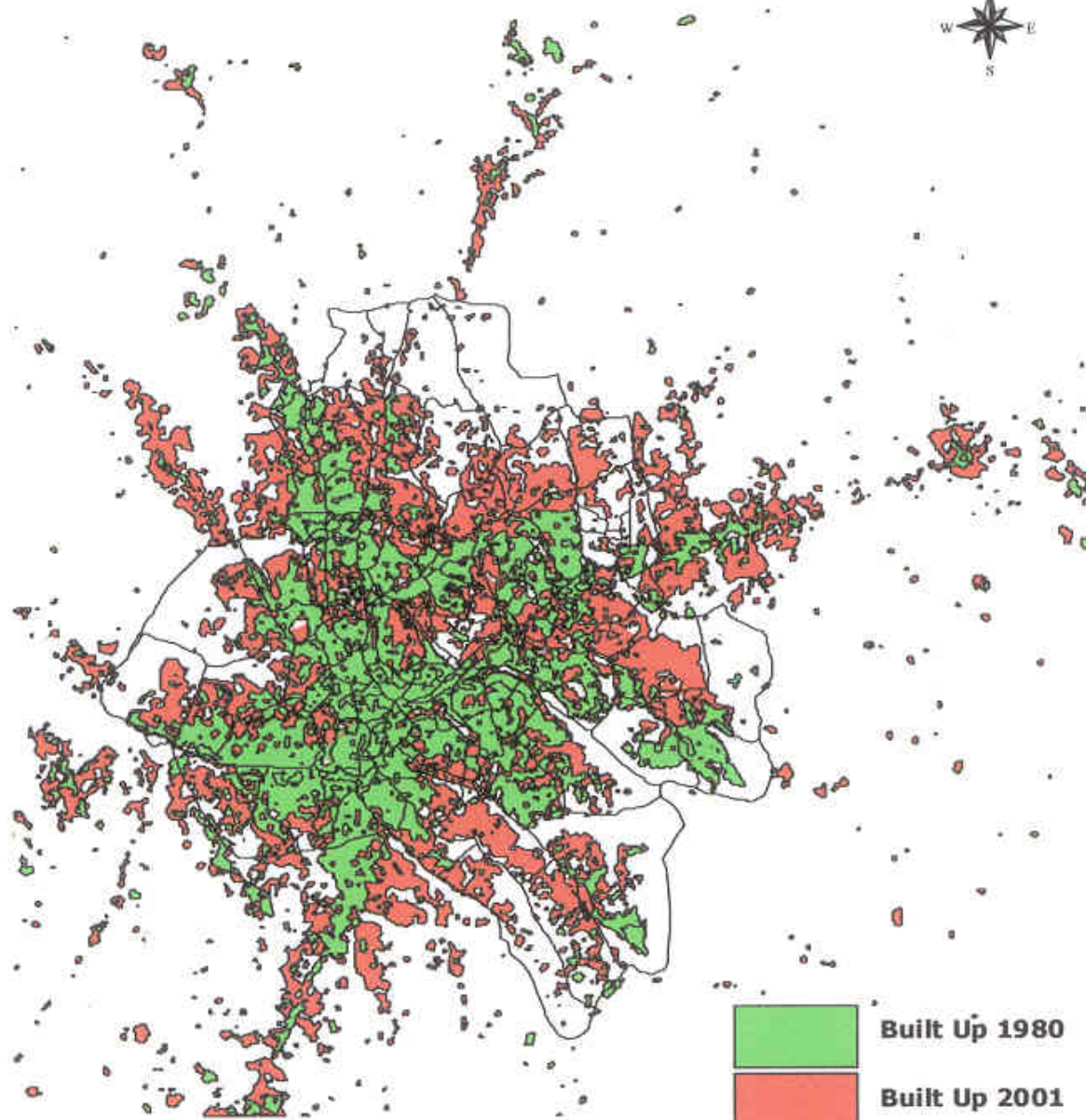
- Buffer zones/open spaces encroached on
- Natural flooding areas/swamps disappearing
- Relatively inexpensive swamplands increasingly being settled by the poor



2. Landscape characteristics and hydrology

- Kampala is built on a series and valleys
- Valleys are wetlands and rivers

3. Drainage systems

- Capacity is low
- Inappropriately built and maintained
- Compounded by waste management problems



