Critical elements of WASH infrastructure and their contribution to managing vector-borne diseases

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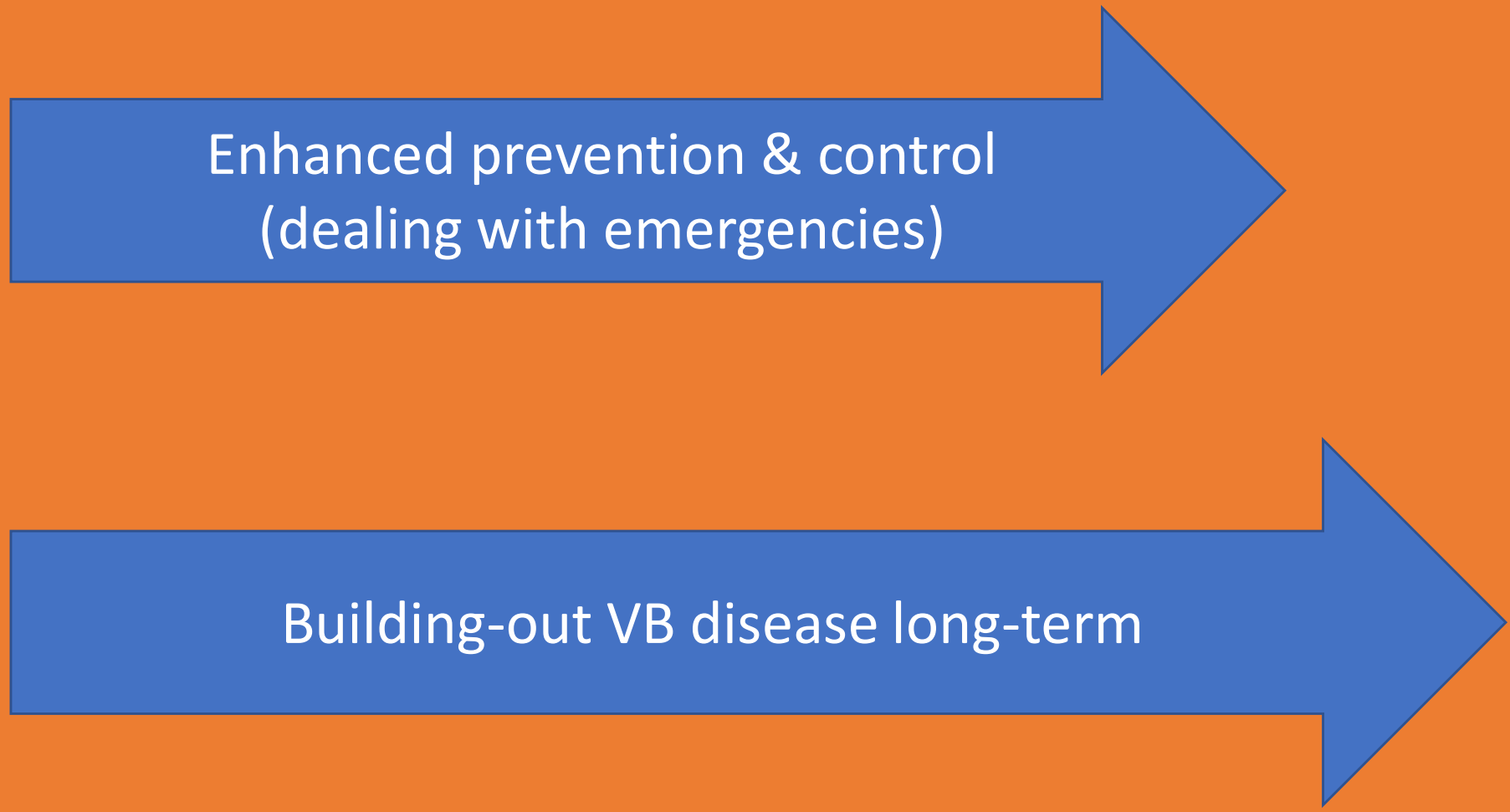
Why focus on urban settings?

