



Humanitarian  
OpenStreetMap  
Team



# Community Mapping for Refugees in Uganda

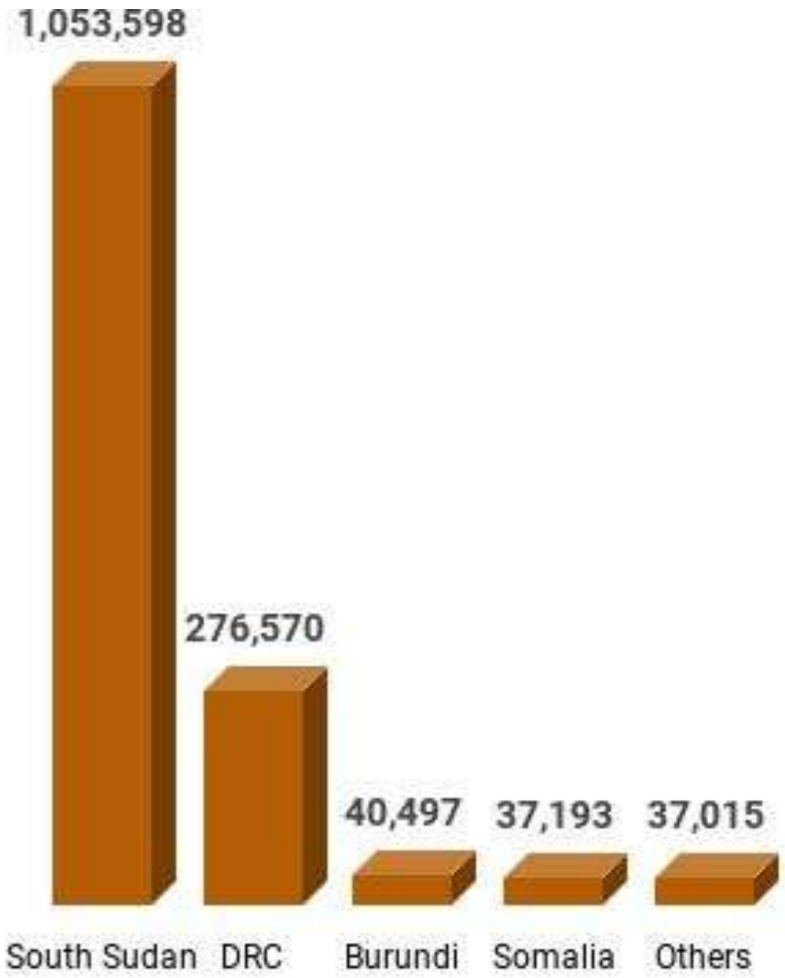
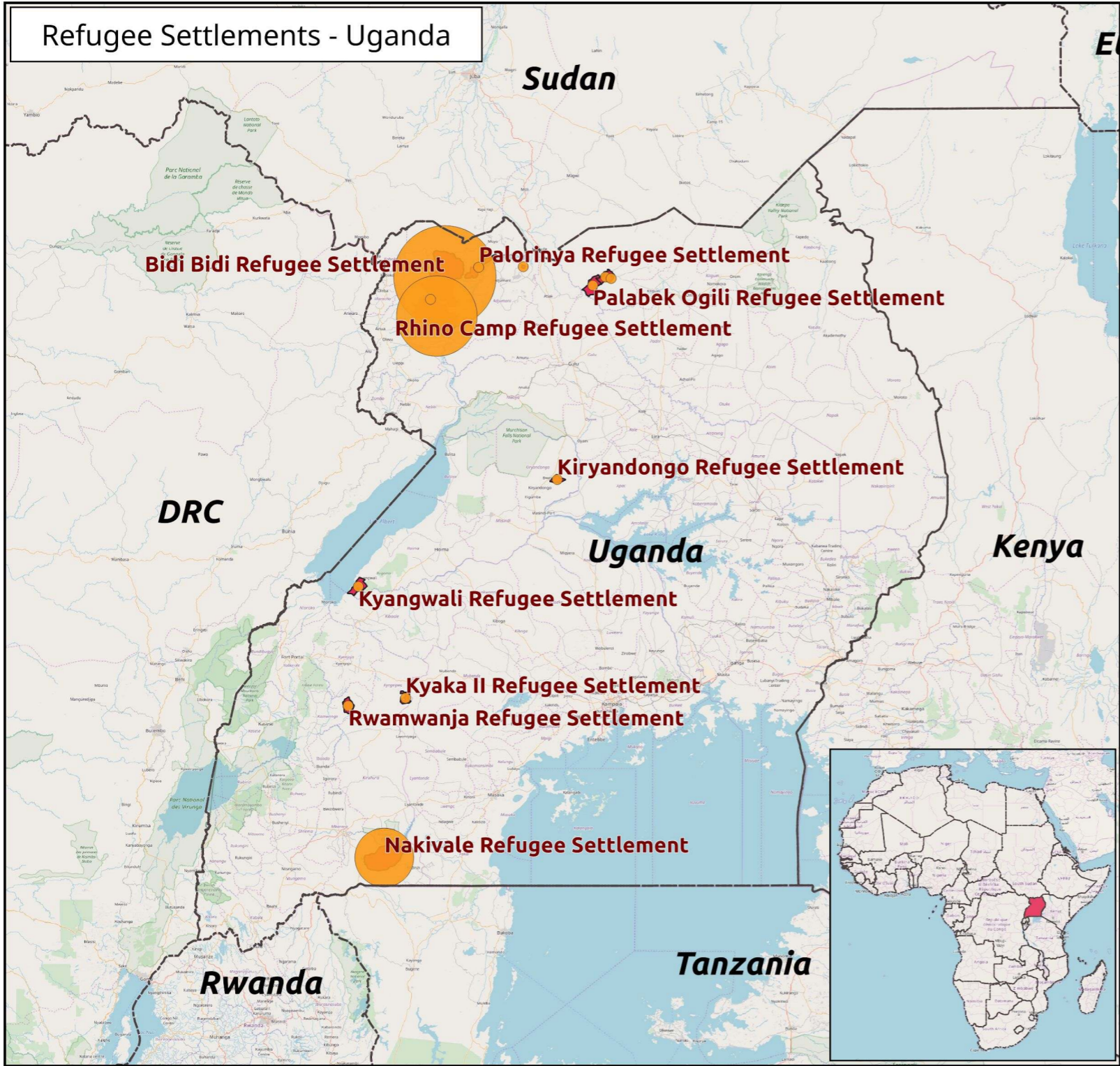
Geoffrey Kateregga  
@kateregga1



*Gift of the United States Government -  
Bureau of Population, Refugees, and  
Migration - US Department of State*



Uganda is renowned for its incredibly  
**progressive policy towards refugees,**  
one of the best in the world.



Uganda hosts an estimated 1.3 million refugees. It is Africa's largest refugee hosting country and one of the top five worldwide.