 Built Up 1980
 Built Up 2001

4 0 4 8 12 Kilometers

Example of wetland encroachment in Katanga (Kawempe Division)








House in Lubigi swamp, Bwaise, next to Nsooba Channel

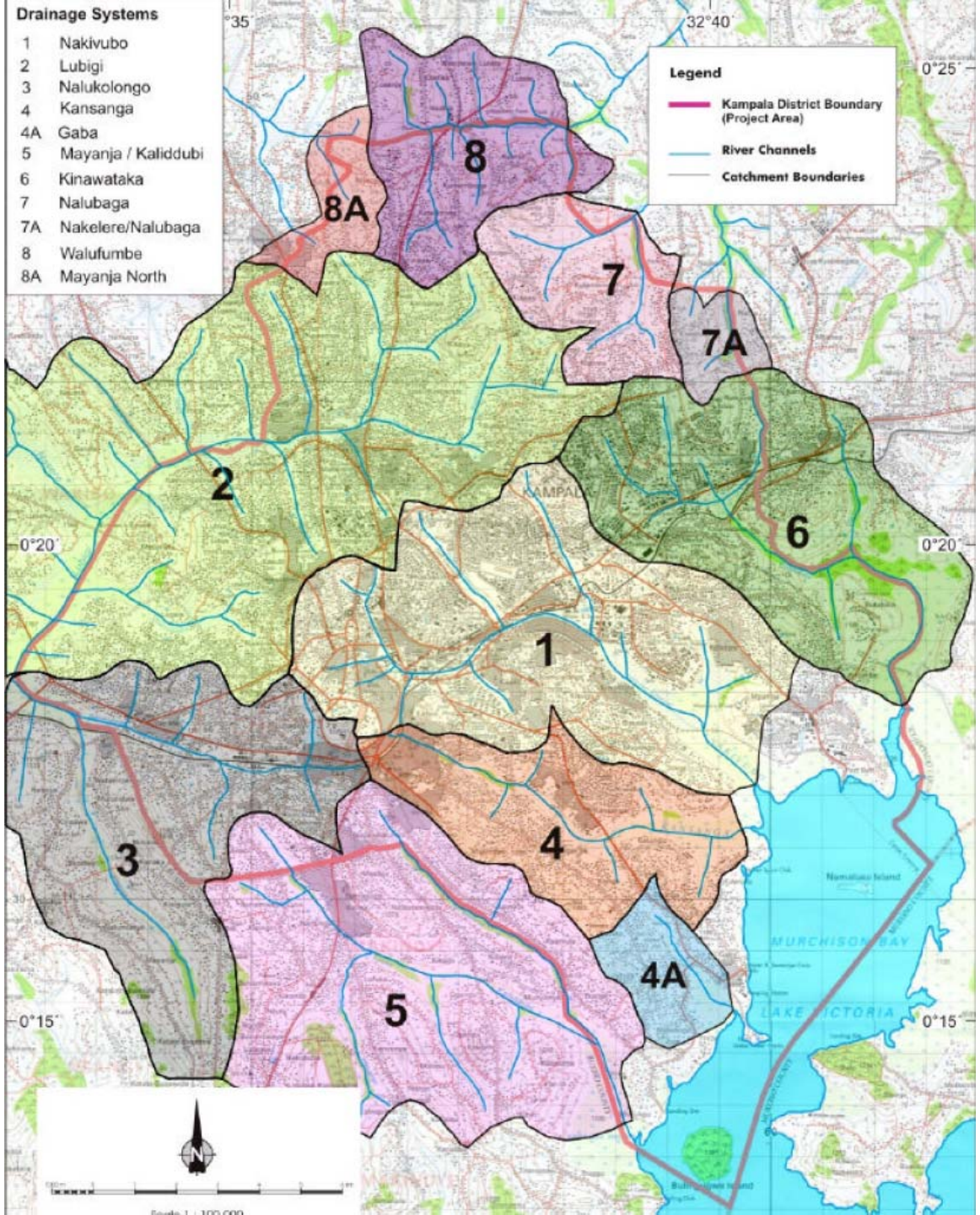


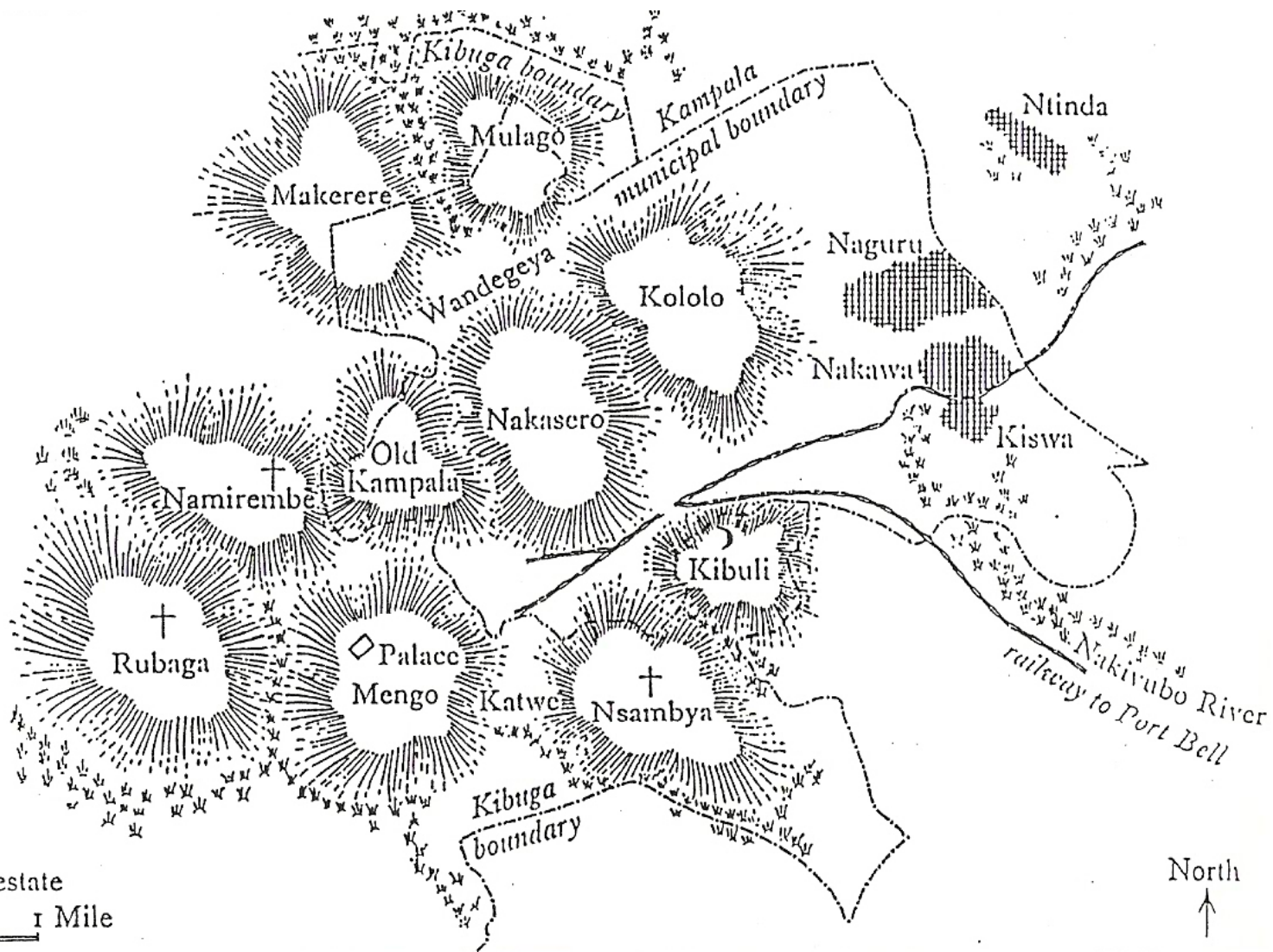
