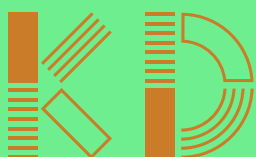


# DARAJA

Developing Risk Awareness  
through Joint Action  
in Nairobi and Dar-es-Salaam



Vera Bukachi, Research Director  
CCDA VII, Safari Park Hotel,  
Nairobi 11 Oct 18



---

habari

hello

hola

hej

---

background

productive public space

the art of CO

transdisciplinarity

“10 YEARS of  
PRODUCTIVE  
PUBLIC SPACES”

KDI

*to become familiar*  
kounkuey

NAIROBI | LOS ANGELES | STOCKHOLM

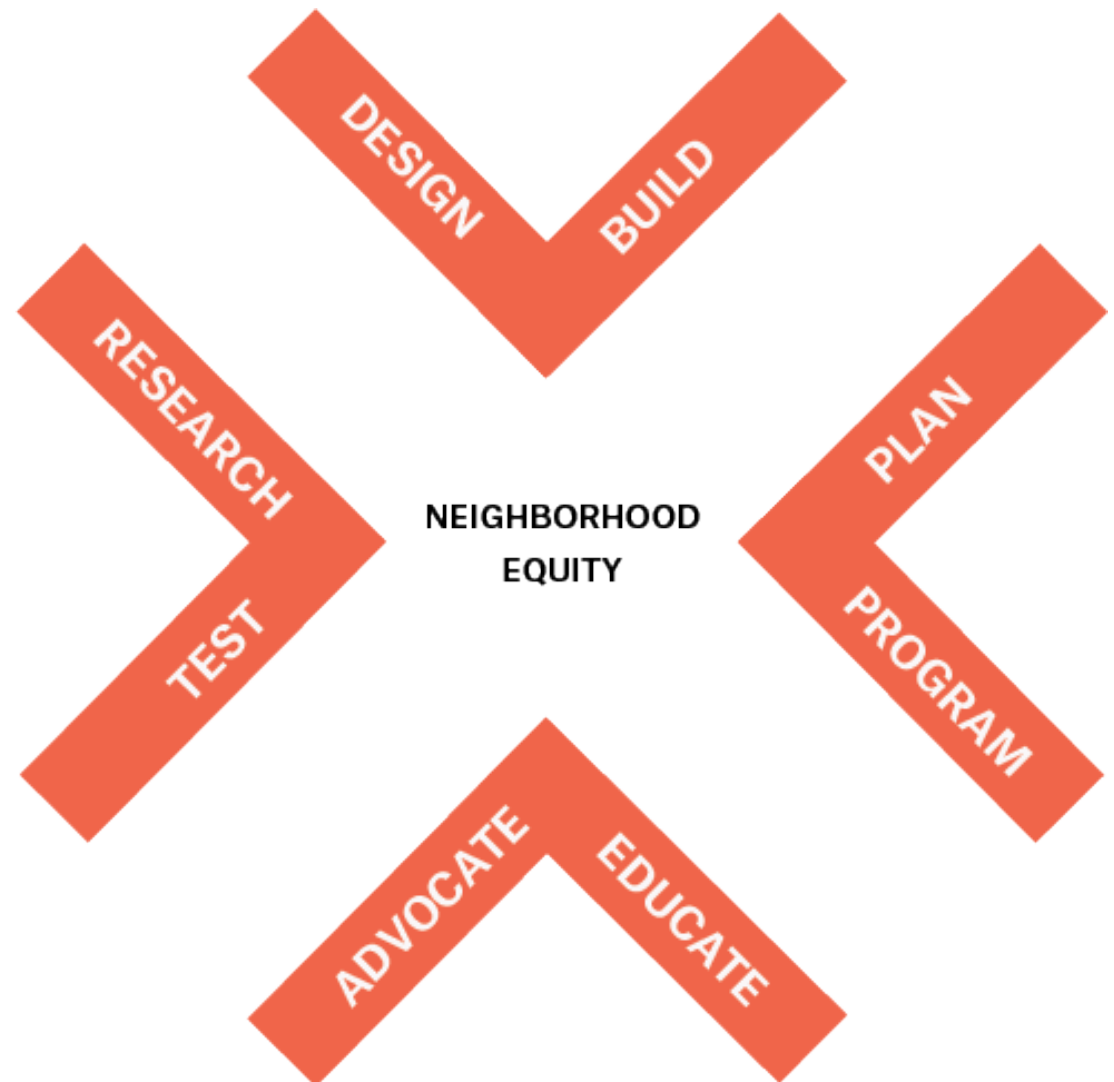


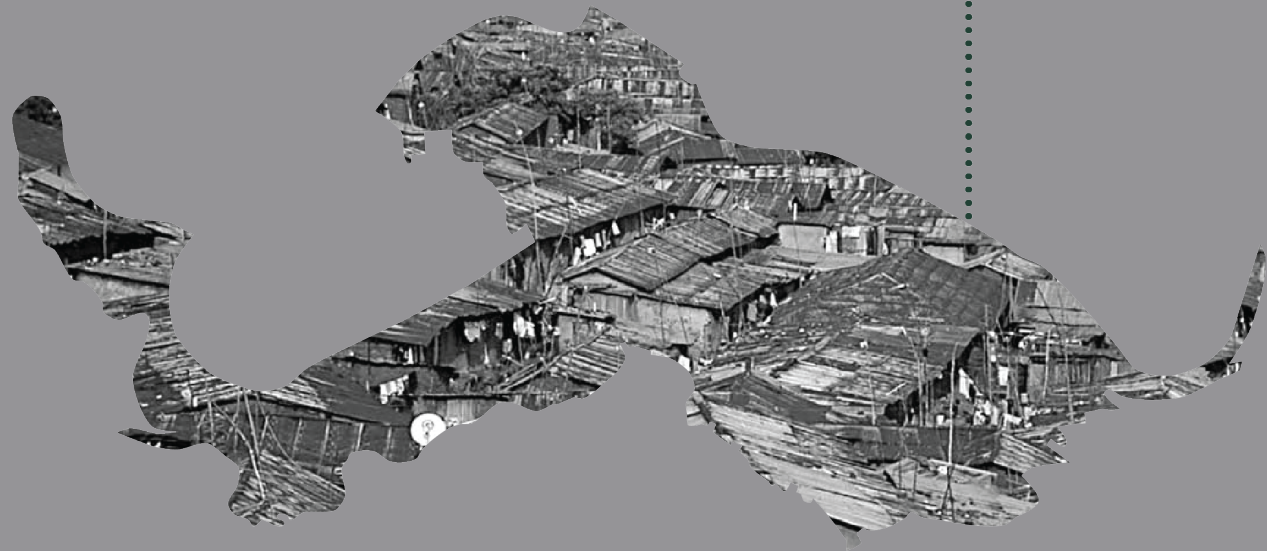
# KDI

KDI is a non-profit **design** and **community** development organization.

