

LIVING DATA HUBS

**CIVIC DESIGN
DATA LAB**



**CITY INFRASTRUCTURE
EQUITY LAB**



Massachusetts Institute of Technology



Tunapanda

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Senseable City Lab

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1



many people still **do not have access to internet**, which is an essential infrastructure in our global economy – especially relevant under covid.

2



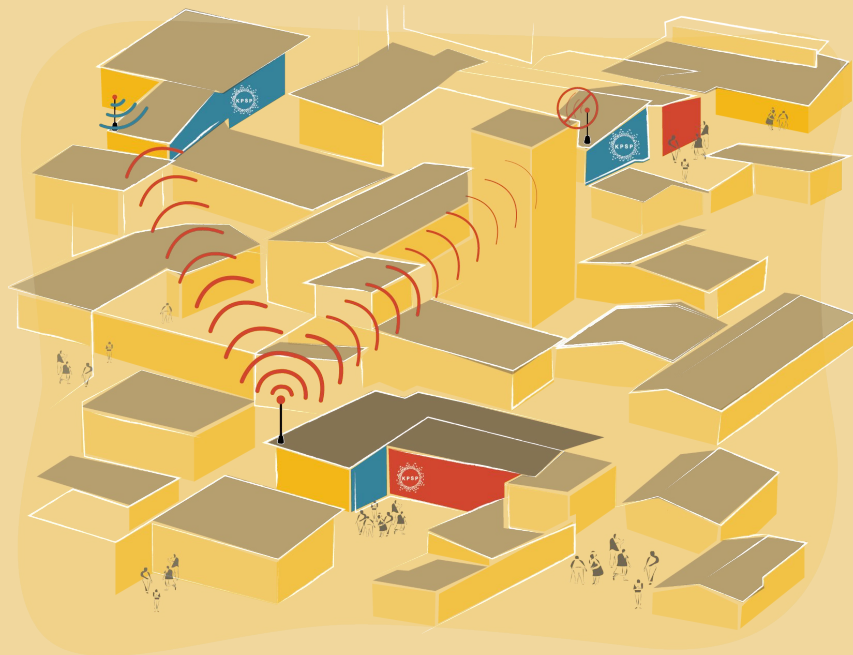
missing data further marginalizes those who live on the margins of society, simply because they don't exist in the data.

CO-DESIGN

WIRELESS NETWORK

+

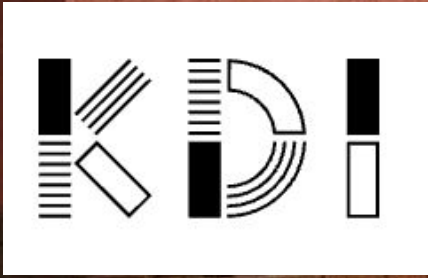
DATA COLLECTION TOOL



COMMUNITY OWNED

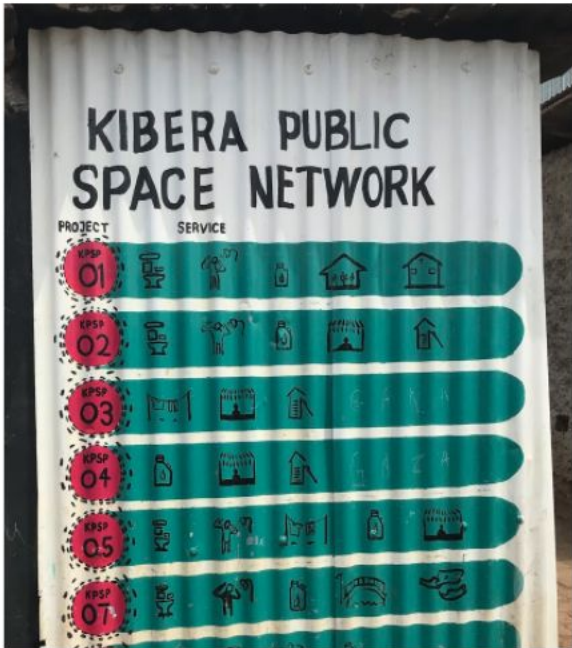


COMMUNITY BUILT





KDI KIBERA PUBLIC SPACE PROJECT SITES





YEAR 1 :

**Sustainability
Planning**

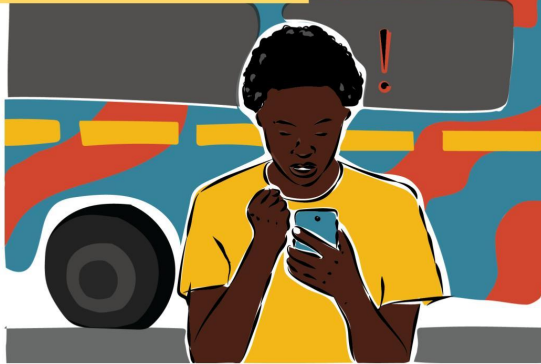
**CBO
Engagement**

**Networking
Pilot**

**Community
Data Plan**



Somba wants to connect to the internet but he is out of bundles.



He heard that the KPSP's having been working on a plan to provide internet for a low cost.



He connects to Whatsapp and find out that his work needs him to come in early today.



He then connects with friends to see how the traffic is to determine if he can make it on time.



He is able to connect to Whatsapp to let his boss know he can come in early but might be 30 mins late.



"The business model and access permission that allows our community to use the internet is up to all of you. This project is about how we can build this plan together."