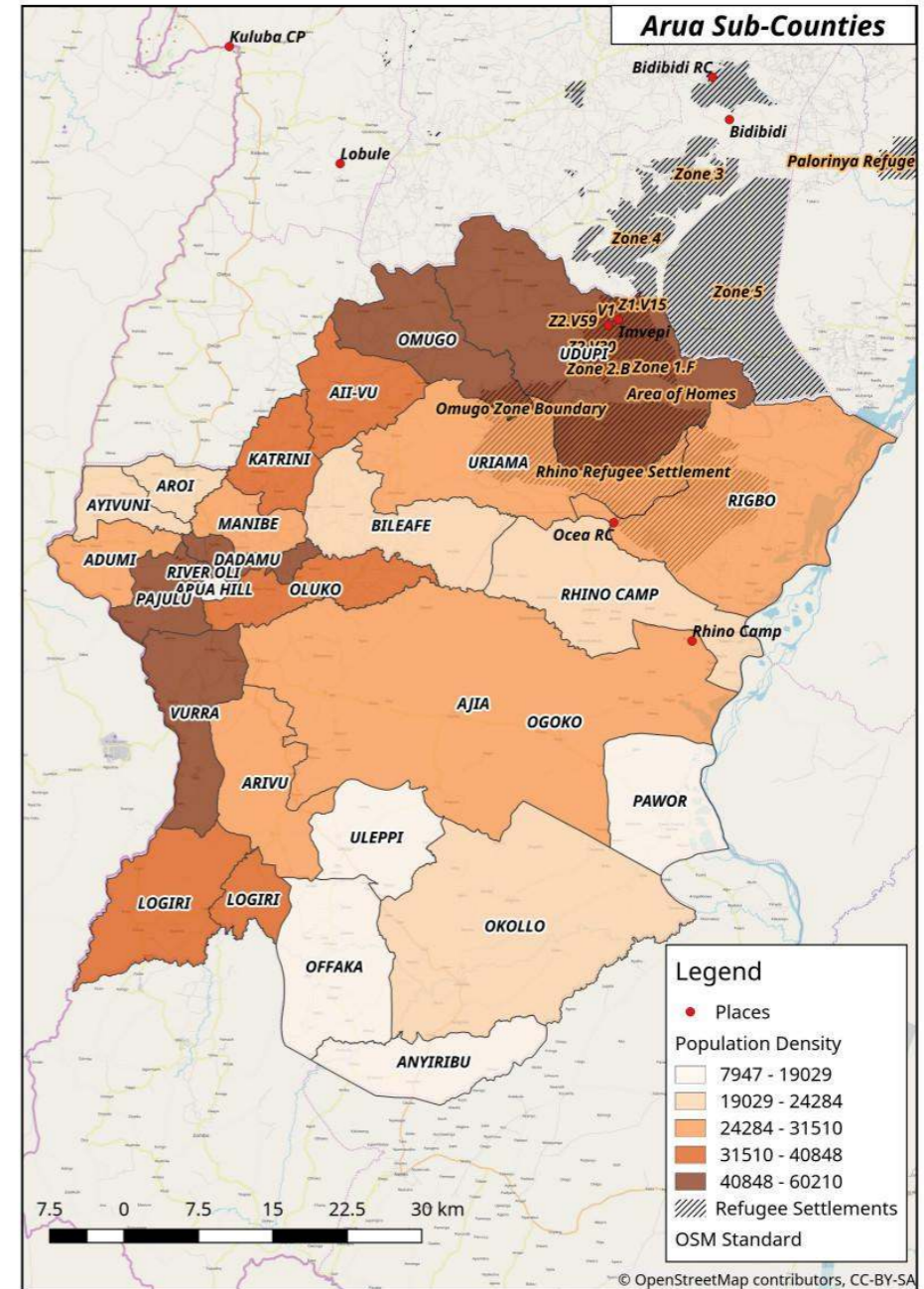
The profile of these refugees is characterised by a high proportion of **women** and **children** representing approximately **84%**



Refugees are entitled to **work**, have freedom of **movement**, and access to **social services** such as **health** and **education**



Uganda has the **world's youngest population** with over **78%** of its population **below the age of 30**. The median age is **15.9 years**.



Creating maps for refugees settlements and the hosting community



**MAPPING TASK : 4798**  
**DIFFICULTY: BEGINNER**  
**PRIORITY: HIGH**



**hotosm\_uganda** • Following

**hotosm\_uganda** OSM mappers, can you help please? New mapping task tracing buildings for the Water and Sanitation needs of the DRC refugee community in Uganda:  
[tasks.hotosm.org/project/4798](https://tasks.hotosm.org/project/4798)

An increase in violence in Eastern Congo (DRC) has led to repeated incidents of sudden exodus of the local population. The total number of new arrivals since 1st January 2018 is 48,105. Relief organisations are struggling to accommodate these large numbers of traumatised people and there have been cases of cholera among the displaced. In a rapidly developing situation such as this, it is vital that accurate and up-to-date



**calimapnerd, klain\_allans, esri\_portugal, firthy\_r, mohamed.f.najar and canunen** like this

JUNE 27

Add a comment...



**Remote Mapping precedes field mapping**





**Missing Maps Mapathon London, Mapping for Refugees in Uganda**

## Health Facilities

key	values
addr:district	name of district
addr:county	name of county
addr:subcounty	name of subcounty
addr:parish	name of parish
addr:village	name of village
addr:settlement	name of settlement
addr:place	name of village,zone
addr:point	name of point
addr:block	block number in the settlement
name	name of the facility
	doctors -> health centre I

## Water points

key	values
addr:district	name of district
addr:county	name of county
addr:subcounty	name of subcounty
addr:parish	name of parish
addr:village	name of village
addr:settlement	name of settlement
addr:zone	name of zone
addr:point	name of point
addr:block	block number in the settlement
start_date	date
amenity	drinking_water, water_point
name	name of water point
noname	if no name yes

## Water and Sanitation Hygiene (WASH) facilities

### Sanitation

key	values	sett
addr:district	name of district	both
addr:county	name of county	both
addr:subcounty	name of subcounty	both
addr:parish	name of parish	both
addr:village	name of village	both
addr:settlement	name of settlement	sett
addr:zone	name of zone	sett
addr:point	name of point	sett

## Education facilities [nodes]

key	values
addr:district	name of district
addr:county	name of county
addr:subcounty	name of subcounty
addr:parish	name of parish
addr:village	name of village
addr:settlement	name of settlement
addr:zone	name of zone
addr:point	name of point
addr:block	block number in the settlement
name	name of school
start_date	date
amenity	kindergarten, school, college, university, childcare
isced:level	0 Pre-primary education 1 Primary education 2 Lower secondary 3 Upper secondary education 4 Post-secondary n of tertiary education



Page Discussion

## Proposed features/Refugee Camp Boundaries


< Proposed features

### Refugee Camp Boundaries

**Status:** [Proposed \(under way\)](#)

**Proposed by:** [Kateregga1](#)

**Tagging:** `boundary=refugee_camp`

**Applies to:** 

**Definition:** Refugee camp/settlement boundary tagging

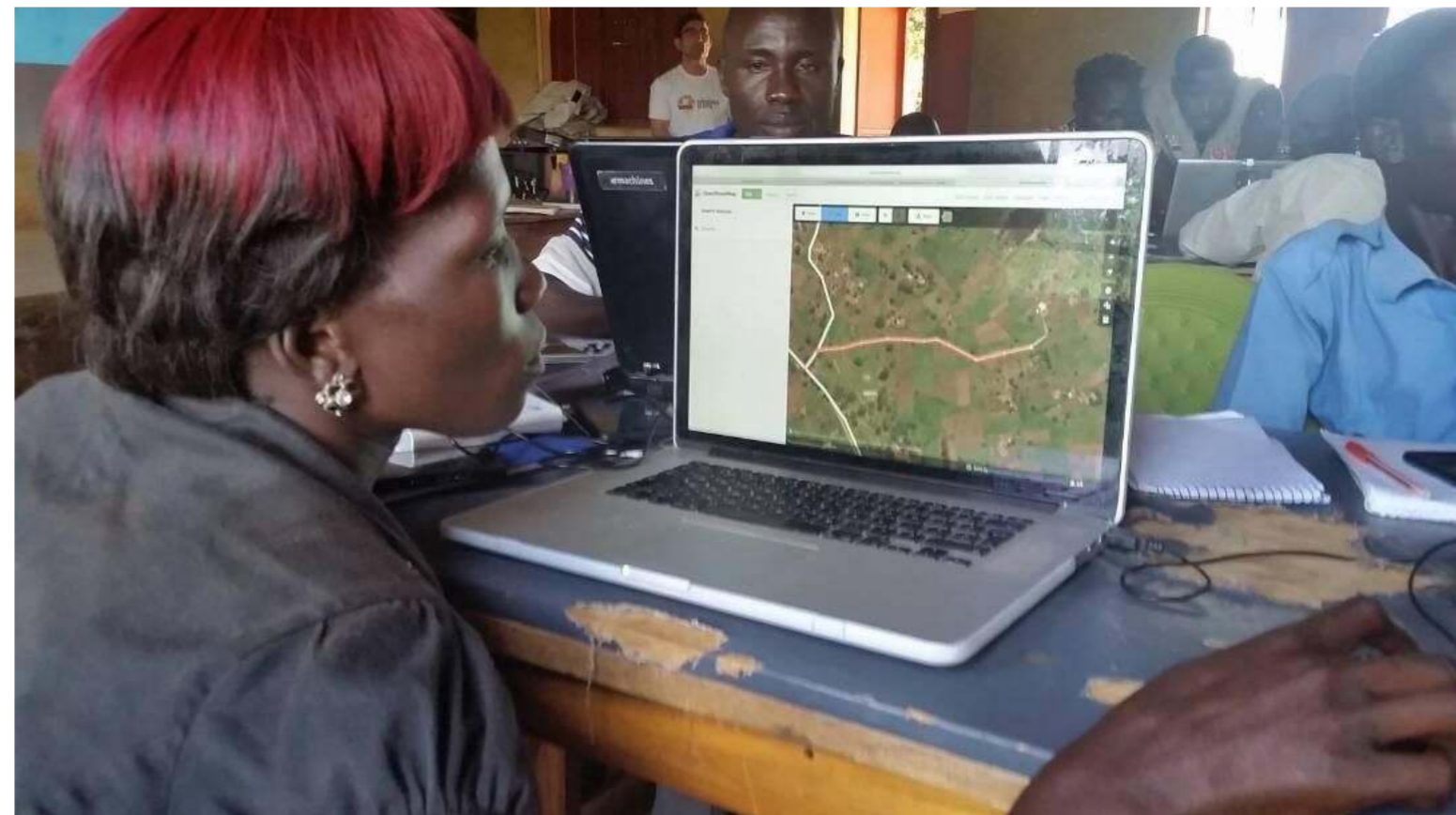
There is a need for a consistent **settlement/camp boundaries tagging system** to reflect the growing need for representing refugees and displaced persons on a map.