We partner with **under-resourced** communities to **advance equity** and activate the **unrealized potential** in neighborhoods and cities.

We advance our mission through **advocacy, research, planning,** and built works.





nairobi, kenya













## PHYSICAL

1. Bridge
2. Multi-purpose hall
3. Playground
4. Office
5. Garden
6. Sundries kiosk
7. Park
8. Access road

## SOCIAL

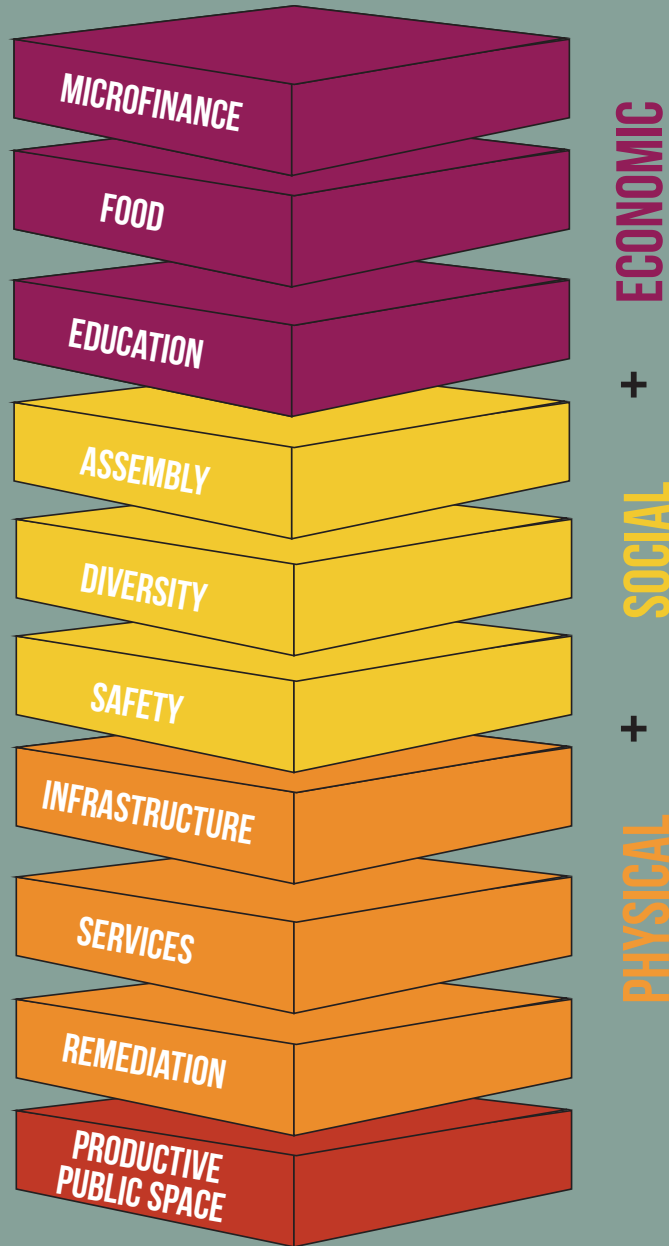
2. Community Programming  
School, Church
4. Management Training  
Skills Training

## ECONOMIC

2. Community Hall Rental  
Watertap
4. Savings and Loan  
Program Basket Weaving  
Cooperative
5. Vegetable Business  
Compost Farm