Drainage Systems

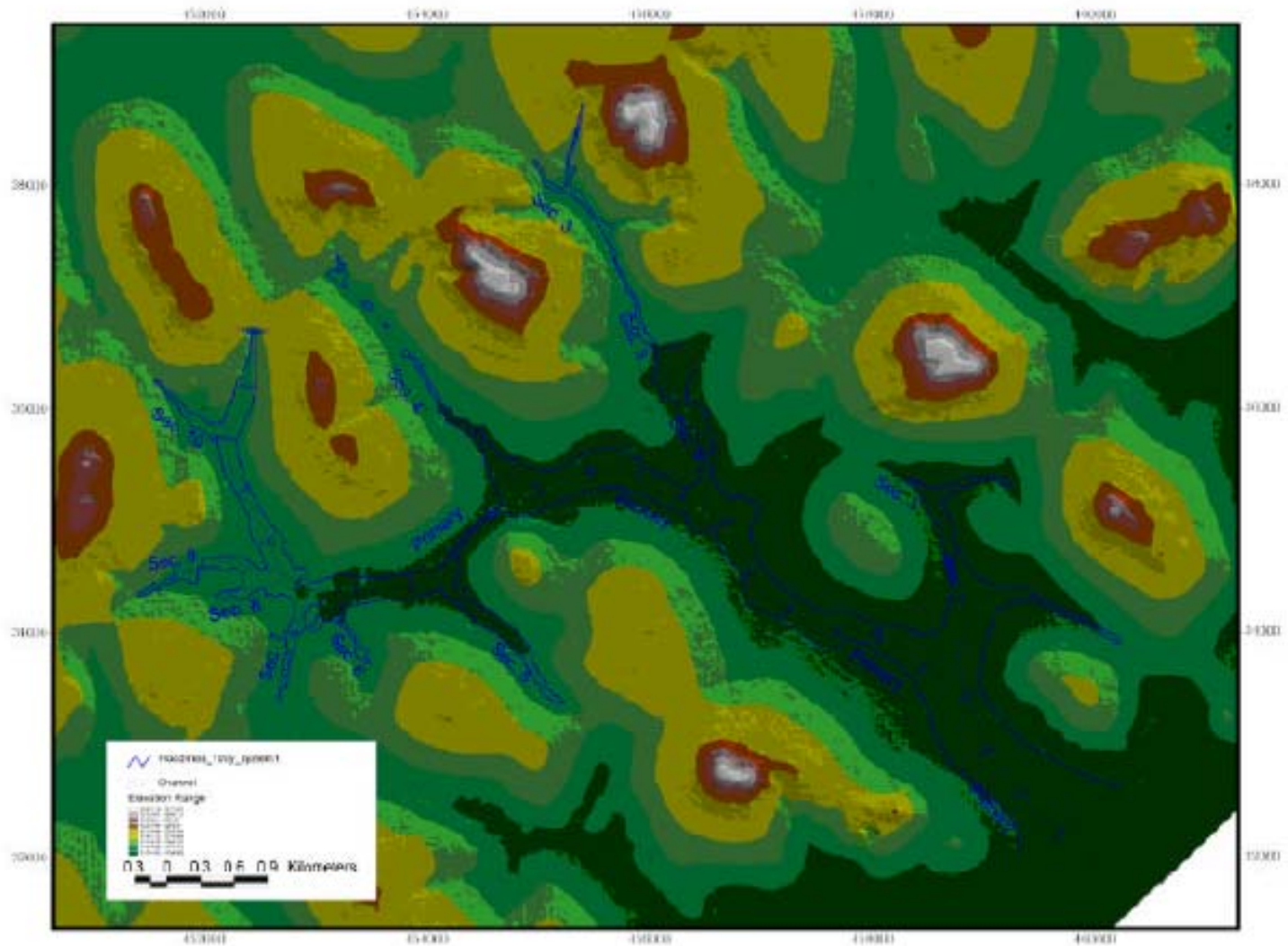
- 1 Nakivubo
- 2 Lubigi
- 3 Nalukolongo
- 4 Kansanga
- 4A Gaba
- 5 Mayanja / Kaliddubi
- 6 Kinawataka
- 7 Nalubaga
- 7A Nakelere/Nalubaga
- 8 Walufumbe
- 8A Mayanja North

Legend

-  Kampala District Boundary (Project Area)
-  River Channels
-  Catchment Boundaries







Digital Elevation Model of System 1 (Nakivubo)



Solid wastes piling at culverts along Kawala road crossing of drainage investments