- **OSM** as the standard.
- Sharing as the Standard.
- Sensitive/Confidential data split at source.
- **Geographical Data Only on OSM.**



Sustaining Partner AND community Capacity by: Collaborative Base-Map Updating, through Public Engagement





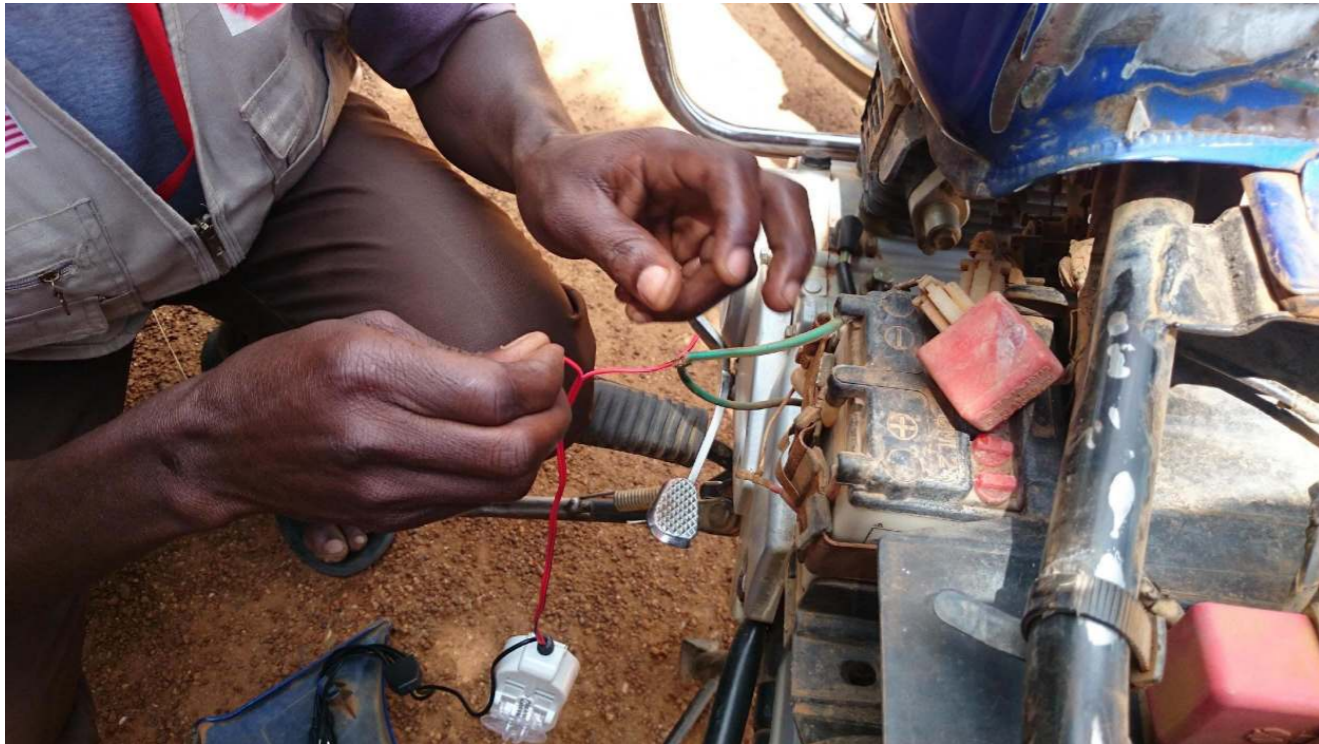
The shared map evolves, fed by multiple and continued data sources