# PRODUCTIVE PUBLIC SPACE :



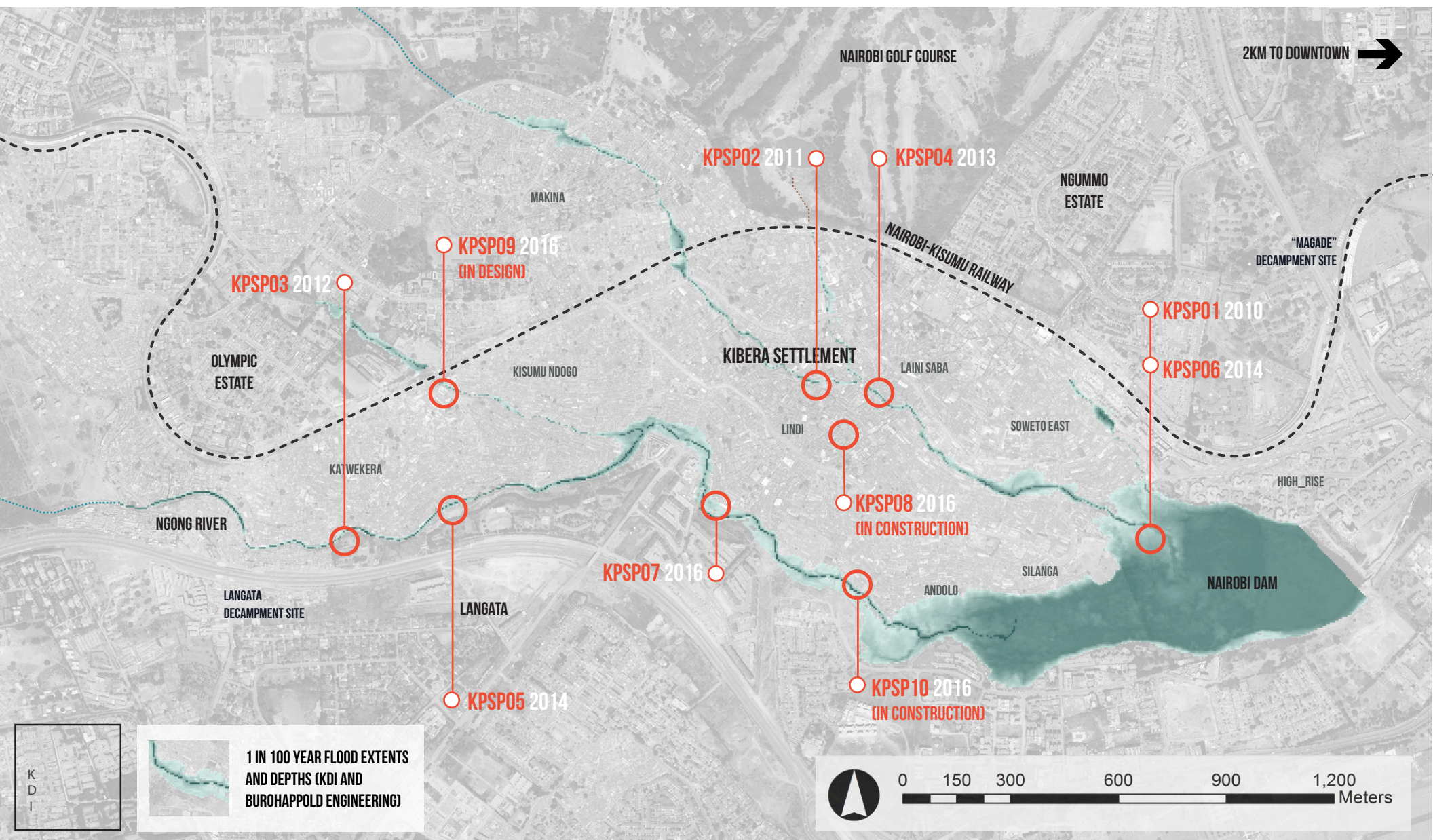


# KIBERA, NAIROBI | PPS NETWORKS



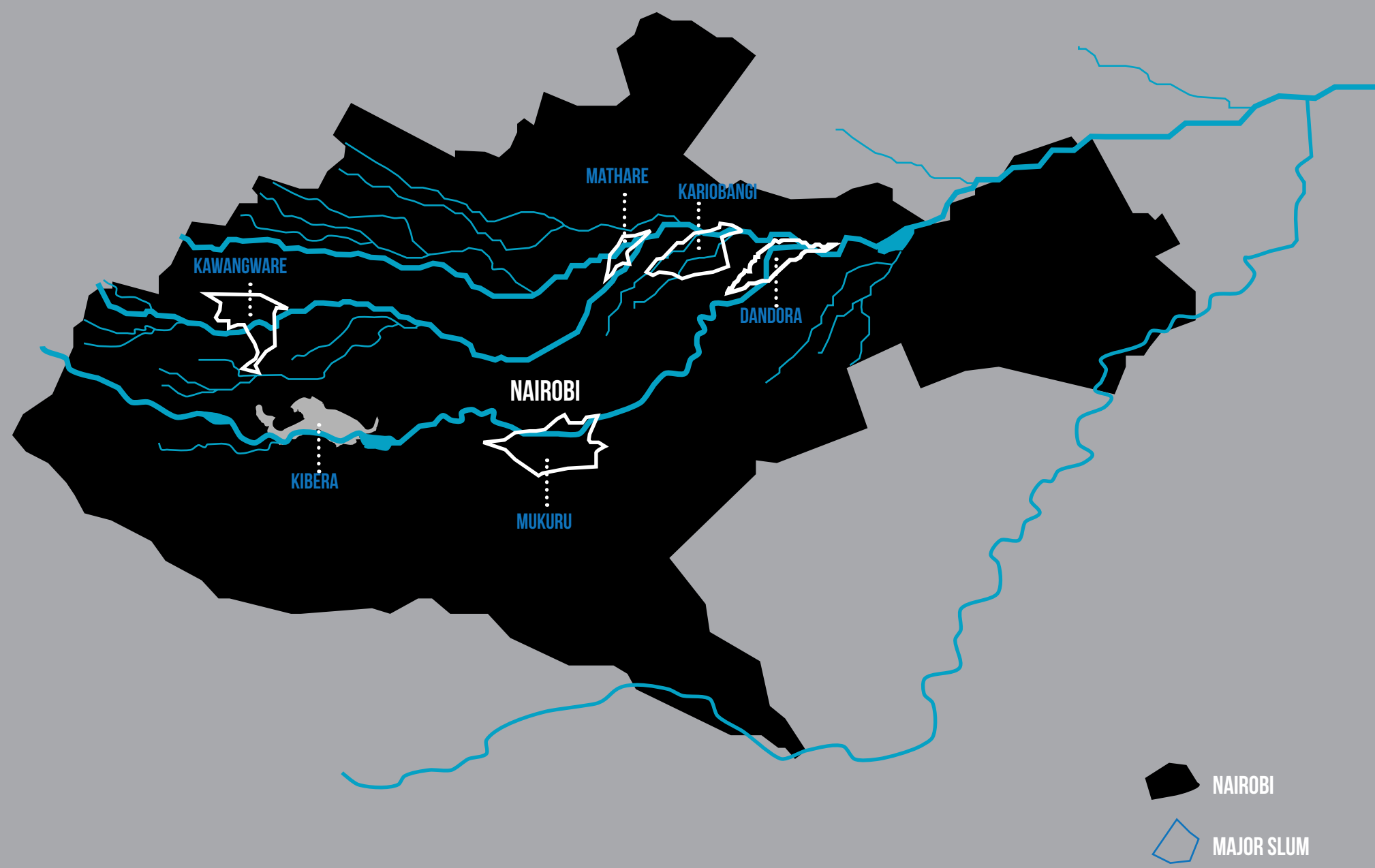


# KIBERA PUBLIC SPACE PROJECT AND FLOODING

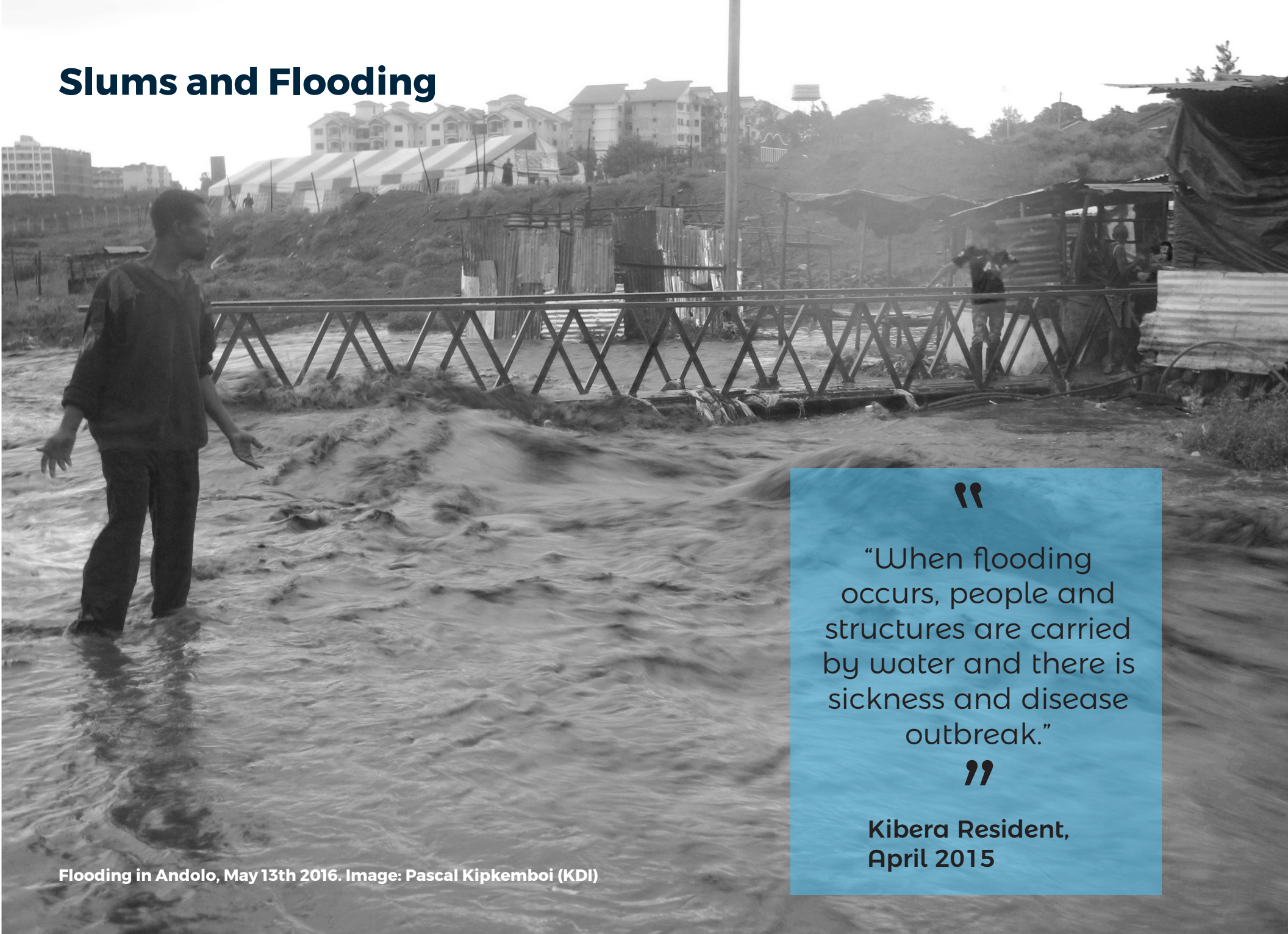




# SLUMS AND MAJOR RIVER SYSTEMS OF THE NAIROBI RIVER BASIN



# Slums and Flooding



Flooding in Andolo, May 13th 2016. Image: Pascal Kipkemboi (KDI)

“

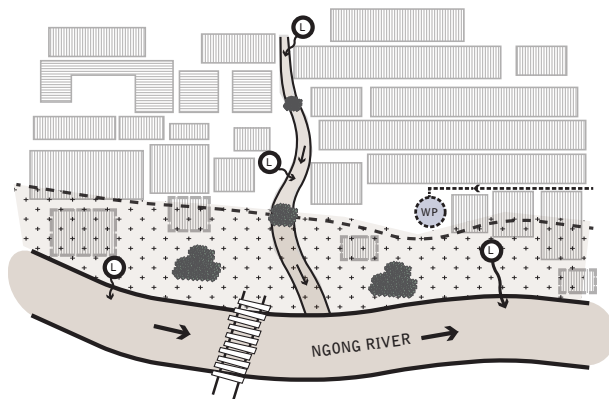