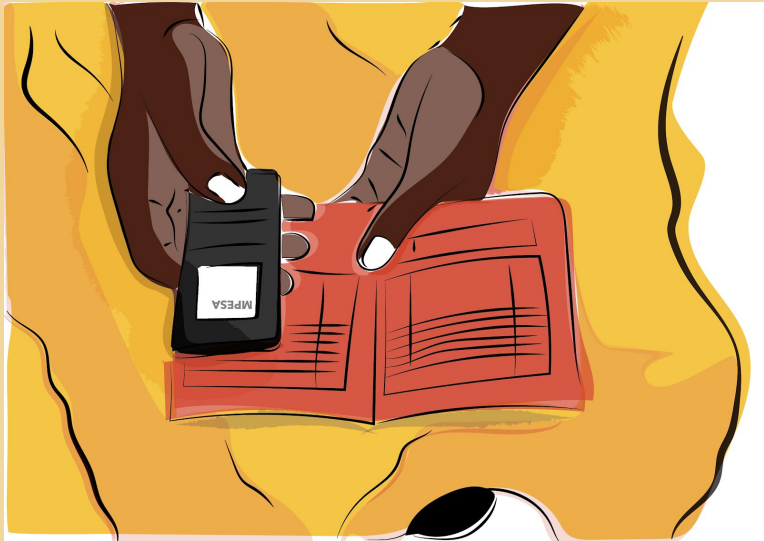
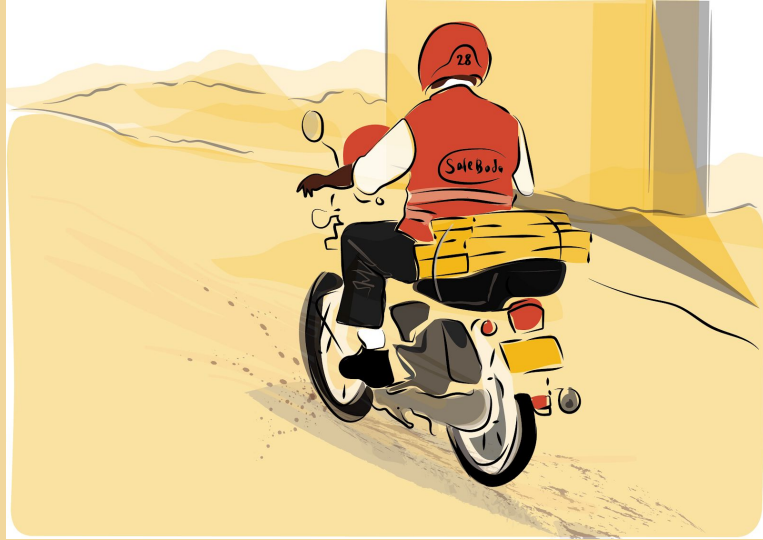
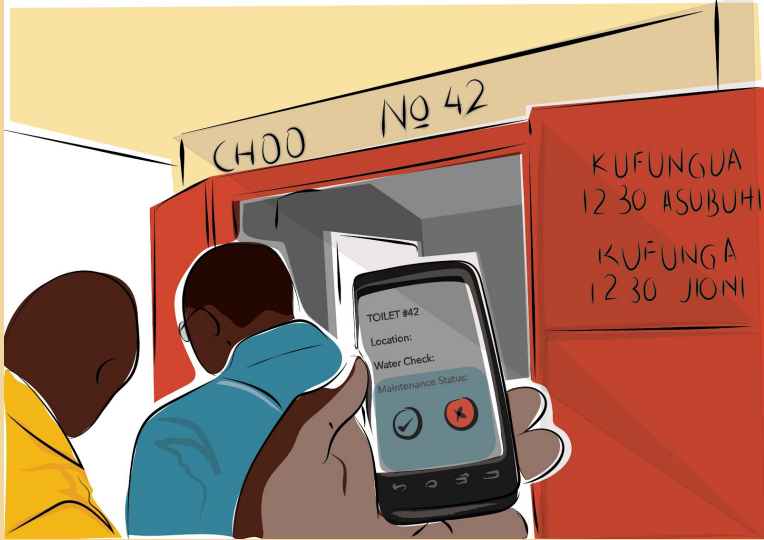
The hope is that this project will allow KPSP to have internet hot spots at more than one place, creating a network that connects Kibera, from schools to public spaces.



With the hope to connect communities through KPSP public spaces.



WHAT IS A INTERNET HOT SPOT?



WHAT IS DATA ?

RFP

CALL FOR PARTICIPANTS

This Request for Proposals (RFP) process will help KDI identify which CBOs can qualify for the first phase of this project.

2. Submission Process

Hard copies of FULLY COMPLETED proposals should be hand delivered to the KDI office at Kenyatta market, Masera house, 2nd floor. Alternatively, soft copies can be submitted to the below email addresses. Deadline for submission is 8 July 2020

For further information contact, Ibrahim Maina (+254 720 588 128) E-mail (ibra@kounkuey.org) or Kezia Ojal (+254 717 912 444) E-mail (kezia@kounkuey.org).

The E-mailed proposals can be in word or PDF. If another format is used, Ibrahim or Kezia will confirm whether the format can be read.

3. Organisation Details

3.1. Name of the Community Organisation

ANWA JUNIOR ACADEMY

3.2. Contact Person 1 Ann Wambui - Director

Phone..... 0710 745432

3.3. Contact Person 2 Patrick Mukumbu - BOM

Phone..... 0702 518 046

3.4. Is the Community organisation legally registered?

- YES: Month..... 03 Year..... 2006 and with whom..... MINISTRY OF EDUCATION
- NO

3.5. How many registered members in the group? 20

Kounkuey Design Initiative
Masera House, Kenyatta Market
Nairobi, Kenya
kounkuey.org
+254 205223227