- Huge growth in urban populations, particularly secondary cities and towns
  - By 2050 the urban population will double
  - Nearly 7 out of 10 people will live in cities
  - 60% of urban areas that will exist in 2050 have not yet been built
- VB diseases will predominantly become an urban problem particularly with urbanisaton patterns and adaptive vectors such as An. stephensi
- Preventing epidemics will preserve economic activity
- Understanding the demographics of informal settlements and links to rural homes is critical

Two-pronged approach

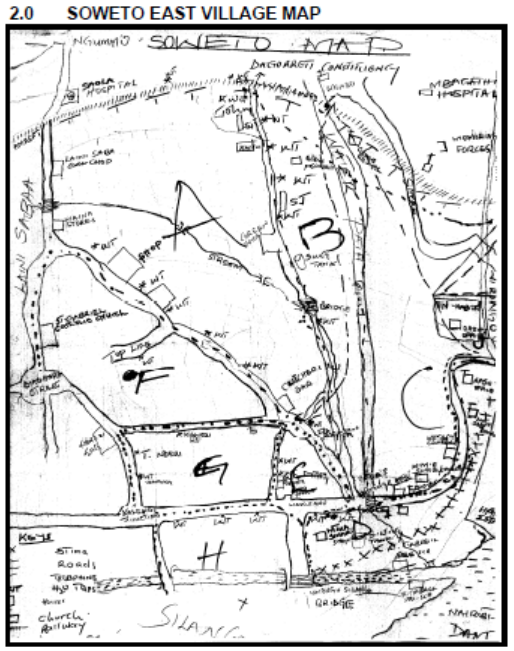


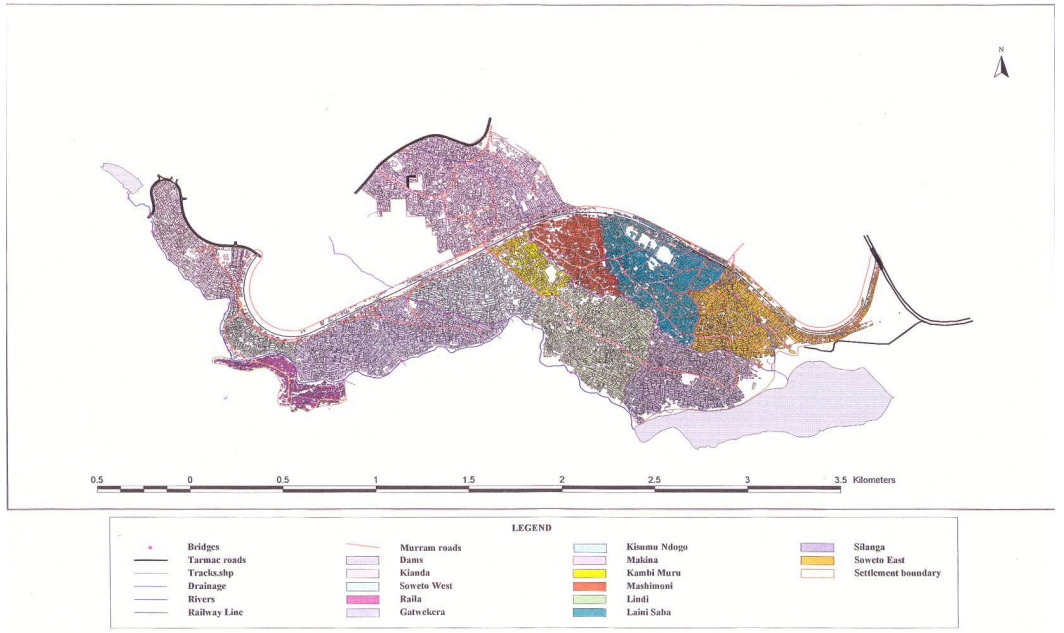
Our approach

- **“City” leader-led** approach mainstreaming multi-sectoral approaches
- Preventing these diseases will **save money** & boost economic development
- **Environmental modifications** (piped water, solid wate removal etc) used to reduce the source of mosquitoes and other vectors
- Ensure city-planners and those responsible for infrastructure design adopt these “**new approaches**” for the future expansion of urban settings