“When flooding occurs, people and structures are carried by water and there is sickness and disease outbreak.”

”

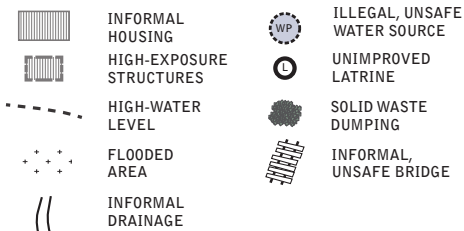
Kibera Resident,  
April 2015

# WATER, SANITATION, SOLID WASTE, FLOODING

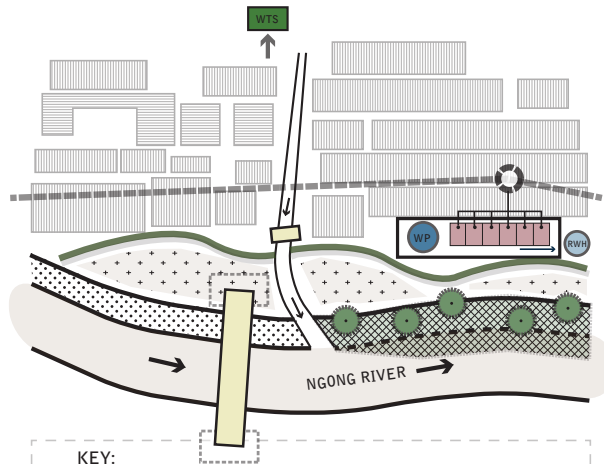
1. EXISTING CONDITION:  
KIBERA FLOOD HOTSPOT



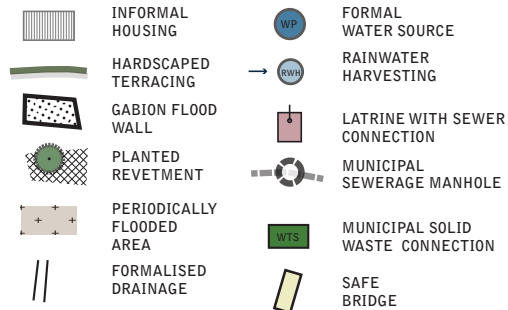
KEY:



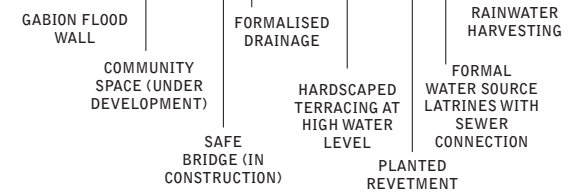
2. PUBLIC SPACE AND INTEGRATED WATER  
MANAGEMENT



KEY:



3. KDI KIBERA PUBLIC SPACE PROJECT 07  
(under construction March 2016\*)



\*PHOTO BY PASCAL KIPKEMBOI,  
KDI FIELD ASSOCIATE



# RISK > ADAPTATION > RESILIENCE?

- Not relevant at this scale

● Relevant at this scale

	FLOOD RESILIENCE MEASURES	Household	Compound	Community	Settlement	Watershed
		Resident	Landlord	Community Orgs.	Local Gov.	State/Nat. Gov.
STRUCTURAL	Raise floor level	●	-	-	-	-
	Raise Internal Assets	●	-	-	-	-
	Door step	●	-	-	-	-
	Floor drainage	●	-	-	-	-
	Building Waterproofing	●	●	-	-	-
	<b>Flood walls (local)</b>	●	●	●	-	-
	<b>Rainwater Harvesting</b>	●	●	●	-	-
	<b>Local Flood walls (river/drainageway)</b>	●	●	●	-	-
	<b>Drainage widening/formalisation</b>	-	-	-	-	-
	<b>Green Infrastructure</b>	-	-	-	-	-
NON-STRUCTURAL	<b>Engineered Flood Protection</b>	-	-	-	-	-
	<b>Drainage clearance</b>	●	●	-	-	-
	<b>Flood Preparation Committees</b>	-	-	●	●	-
	<b>Flood Response Committees</b>	-	-	●	●	-
	<b>Waste collection (microenterprise)</b>	-	-	●	●	-
	<b>Micro-savings programs</b>	-	-	●	●	-
	Government Flood awareness campaigns	-	-	●	●	-
	Waste collection (municipal)	-	-	●	●	-
	Early warning system	-	-	●	●	-
	National Disaster Response Mobilisation	-	-	●	●	-
	Land Use Regulation/Assisted Relocation	-	-	●	●	-