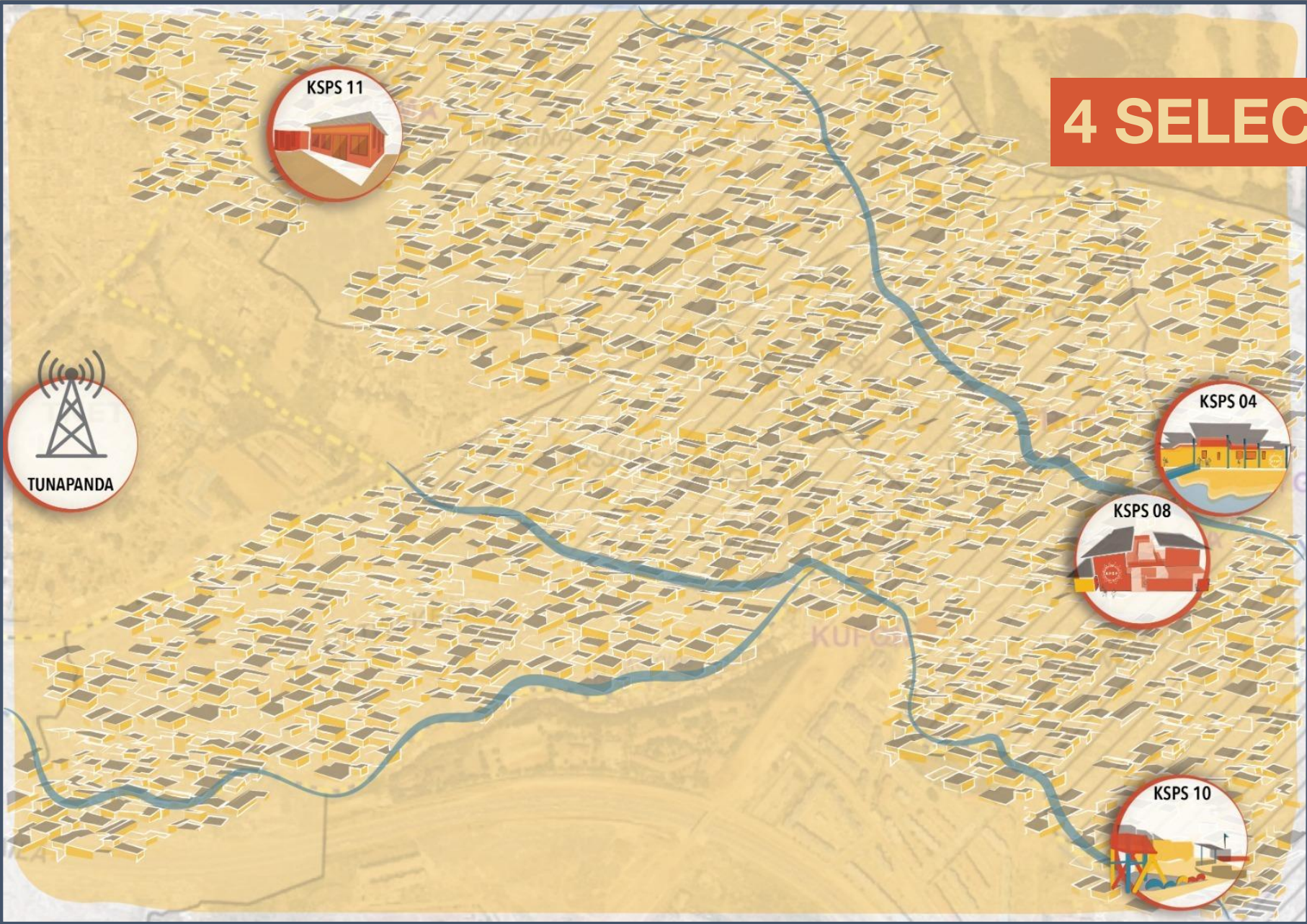


[Handwritten signature]
5

3.6. State the mission of the group?

To encourage community coherence and provide a forum for sharing ideas and knowledge through education

4 SELECTED SITES





VUMA



ABC

4 SELECTED SITES



ANWA

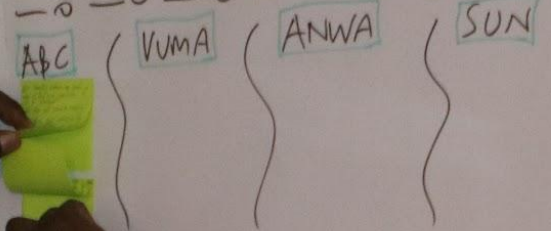


SUN CENTER

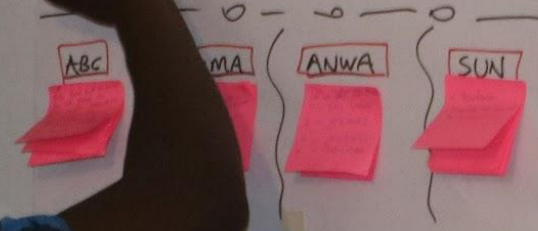


USE STANDARDS
KPS/PIN Rules & Regulations

WE WILL USE INTERNET FOR:



WILL NOT USE INTERNET FOR:



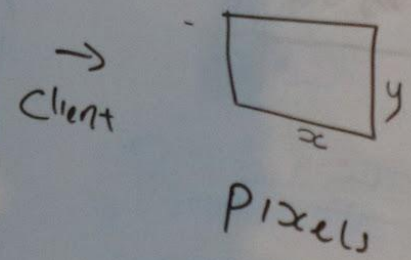
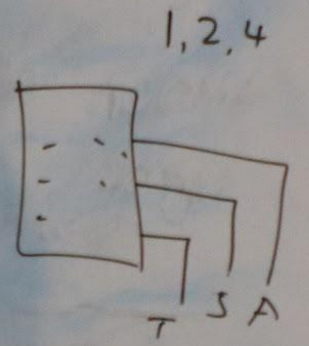
Groups

- Vuma
- Anwa
- ABC
- Ndow
- Usab

Kbps
Mbps
Gbps
Mega bit
second
that
with a cumm
(t) at any
seconds,

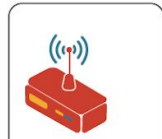
INET-WIRELESS
Tnet@ClassNetzo!

Data - Amount of data that can pass thr' a network channel.





GLOSSARY



Access Point



Cellphone

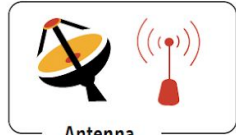


Laptop



Desktop

Client(s)

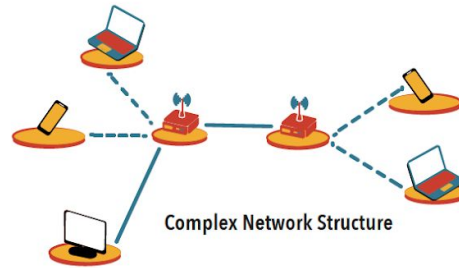


Antenna

--- Wireless
— Wired

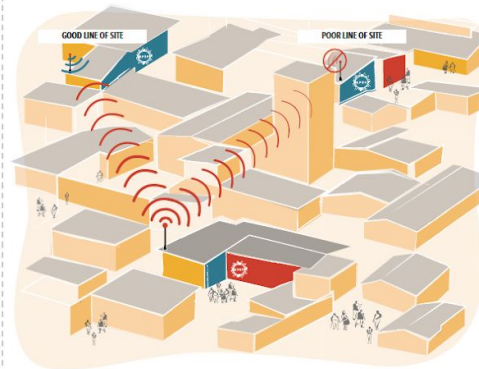
⊘ Not Allowed ✓ Allowed

Connection



Barriers to Communication

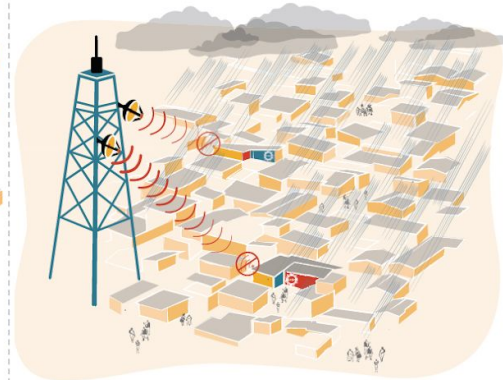
Barrier 1: Line of Sight



Devices must be able to have an unobstructed view from one to the other

Barriers to Communication

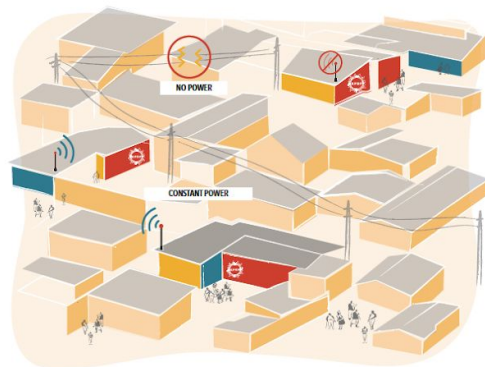
Barrier 2: Weather



Rain can interfere with communication between devices, especially when the network is badly designed