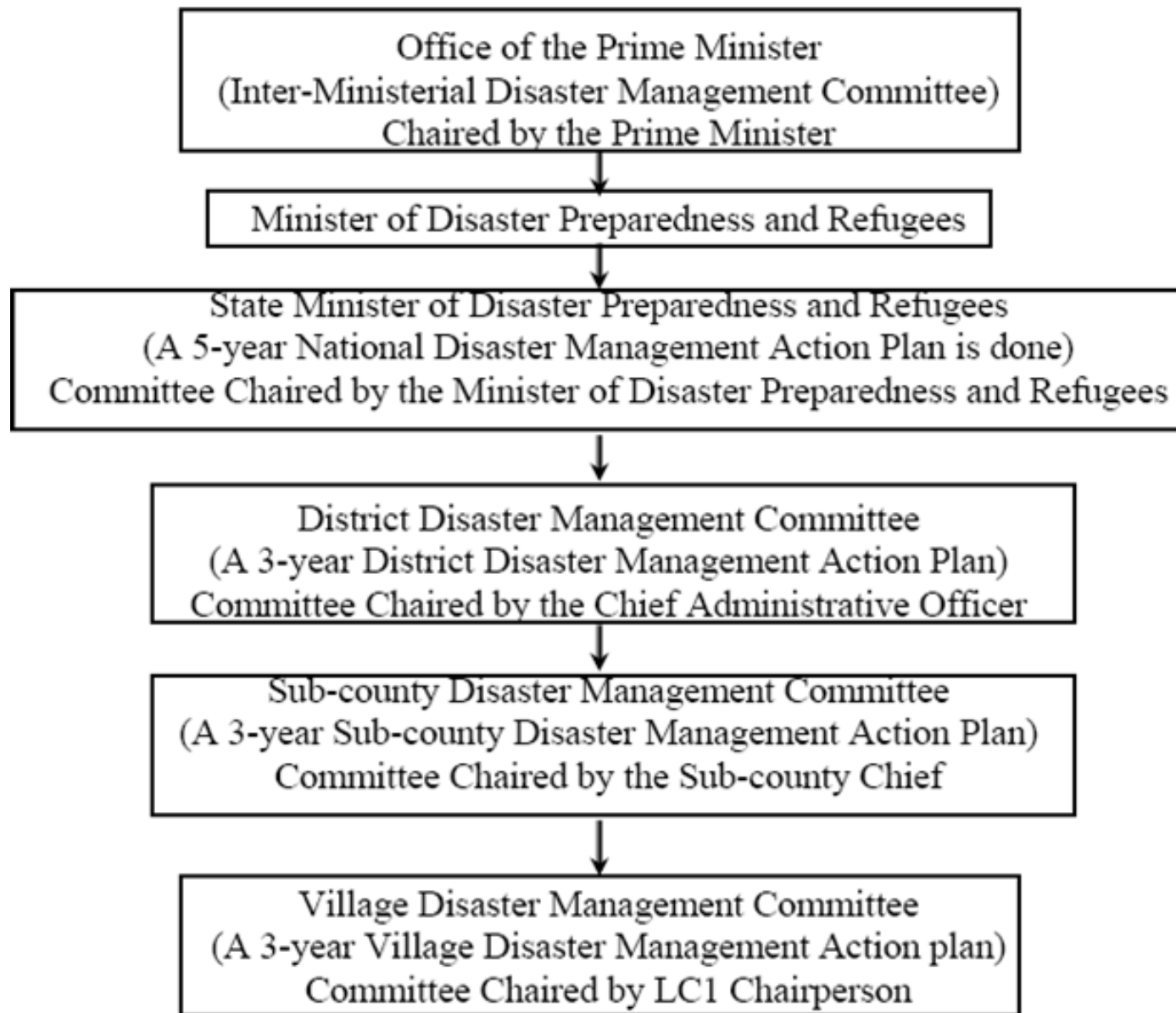






Flood Management and Planning Regimes

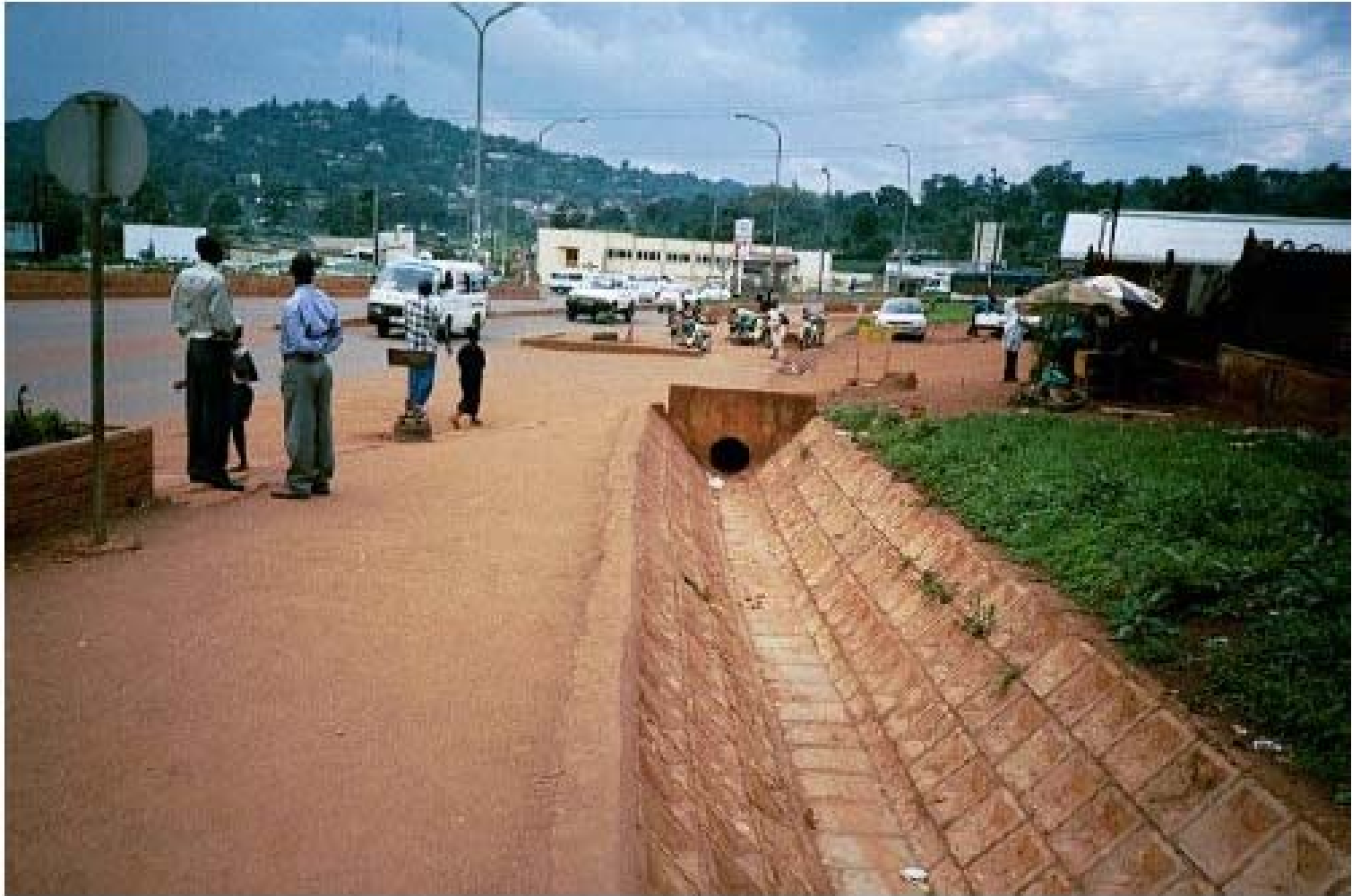
- Policy frameworks/laws
- Management of surface water
- Structure planning



DISASTER MANAGEMENT FRAMEWORK IN UGANDA

CONCLUSIONS

1. Investment in drainage infrastructure is crucial to reduce flooding
2. Need for frequent maintenance and desilting of drainage channels together with an effective waste management policy
3. Need to allow for communities to participate in settlement plans alongside behavioral change by people in locations that live in areas normally affected;
4. Further protection of wetlands from encroachment should be encouraged. Halting unauthorized human settlements and buildings and other activities that degrade wetlands.
5. There is a need to steer new development to areas at the lowest probability of flooding.
6. Need to re-invent the whole urban planning system that should recognize new and emerging challenges including climate change, rapid urbanization, poverty, informality and safety.



Drainage channel along New Port Bell Road near the junction with Coronation Avenue

Thank you