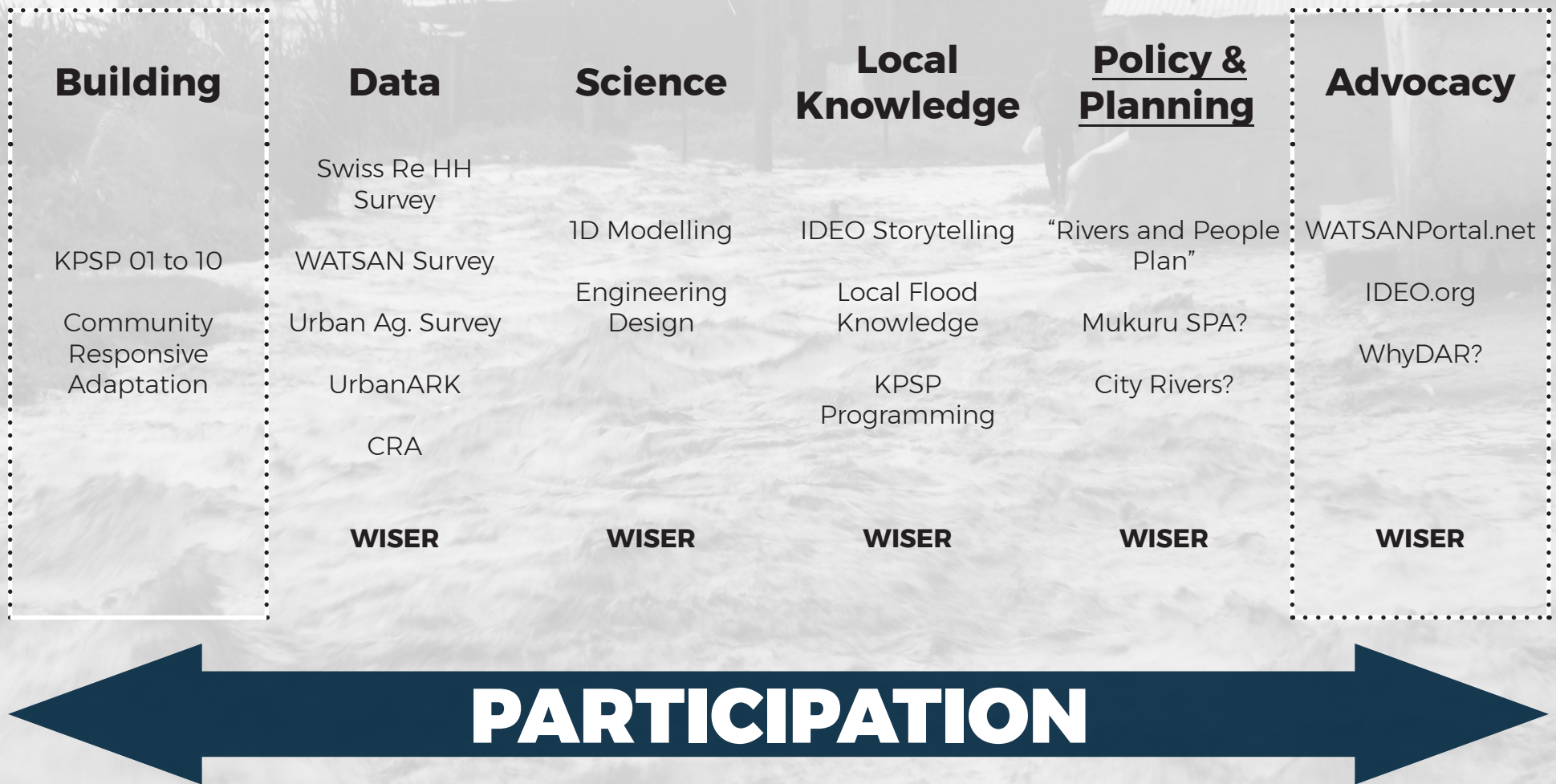
AUTONOMOUS ACTION BY INDIVIDUALS

COMMUNITY RESPONSIVE FLOOD RESILIENCE

PUBLIC POLICY MEASURES

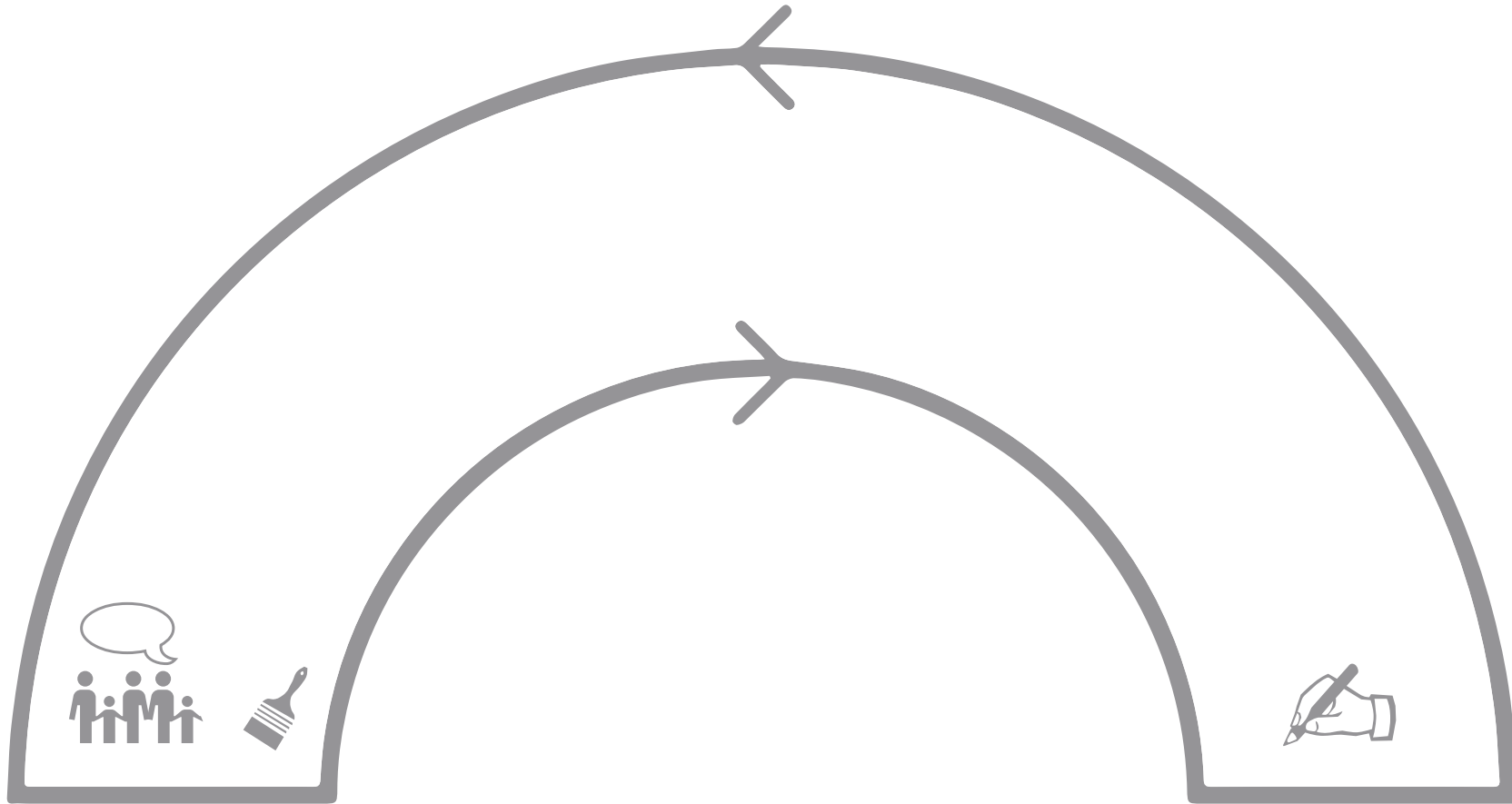
Mulligan, J., Harper, J., Kipkemboi, P., Ngobi, B., and Collins, A.: Community-responsive adaptation to flooding in Kibera, Kenya, Proceedings of the Institution of Civil Engineers - Engineering Sustainability, online, 1-13, doi:10.1680/jensu.15.00060, 2016.

# KDI's Climate, Risk, Resilience - Portfolio



# The art of CO

- Communicate Flood Risk
- Community Unity and
- Collect Data



- Create Common Language
- Tell stories

- Co Design with Government and institutional partners
- Framework for decision-making.