Barriers to Communication

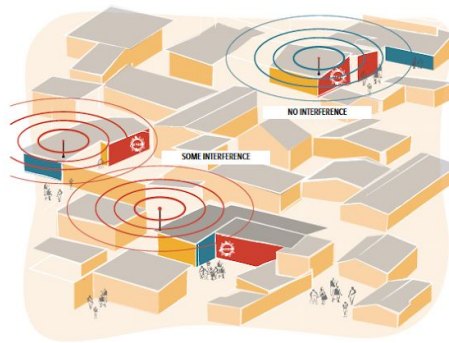
Barrier 3: Power



The equipment will not work if there is no power supplied.

Barriers to Communication

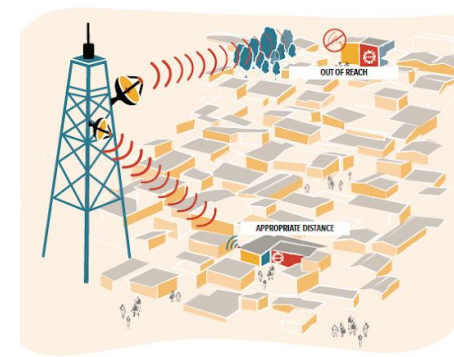
Barrier 4: Interference



Devices can still communicate with little interference. With a lot of interference, the devices get really confused!