- In tandem, **targeted vector control & wide-scale vaccination (where applicable)** is required used proactively, not reactively
- Disease & mosquito **surveillance** needed to inform & target control, with a clearly designed role for communities
- City-led approach **working with the larger community**, particularly rapidly growing impoverished communities - recognising that amongst such communities innovative solutions can be developed and promoted

2 case studies on integrated WASH and projects

Community-led Planning in Kibera (Nairobi)





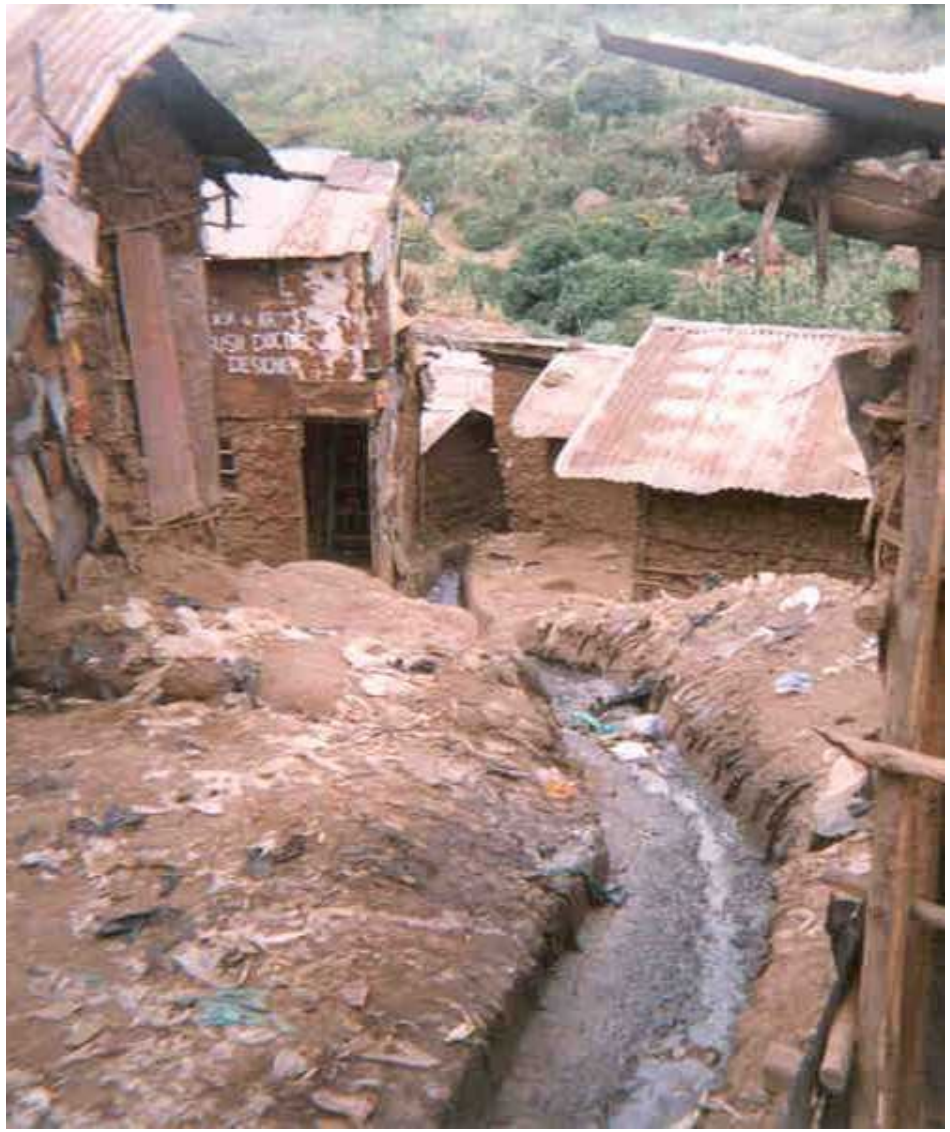
In 2004 Community members drew the above map. It shows the layout of their settlement in terms of boundaries, neighboring villages and shared resources. It also highlights location of homesteads, types of houses, all the services available and the physical infrastructure. This map shows that the community members have a clear understanding of their village and their resources, e.g. water points and physical infrastructure. Community members can easily understand and help in planning their settlement.