**Combining local knowledge with mobile data collection tools**

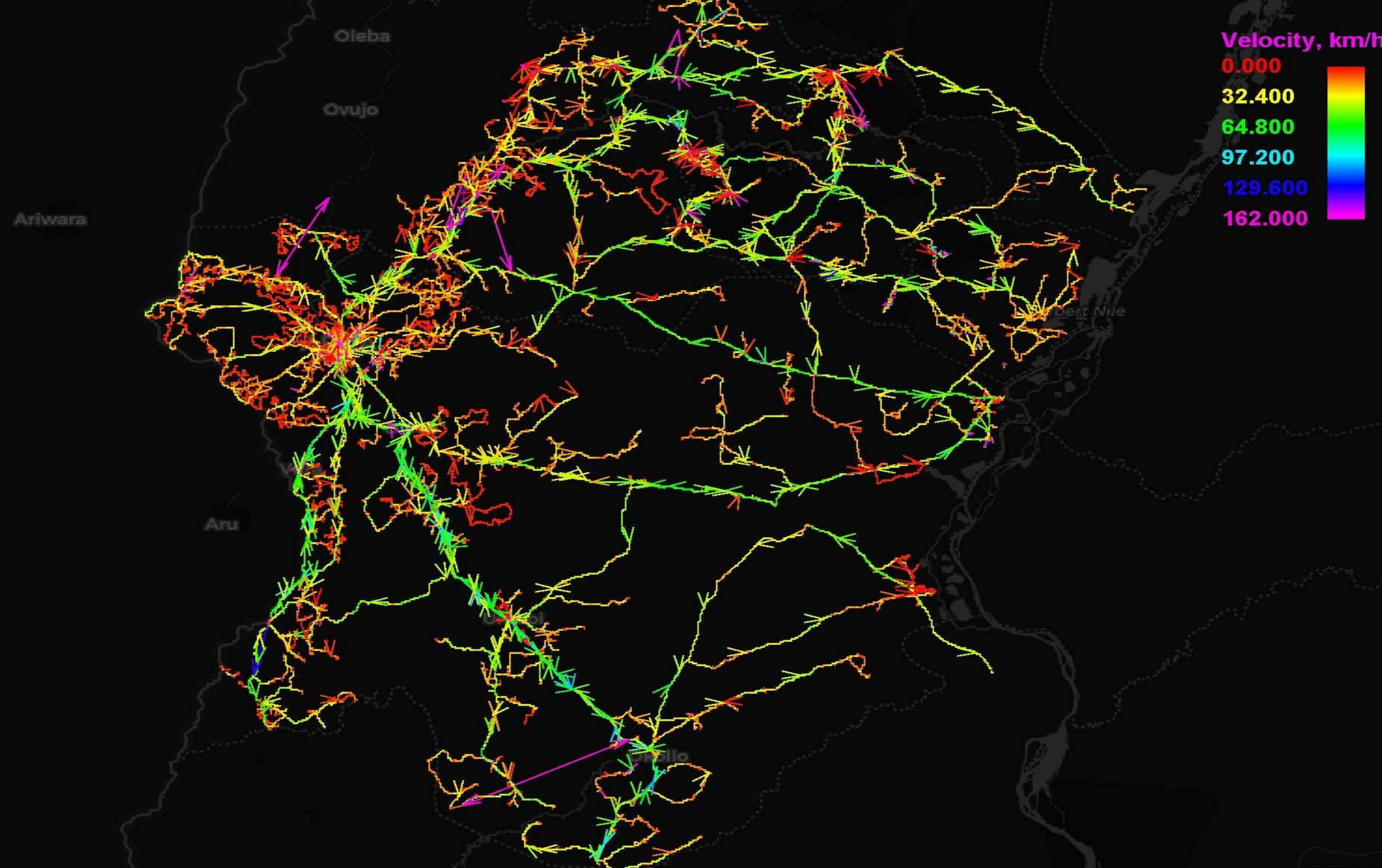


**Some places are hard to reach and require crossing rivers on a canoe with a motorbike**



**Improvisation to get the job done - Hacking phone charging**





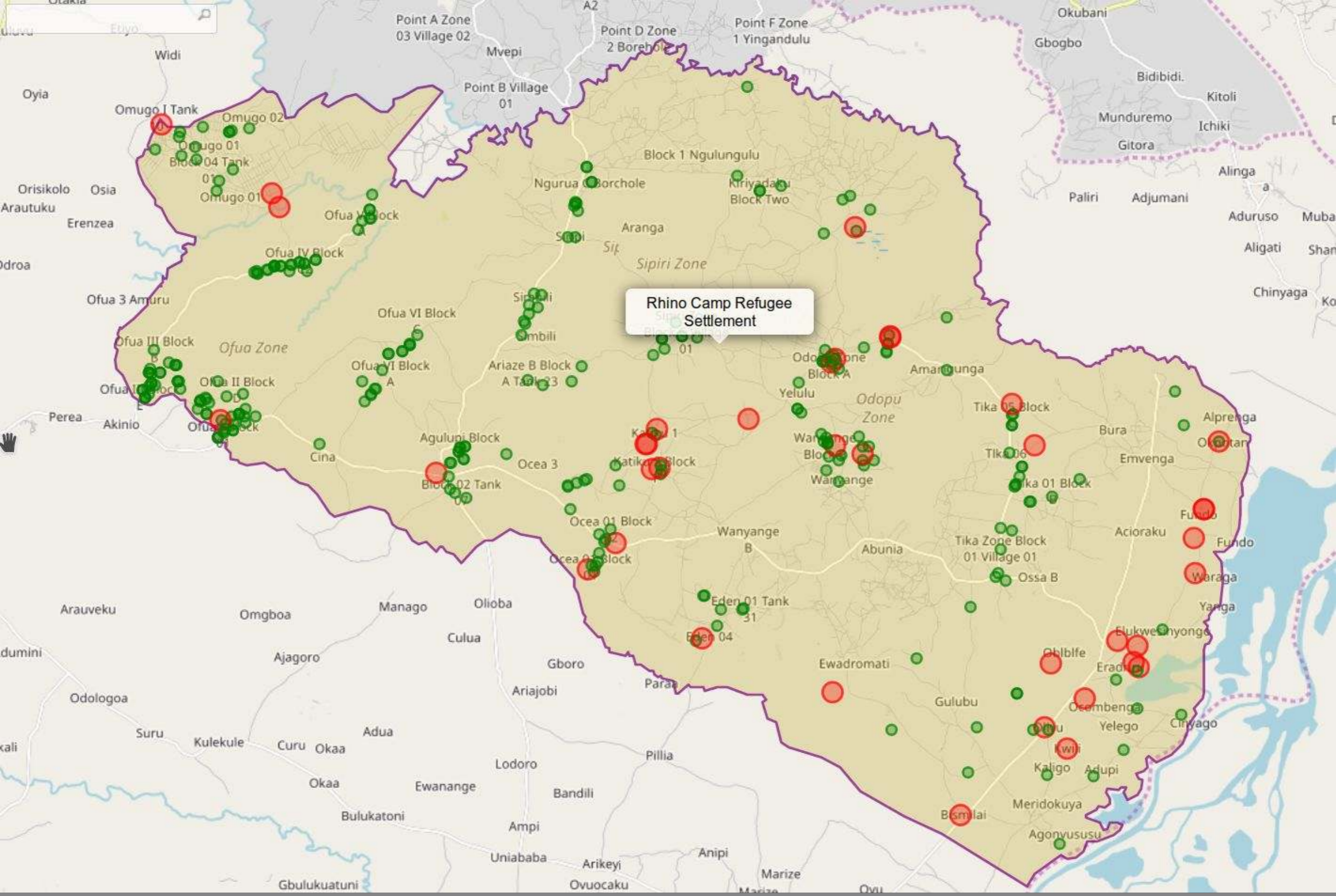
**GPX tracks used to improve the road network.**