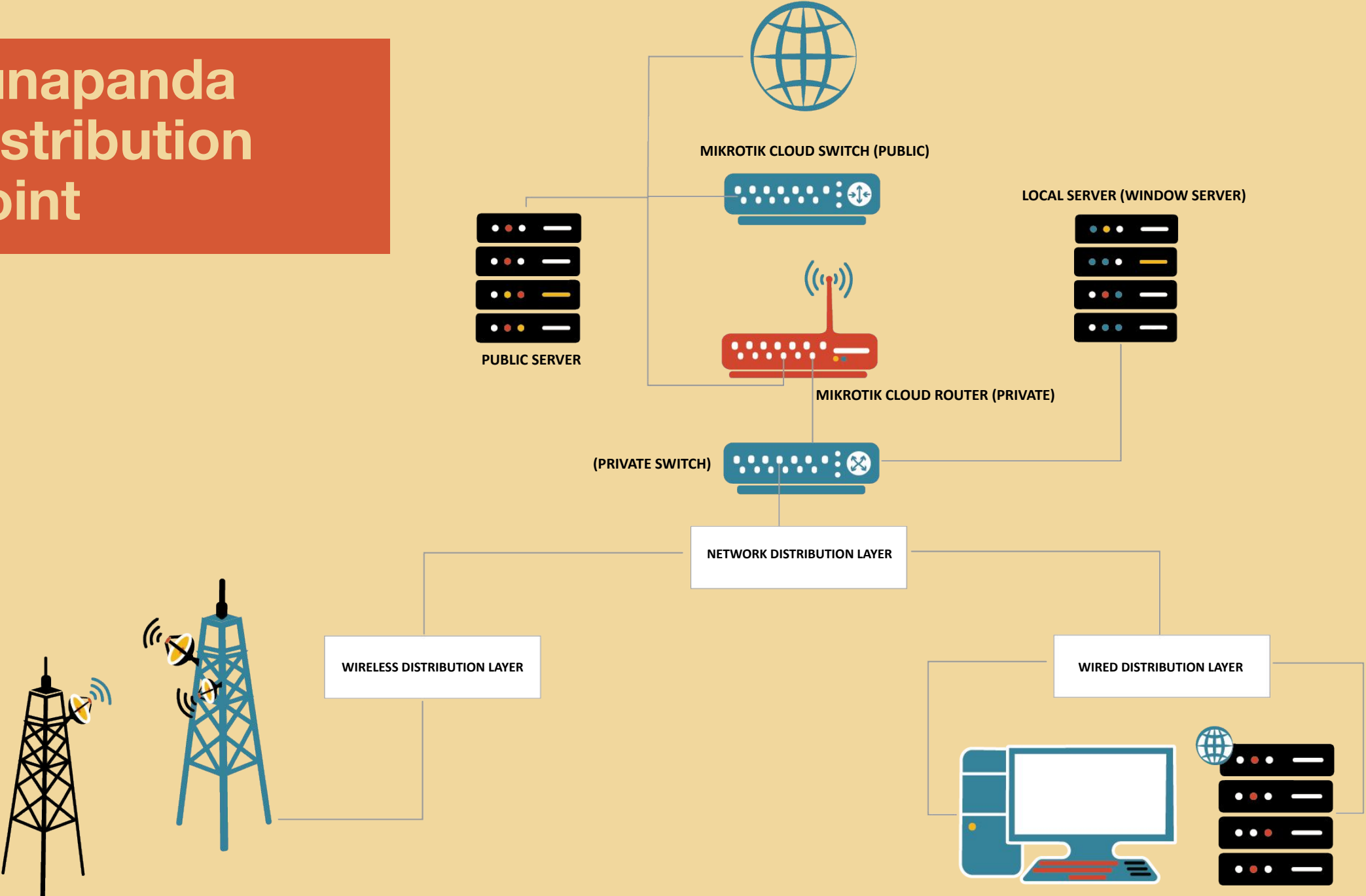
Barriers to Communication

Barrier 5: Distance

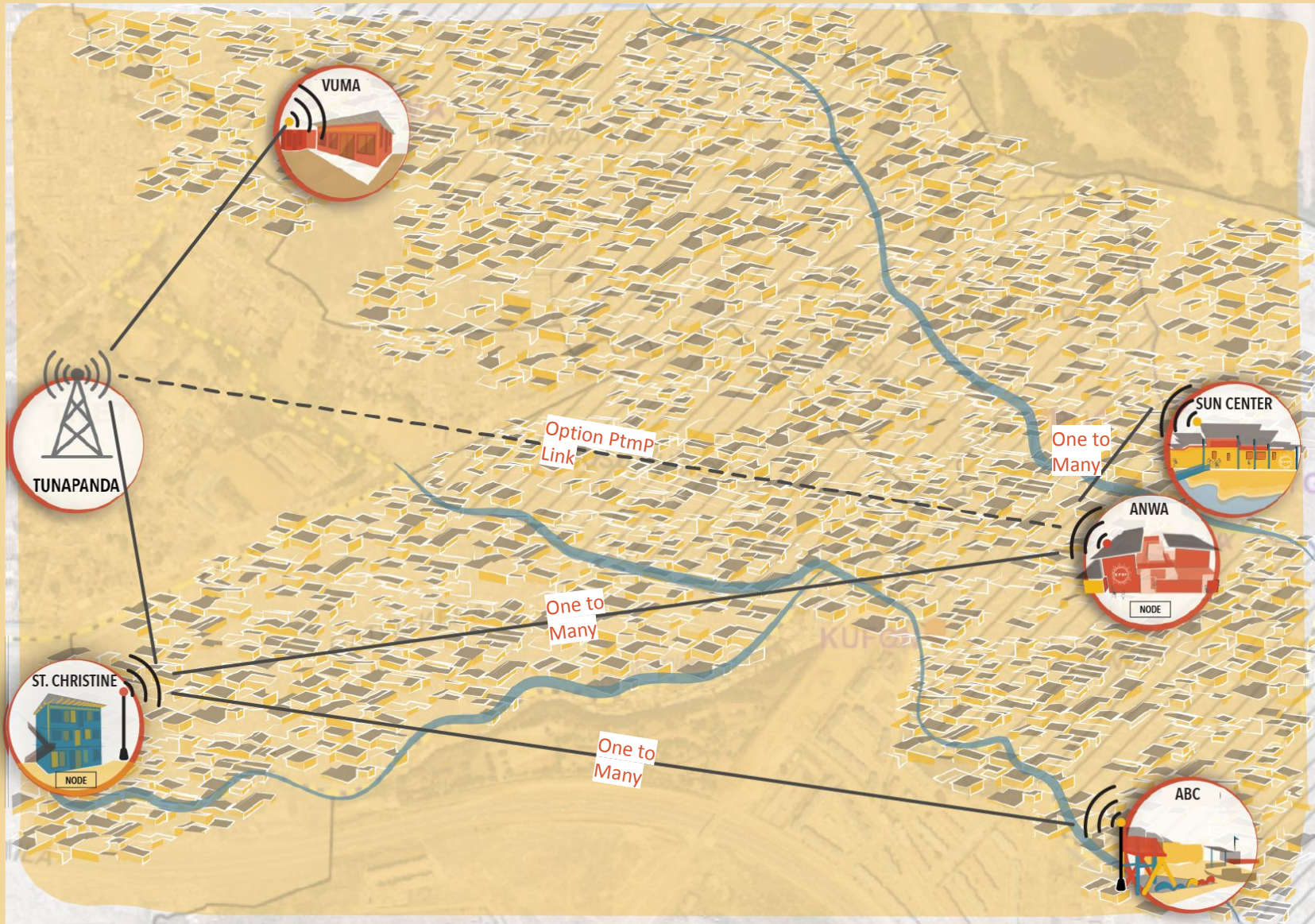


Devices usually can't communicate over very long distances. In order to allow devices to communicate over long distance, we need to give them better antennas!