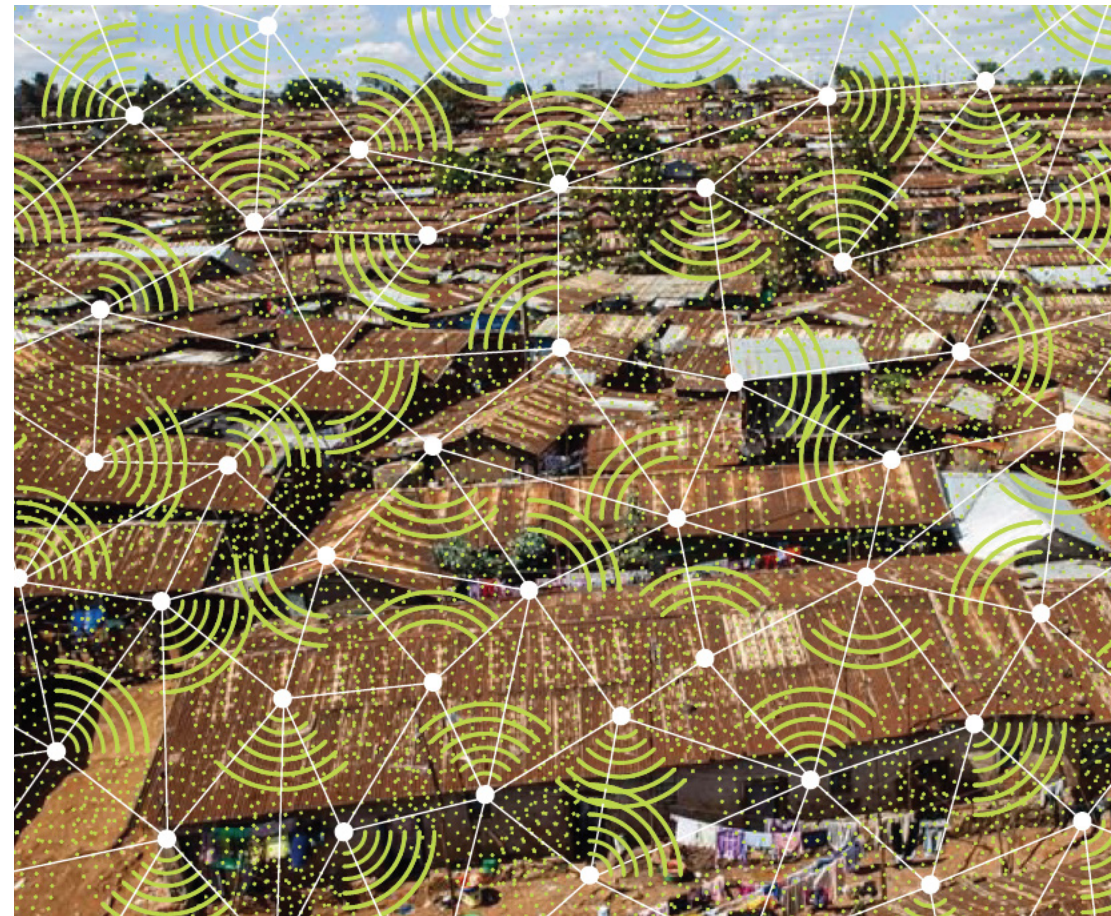






educational murals





mama's group sms networks



# GETTING WISER?



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# our opening proposition

- ▶ residents of informal settlements are in the **cross hairs** of climate change/extreme weather impacts
- ▶ climate risk information remains often inaccessible, inappropriate, **unactioned**
- ▶ Service providers are **struggling** to reach these most vulnerable in informal settlements

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scoping study

baselining

co-designing & deploying pilots

evaluating impact

sharing learning

leveraging

---

**2018**

**scoping study**

desk study, interdisciplinary workshops, KIs

**baselining**

Surveys, KIs, FGDs, workshops

**2019**

**co-design & deploy pilots**

at city & settlement

**evaluate impact**

using codeveloped MEL / tools

**share learning**

forums, publications, WISER TRANSFORM

**leverage**

through influencing policy and practice in Nairobi and Dar

# Interdisciplinary workshops





# Focus Group Discussions

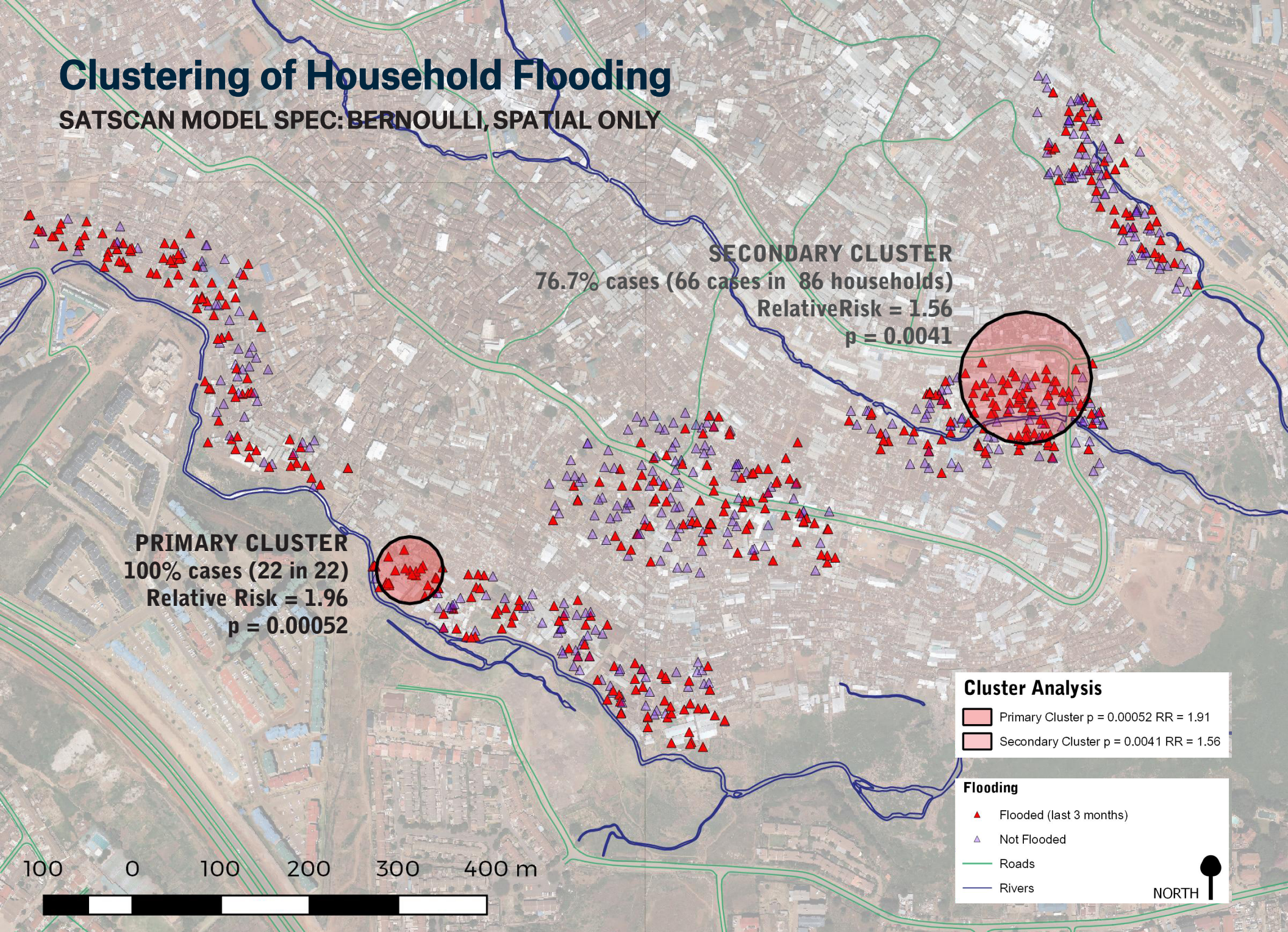


Andolo Risk Asessment, 2016.  
Image: Pascal Kipkemboi (KDI)