**A water point in the hosting community vs a water point in the refugee settlement**



# Community Resilience - Refugees creating small business in the settlements

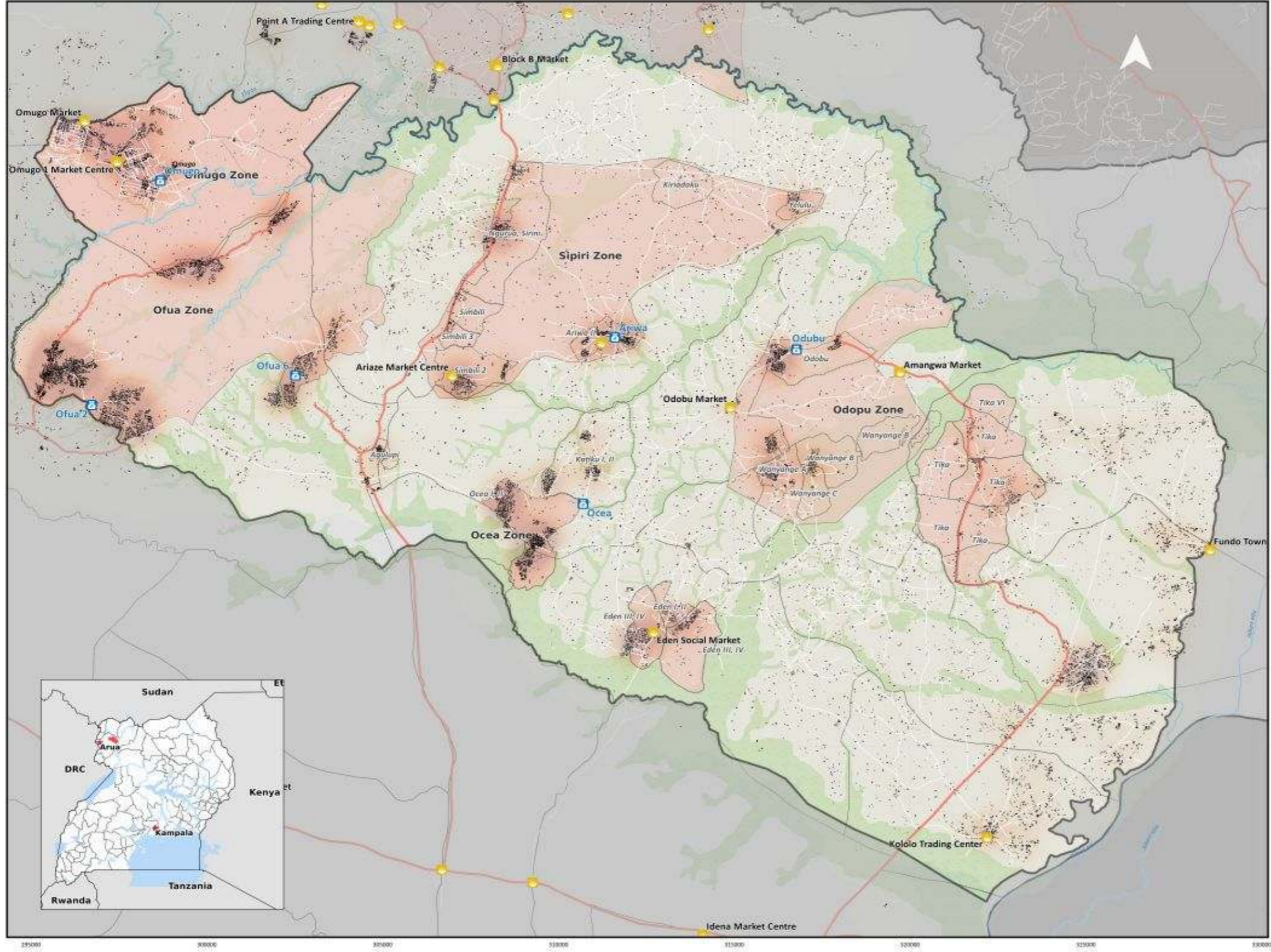


# Functional vs Non-Functional Water Points



DRAFT - For Humanitarian Purposes Only  
Production Date: 27 April 2018

# Food Distribution Points - Rhino Camp, Arua District, Uganda



- Legend**
- Villages
  - Food Distribution Points
  - Market Centres
  - Refugee Villages
  - Settlement
  - Swamps and Reserves
  - River
  - Stream
- Roads**
- Main road
  - Minor road
- Number of buildings**
- 0
  - 141
  - 283
  - 424
  - 566
- Boundaries**
- Zones
- Waterways**
- River
  - Stream

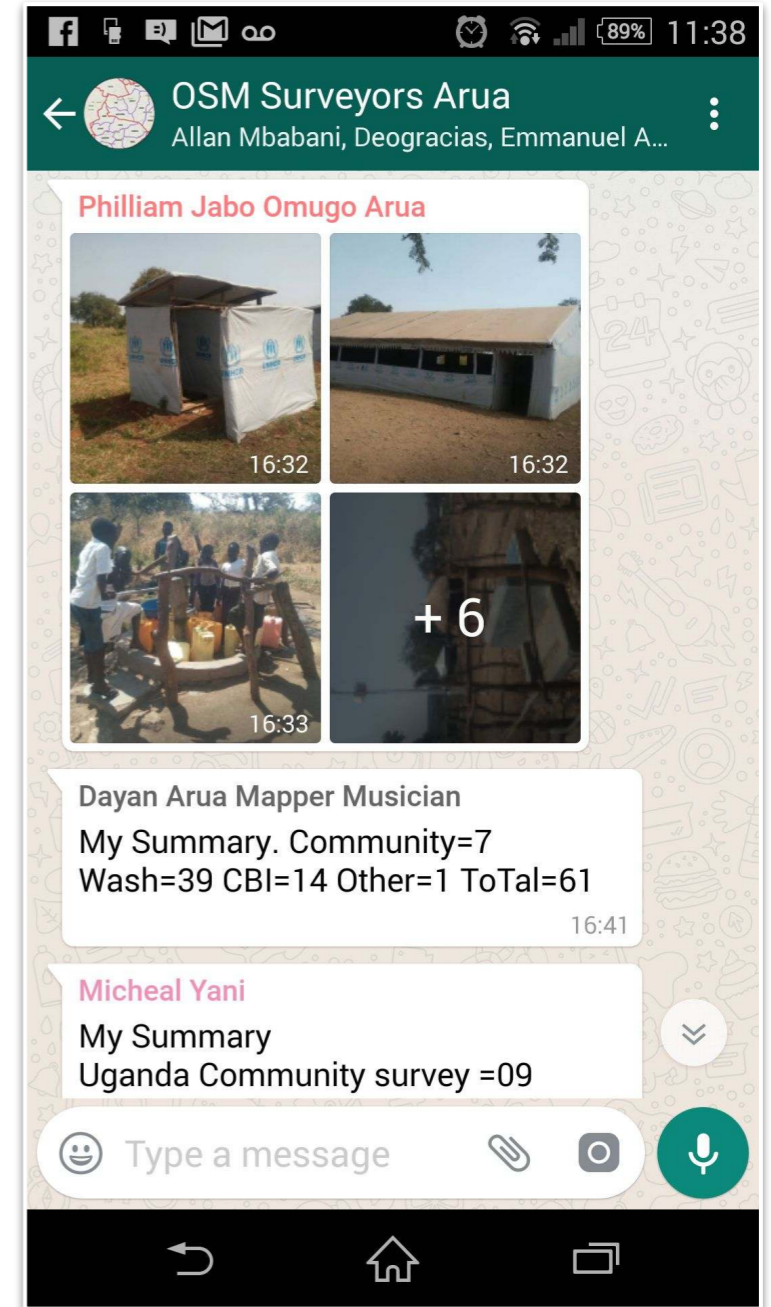
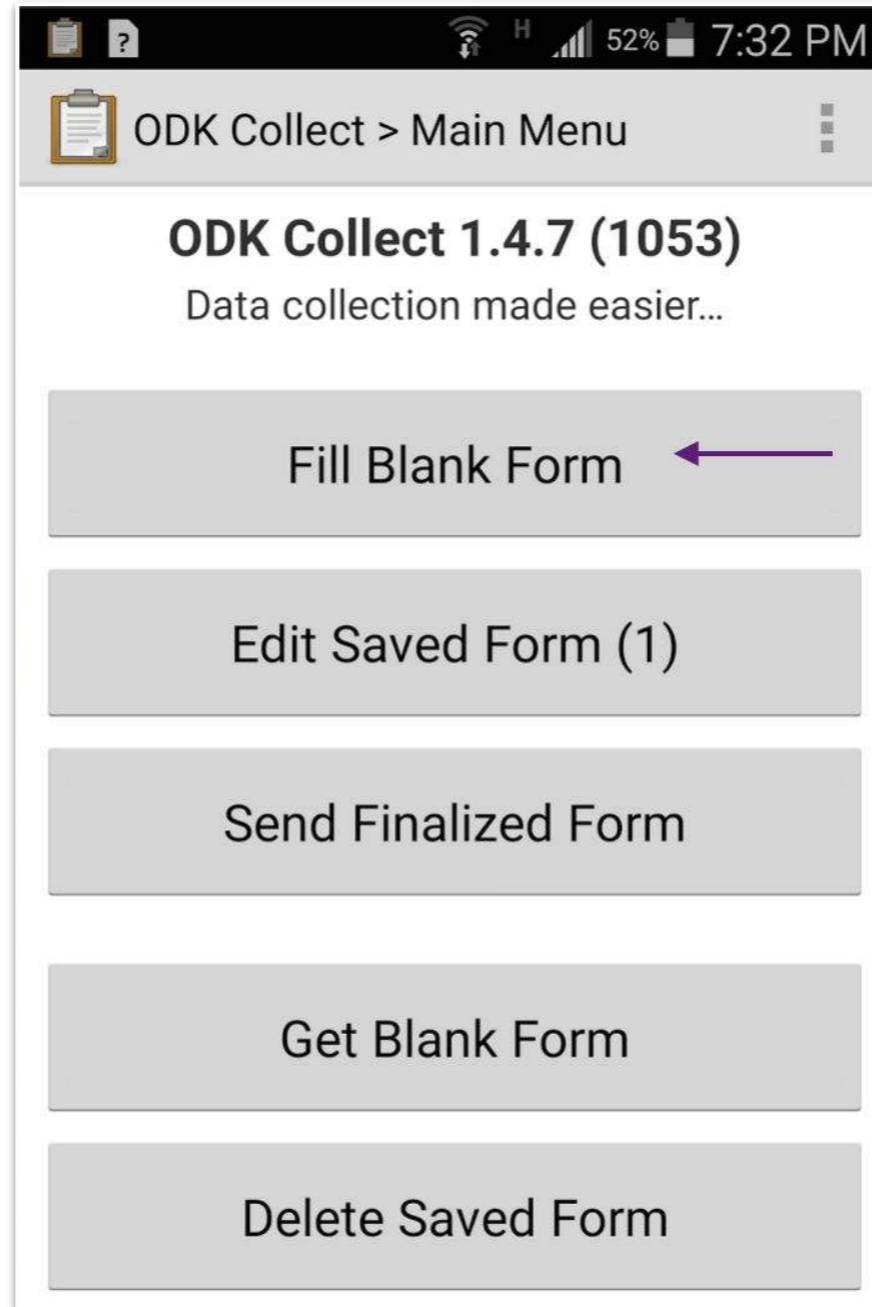
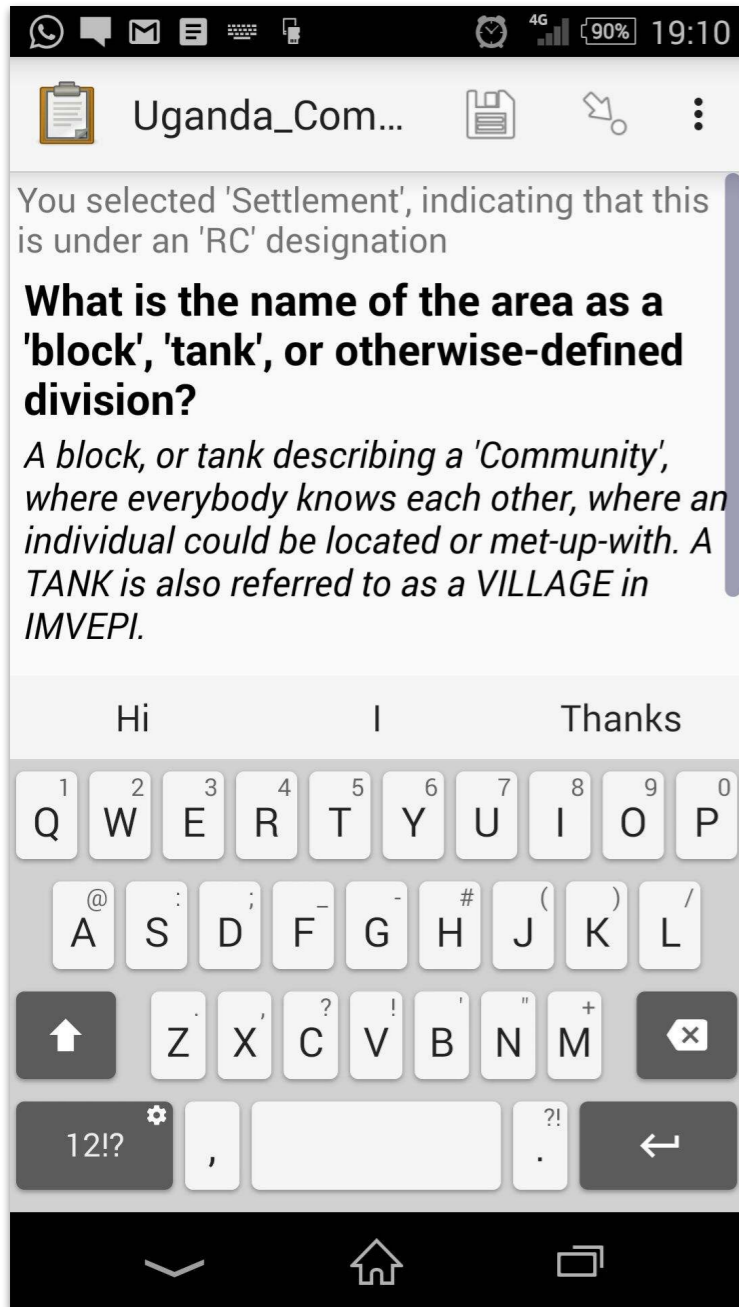