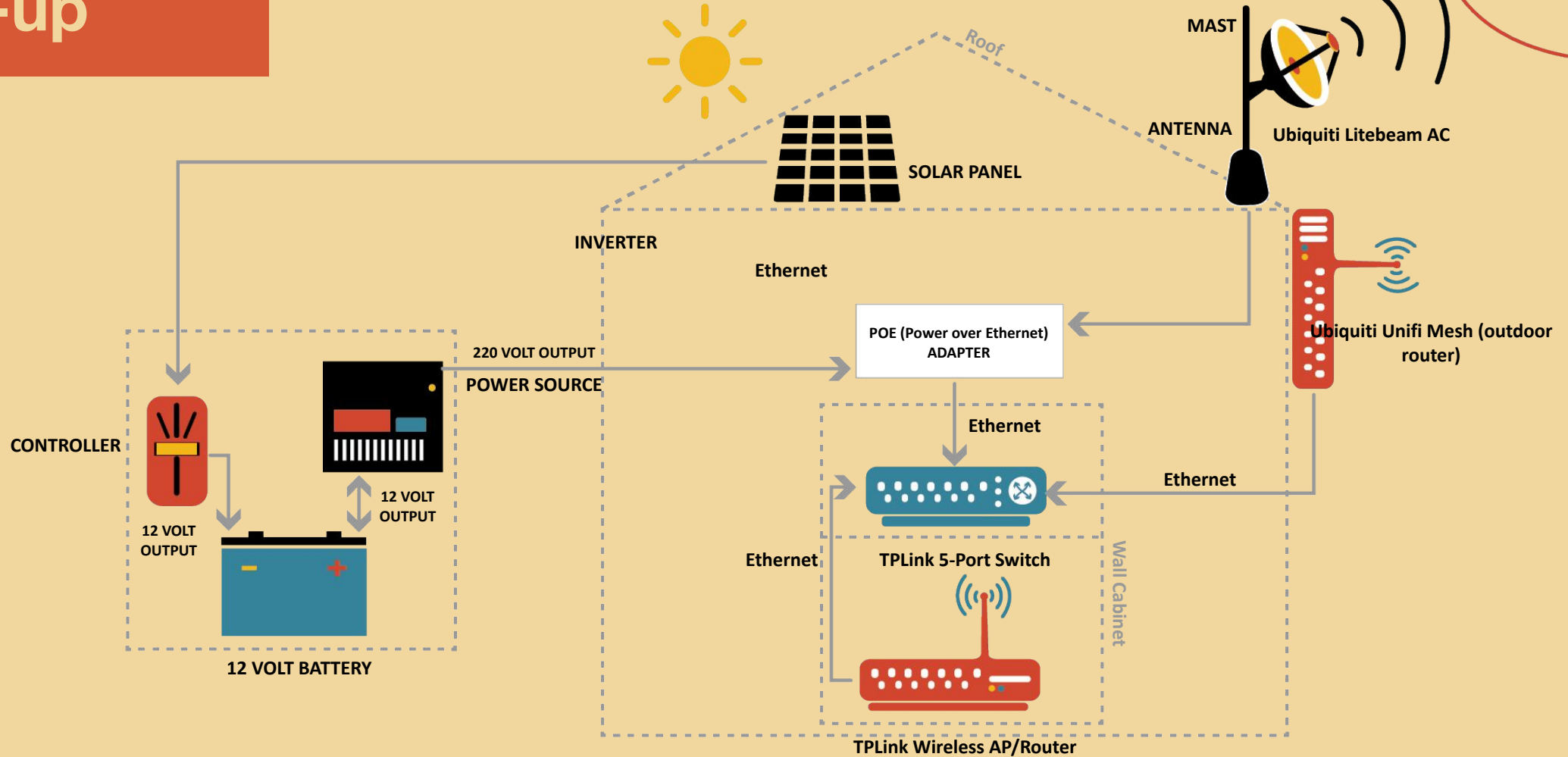
Tunapanda Distribution Point



KSPIN Wireless Distribution



VUMA Wireless Set-up

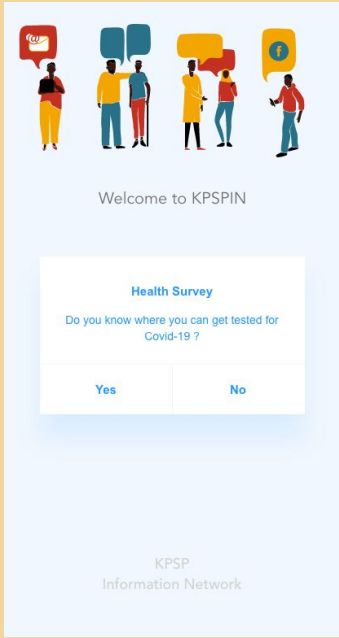












SURVEYS

**DATA
COMMUNICATIONS**

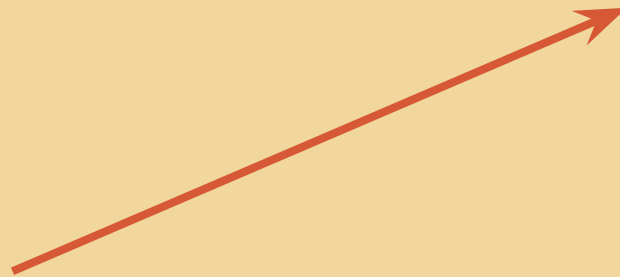
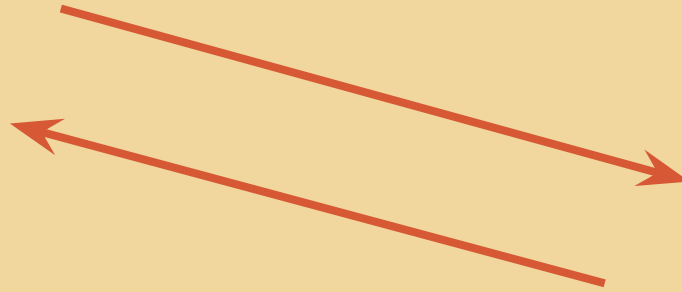


DATABASE



SENSORS

**YEAR 2 : BUILD DATA
INFRASTRUCTURE**



THE COMMUNITY DATA

SENSORS

- Can be easily attached to Wireless hotspots.
- Work with the many researcher who come to Kibera to test air quality.
- Can help CBO's get a return on the cost of the network by receiving funds for the maintenance of the sensors.

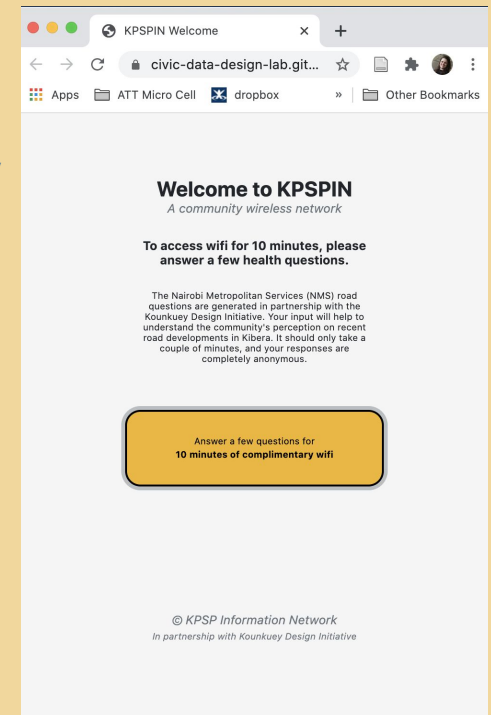
COMMUNITY OWNED



SURVEYS

- Take a survey in order to get 10 mins of free internet.
- survey can be about topical issues important to the CBOs or can be provided by outside research.
- Outside researchers would pay for the service which would help the CBO's recover costs.

COMMUNITY BUILT



COMMUNITY DATA MEETING #1

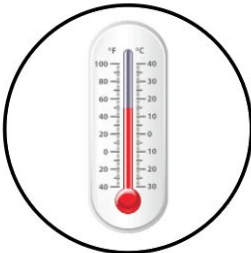
STEP 1:
COMMUNITY
DATA MEETING #1

What kind of information do we collect every day?

Spatial



Weather



Text



Financial



COMMUNITY DATA MEETING #2

STEP 3: COMMUNITY DATA MEETING #2

Data Information

What kind of information can we collect?

<ul style="list-style-type: none">- How the advertising business we are running as a group.- How to track our motorbikes and riders.- Cybercafé activities, charges and competitors- Educative information	<ul style="list-style-type: none">- Weather Updates- Soccer highlights- Educative information e.g. health, environment, sanitation- Update on political/religious activities.	<ul style="list-style-type: none">- Weather information- Flooding awareness- Environmental clean up- Medical camps and clinics- Sports in our community- Disasters in the area	<ul style="list-style-type: none">- Data on number of people passing near the school. (Helps us tighten security)- Data on pupils health/ Announced medical camps- Weather information- Disease outbreak in the community
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PILOT DATA SELECTED



COMMUNITY RESPONSE



HEALTH + WELLNESS



WEATHER + ENVIRONMENT

STEP 5:
DATA TOPIC
DECIDED



COMMUNITY RESPONSE

Respond to emergency needs in the community. Made a survey to response MNA road evictions.