Background information on Kibera

- 7 Km Southwest of the city of Nairobi, within the city boundaries. 3.5 by 1.5 km, 250ha with densities > 2,000 / Ha. 13 Villages 500,000 to 700,000 inhabitants
- No formal road network directly hinders, economic development of the area
- Most lack access to clean water and sanitation facilities
- kiosks and stand pipes are the major sources of water

Background information on Kibera

- The pipelines are usually ruptured exposing water to contamination
- Pit latrines main form of sanitation these toilet facilities are commercialized and expensive
- No waste collection services poor access roads prohibits waste collection Waste gets swept into drains which empty into Nairobi Dam



In high density urban areas the need to address sanitation, drainage and solid waste management becomes critical to health

Community-based Infrastructure-led planning

- **Kibera Integrated Water & Sanitation Project**

Kibera Integrated Water & Sanitation Project

- 7 sanitation facilities now accessible to 21,000 residents of Soweto East (showers and toilets) cost US $ 8 per capita) Each Facility Management Group collects on average – Kshs 46,800 (US $ 600) per month
- Construction of the 1.5 km tarmac ring road across Soweto East completed, 600m of improved drains constructed
- The youth-organized door to door garbage collection for 400 homesteads
- Waste recycling has become a source of income with the youth recycling waste-paper for resale

Laini Saba, Kibera 2009

Laini Saba, Kibera 2022

Sustainable Sanitation Solutions for Forcibly Displaced Myanmar Nationals

Update: Dhaka September 2019

Topography makes faecal sludge haulage difficult

UNHCR
The UN Refugee Agency

Space for waste treatment severely restricted

UNHCR
The UN Refugee Agency

High water availability in Kutupalong camp

- Helps mitigate outbreak risk from high population density but poor drainage increases VB risk
- Faecal sludge → high strength wastewater off-site sanitation solutions

UNHCR
The UN Refugee Agency

Bacteriological quality of effluent crucial

UNHCR
The UN Refugee Agency

Conclusions:

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- **NEW APPROACHES** to **understanding the urban landscape** and its communities are needed: the symbiosis of informal and formal settlements
- These tools need to assist local-level data collection and decision making (simple tools based on excellent science)
- Progressive urban upgrading and Improved urban design (housing and infrastructure) and access to services, particularly WASH can help prevent VB and other diseases and also strengthen the resilience to disease outbreaks & epidemics. **THIS MUST BE LED BY MAYORS AND CITY LEADERS**
- **MULTI-SECTORAL APPROACHES** to the prevention and management of diseases will mean that increasingly those outside the "formal" health sector will play an important role. Local level is where multisectorality comes alive.
- **HEALTHY CITIES, HEALTHY PEOPLE CHALLENGE FUND AND ACCELERATOR** is supported by cities as an innovative way to test and prove concepts that can be rolled out with domestic or international resources. **It also builds preparedness capacity against future Zoonotic epidemics**

Thank you for your attention !

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IMPLEMENTING THE NEW URBAN AGENDA

11 SUSTAINABLE CITIES AND COMMUNITIES

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