The "Crowdsourcing Non-Camp Refugee Data Through OpenStreetMap" project aims to improve program planning and service delivery to refugee communities, develop better integration with host communities, and build refugee self-reliance through open map data. The program trains and equips community leaders in refugee communities to map vulnerabilities and assets in the places they live, filling in key data gaps and "blank spots" on the map. These micro-level maps are created using techniques including crowdsourced data collection on mobile phones. The resulting multilingual maps and map data are then made openly available online in OpenStreetMap, on mobile phones for navigation, in printed form in refugee social/community centers, and provided to host country governments, PRAs, UNHCR, and NGOs.



**Data Sources**  
Boundaries: UBOS Census Data 2014  
Sources: OpenStreetMap Contributors, WFP, UNHCR, UBOS  
Projection/Date: UTM Zone 38N / WGS 84  
This depiction and use of boundaries, names and associated data shown here do not imply endorsement or acceptance by Humanitarian OpenStreetMap.  
Created: 27 April 2018  
Map design licensed CC-BY 4.0  
Produced by Humanitarian OpenStreetMap Team  
<http://www.hotosm.org>





**Using ODK for data collection and WhatsApp to share updates from the field**

Uganda\_Community\_Survey\_v10 | KoboToolbox - Mozilla Firefox

https://kobo.unhcr.org/#/forms/aS3TTXvuCPmFRx6p9mvmY3/data/me

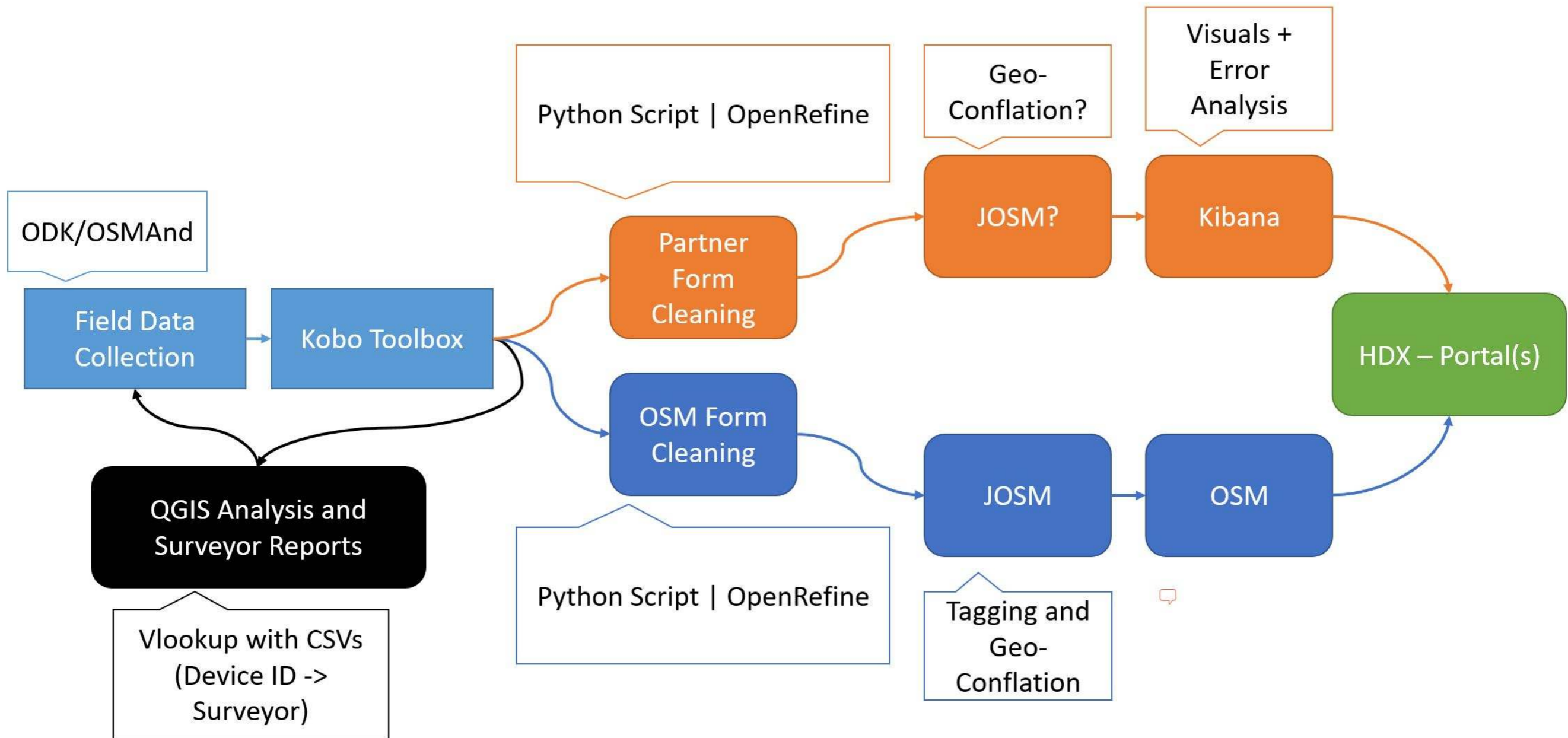
KoBoToolbox Uganda\_Community\_Survey\_v10 267 submissions