Air Quality Sensors



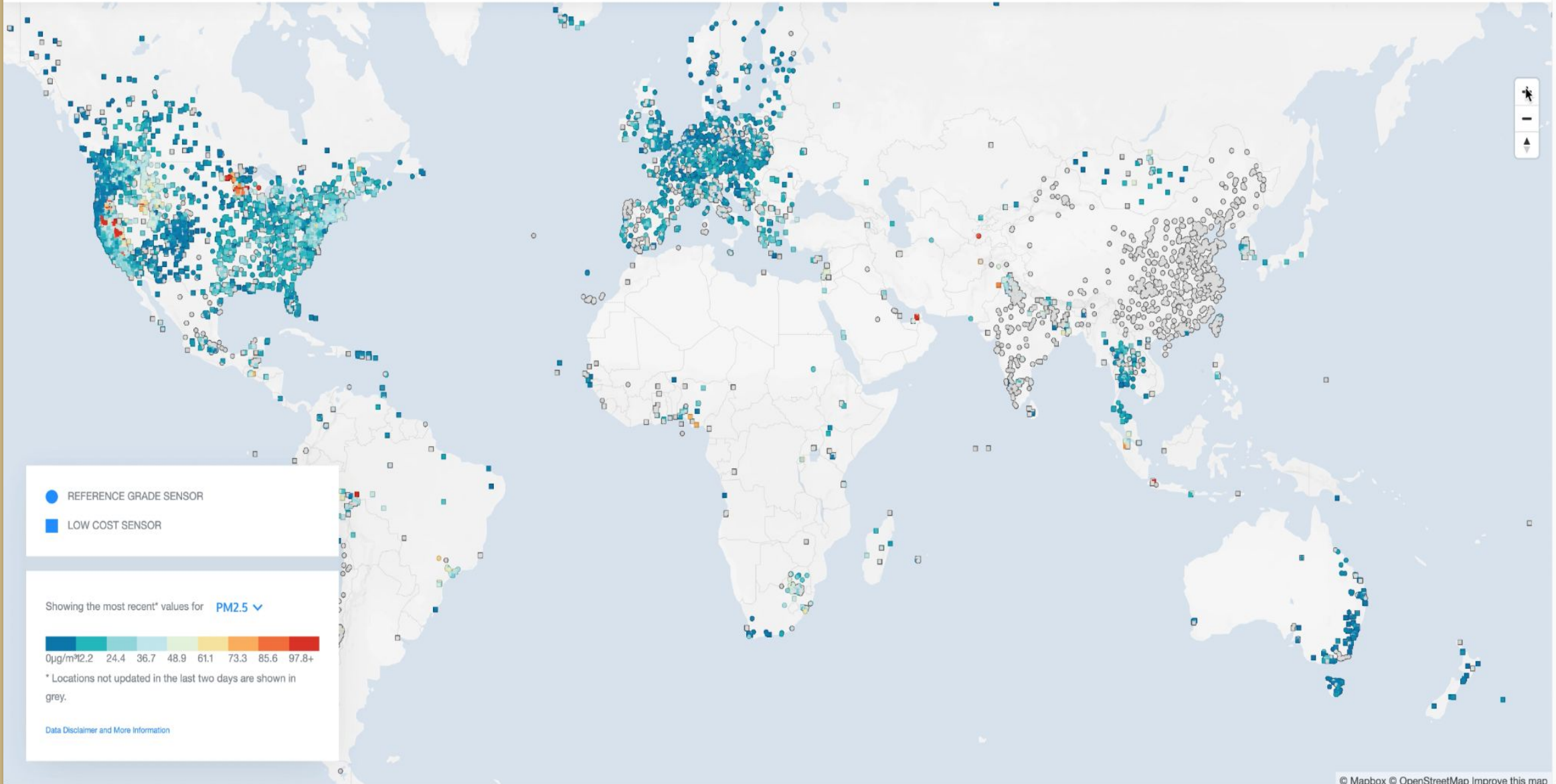
WEATHER + ENVIRONMENT

poor air quality is common in Kibera from cooking or the new roadway that passed through the center.


- Existing partnership with University of Birmingham.
- Part of the African Network of Air Quality Sensing.
- Air quality one of the most studied issues in Kibera.
- Most air quality sensors only last 3 months. This provides a way to have longer access to data.








ivic-data-design-lab.github.io



Today's Air Quality

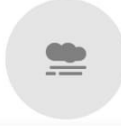
Moderate




good moderate severe

< >

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Daily Recommendation



Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.

< >

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Learn More About Air Quality

These advisories are based on a measurement called "AQI" or "Air Quality Index". This measurement is calculated based on the number of extremely small particles (particulate matter) in the air.

High levels of particulate matter have been shown to hurt human respiratory health. When the concentration of particulate matter is high outside, experts recommend staying indoors and limiting time spent outside.

< >



KPSP Information Network

A community wireless network

Log in to use the wifi service

Username

Password

CONNECT

Buy a Plan

Take a survey

Bdijournal.com



KPSP Information Network

A community wireless network

<< Login

Select a plan

hourly @ 20.00shs

daily @ 150.00shs

weekly @ 550.00shs

monthly @ 2000.00shs

test @ 1.00shs

Phone 0712345678

Take Survey



3→ What do you think about the NMS road developments?

A They bring development to my community.

B They will improve our living conditions.

C They will lead to increases in rent.

D They will lead to evictions/displacement ✓

E They will lead to the loss of my livelihood.

F I am not sure.

G Other

Submit



Powered by **Typeform**



Search for...



Versanet Admin



PUBLIC WIFI

Admin

Routers

Clients

Plans

Payments

Surveys

Generate Report

Subscription Plan Dashboard

Add Plan

Show

10



entries

Search:

S/N	Name	Amount	Period in (hrs)	Action
1	hourly	20.00	1	
2	daily	150.00	24	
3	weekly	550.00	0	
4	monthly	2000.00	0	
10	test	15.00	0	
S/N	Name	Amount	Period in (hrs)	Action