# Clustering of Household Flooding

SATSCAN MODEL SPEC: BERNOULLI, SPATIAL ONLY



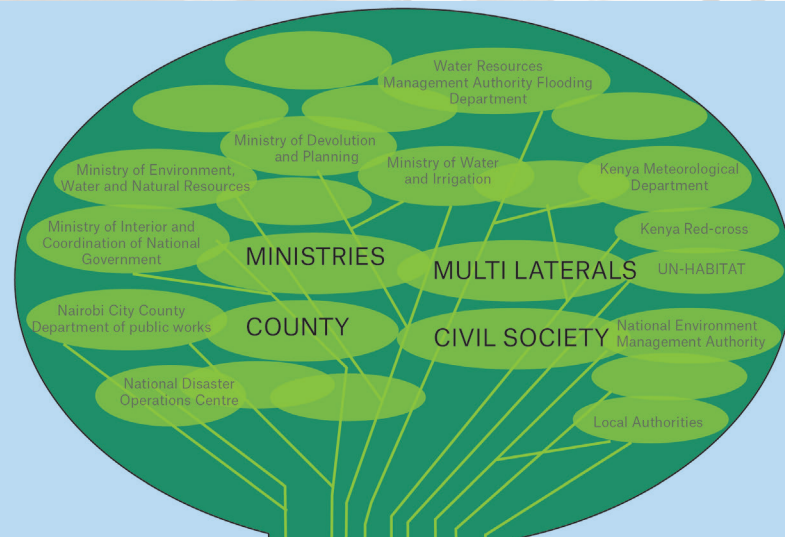


## THREE SCALES OF ACTION

1. CITY  
...CO-CREATE  
CITIZEN-CITY URBAN  
RISK ECOSYSTEM WITH  
INSTITUTIONAL  
PARTNERS.

2. NEIGHBOURHOOD  
...CO-DEVELOP  
NEIGHBOURHOOD  
SCALE INTERFACES  
(E.G. WITH SDI)

3. COMMUNITY  
...CO-PRODUCE  
CONSISTENT  
PARTNER TOOLKITS +  
PLATFORMS (STORY  
SPHERES)



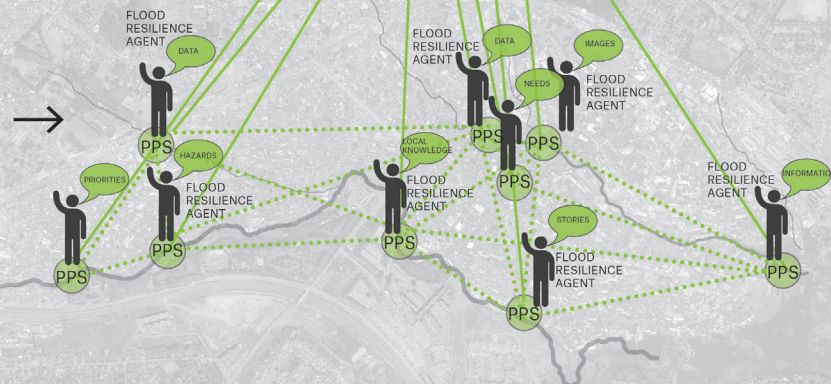
RESIDENT DESIGN THINKING

AMPLIFY

KDI/IDEO DESIGN THINKING

## PROTOTYPES 2017

Site Logo, Story Telling, Facebook Page, Way Finding Signs, Warning Signs, Notice Board, Mural, Flag, Photo Wall, Booklet, Vision Statement Development, Google Maps 360°, Story Spheres, Whats-app Group, Event Posters, Flood Event Posters, Kids Education Posters...



# our design proposition:

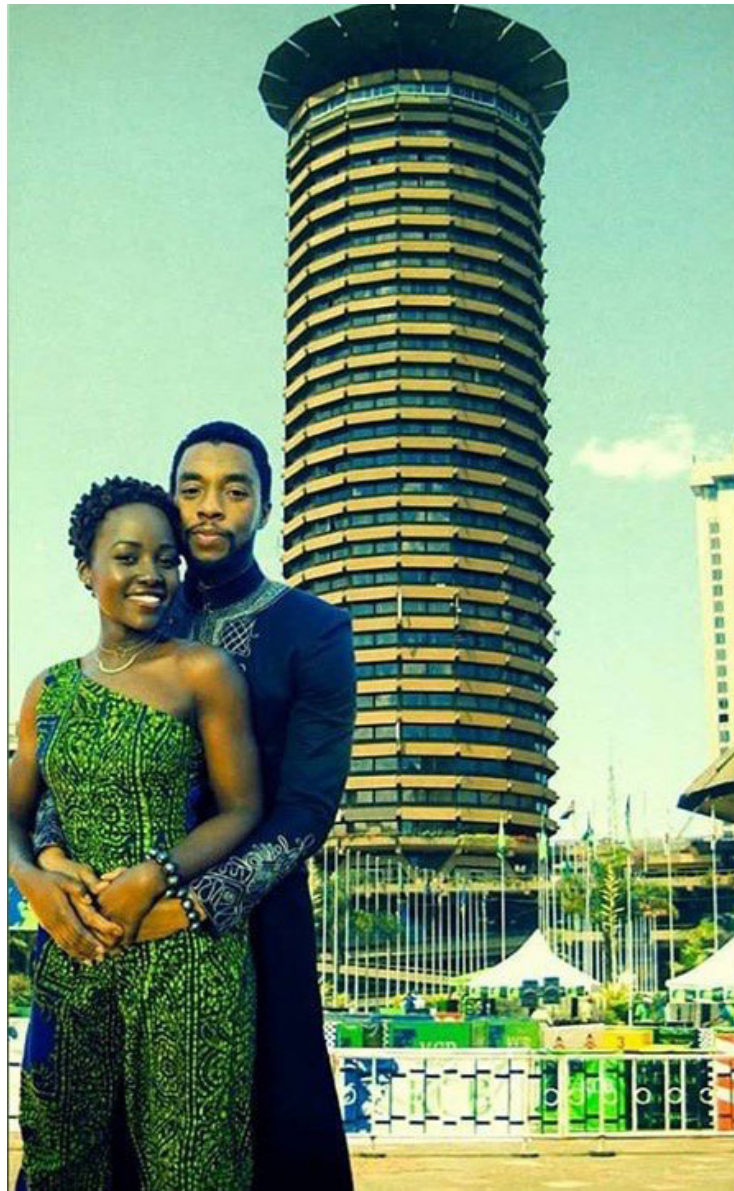
## Start small, leverage well

**Design and implement 4 settlement and city pilots in Nairobi and Dar, with the intention of**

- ▶ Improving access to and enhancing use of relevant weather and climate information
- ▶ Enabling residents to be more resilient, better prepared, enabled to take adaptive measures
- ▶ Enabling city authorities to make better climate/extreme weather informed decisions in relation to informal settlements



# building Wakanda (Nairobi? Dar?)... under climate uncertainty..



**ASANTE, TACK, GRACIAS, THANK YOU!**

**WWW.KOUNKUEY.ORG**

**VERA@KOUNKUEY.ORG**