FORM DATA SETTINGS

Map

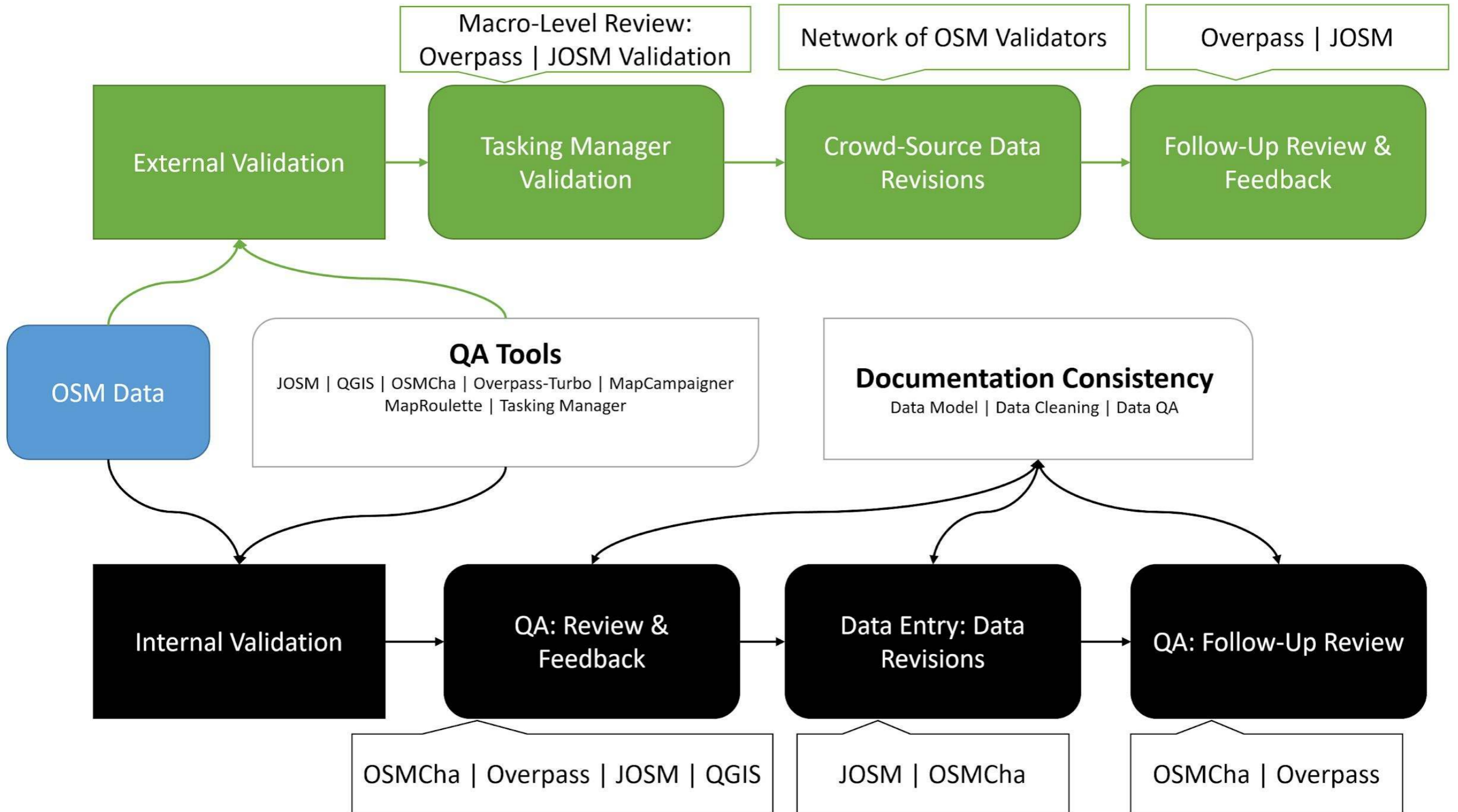
The screenshot displays the KoboToolbox web interface for a project named 'Uganda\_Community\_Survey\_v10'. The top navigation bar includes tabs for 'FORM', 'DATA', and 'SETTINGS'. The main content area shows a map of Uganda with numerous red circular data points clustered in the central region. A sidebar on the left lists various forms and projects, with 'Uganda\_Community\_S...' selected. The map area includes a 'View By' dropdown and a 'back to project' button. The bottom of the image features a large yellow text overlay.