Showing 1 to 5 of 5 entries

Previous

1

Next

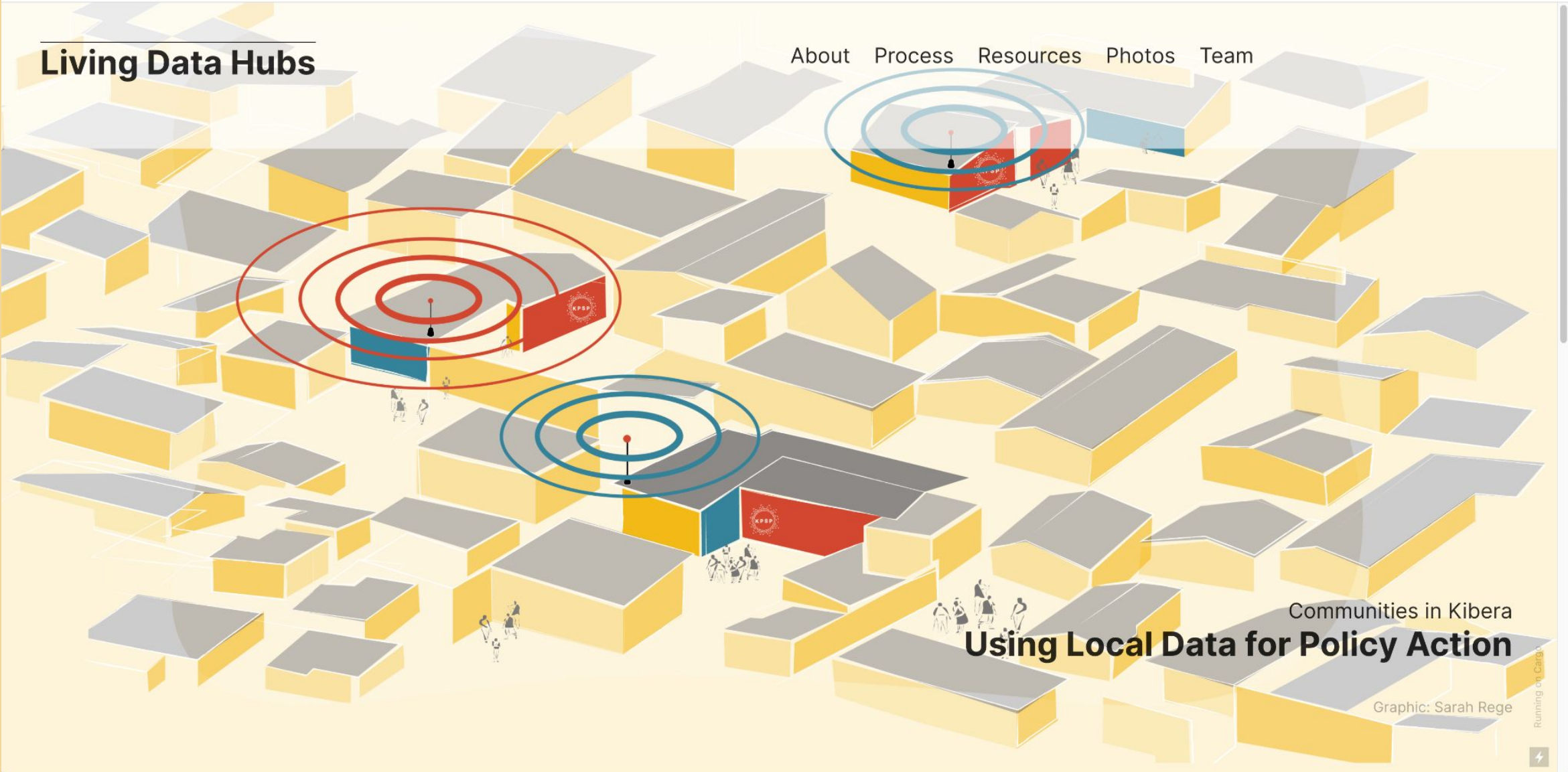
Interested in knowing more about KPSPIN or want to know more about our services!

Visit official site!



Living Data Hubs

About Process Resources Photos Team

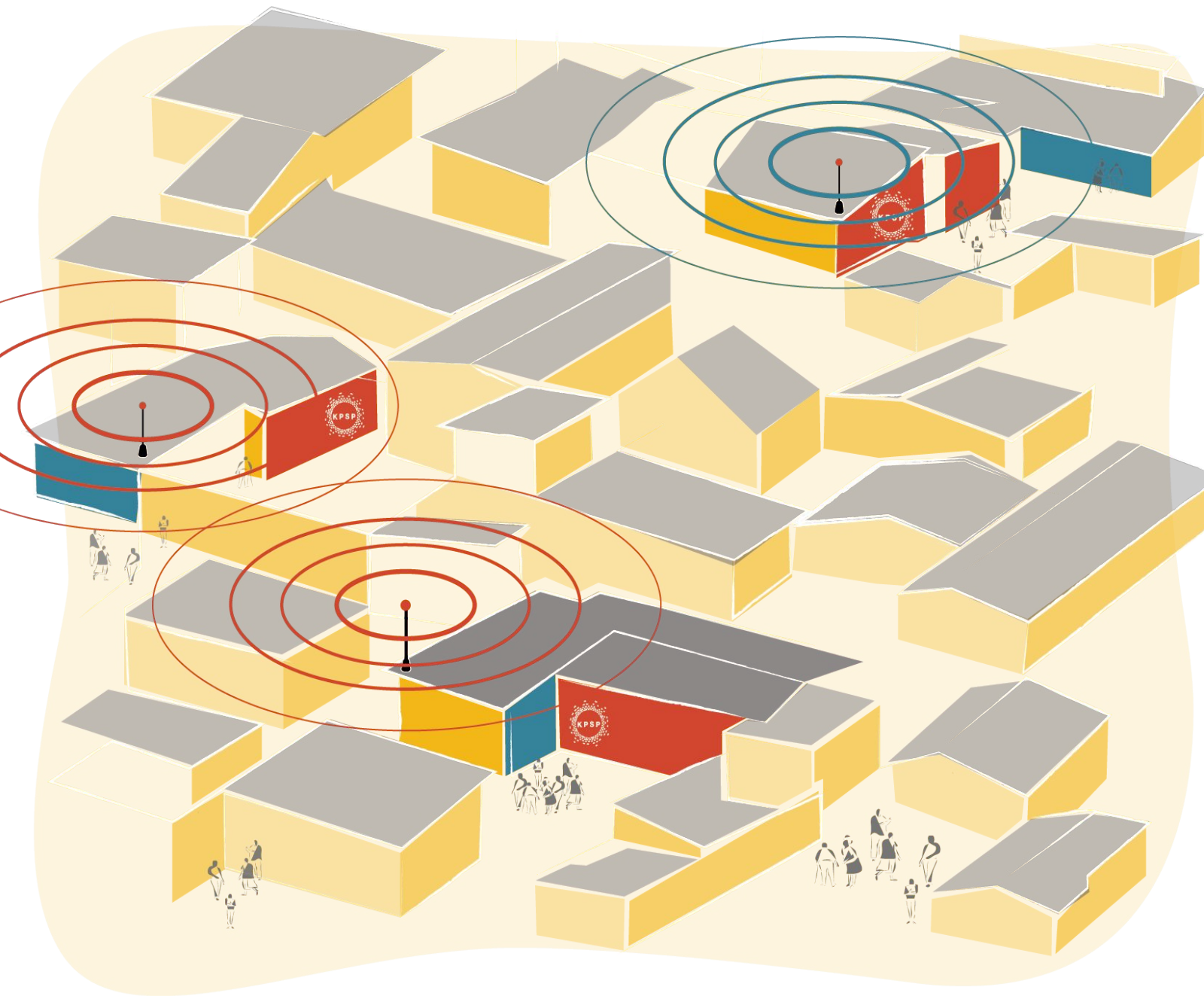


Communities in Kibera
Using Local Data for Policy Action

Graphic: Sarah Rege

Running on Cargo

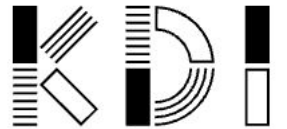




LIVING DATA HUBS

<https://livingdatahubs.cargo.site/>

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DATA LAB**



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EQUITY LAB**



Tunapanda