**Using the Kobo server to aggregate data from the surveyors**

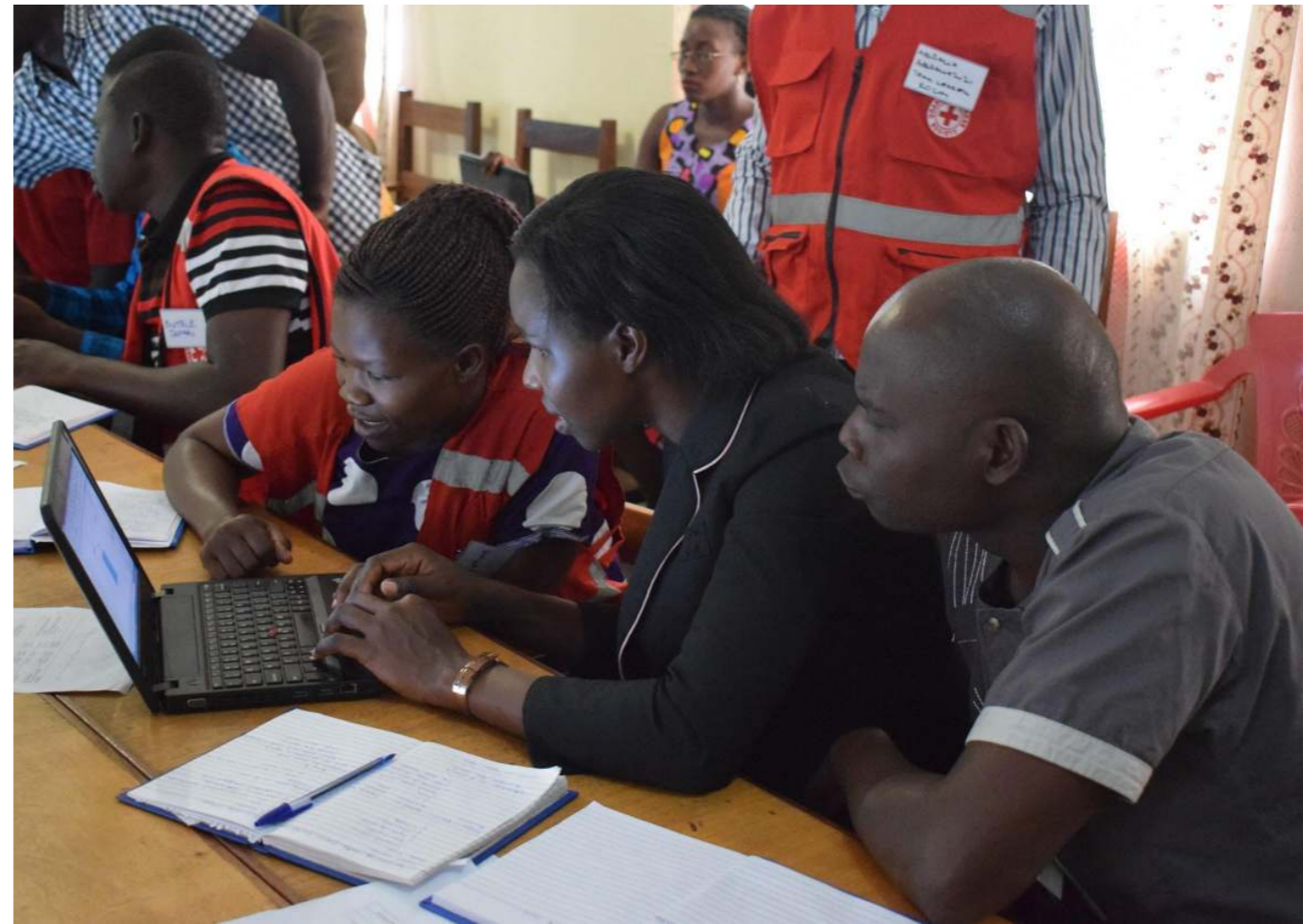


**Data cleaning pipeline, separating partner data from OSM data**

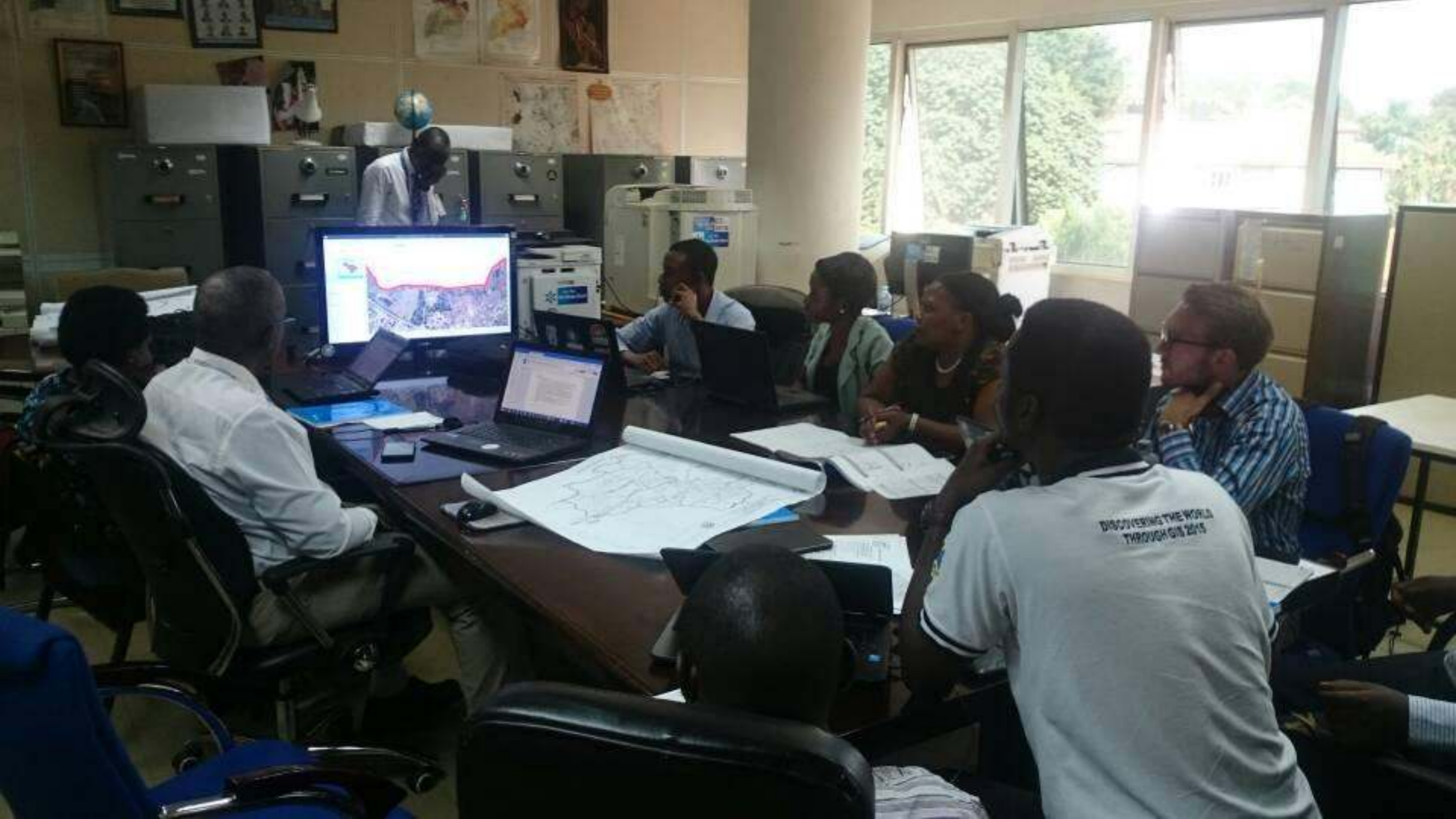




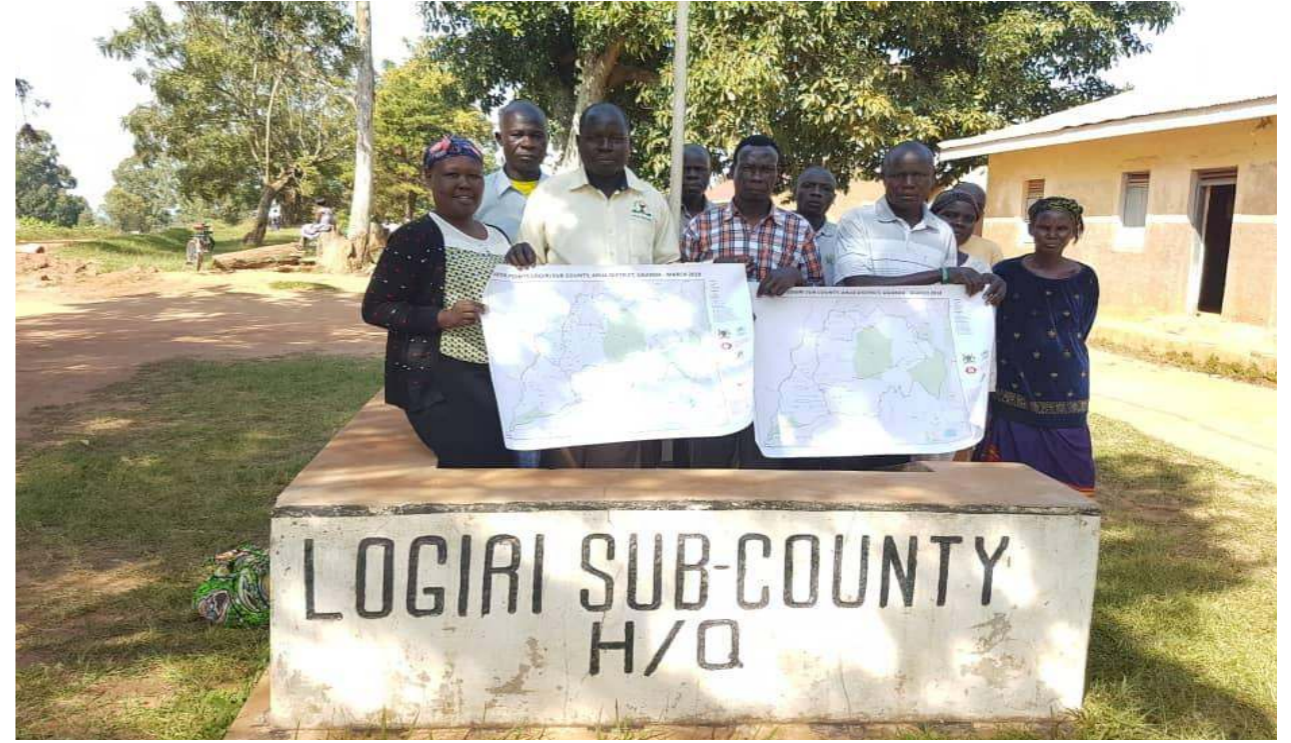
**Quality Assurance workflow, data quality is key!**



**Inter-agency coordination** - Government, NGO, and the community working together to share data on a common platform



**OpenStreetMap training for government agencies** - Disaster Department (OPM) Uganda Bureau of Statistics, Ministry of Lands, City Authorities



**Giving back to the community** - Sub County offices now have maps in their offices



# Creating the mappers of tomorrow - Taking OpenStreetMap to secondary schools



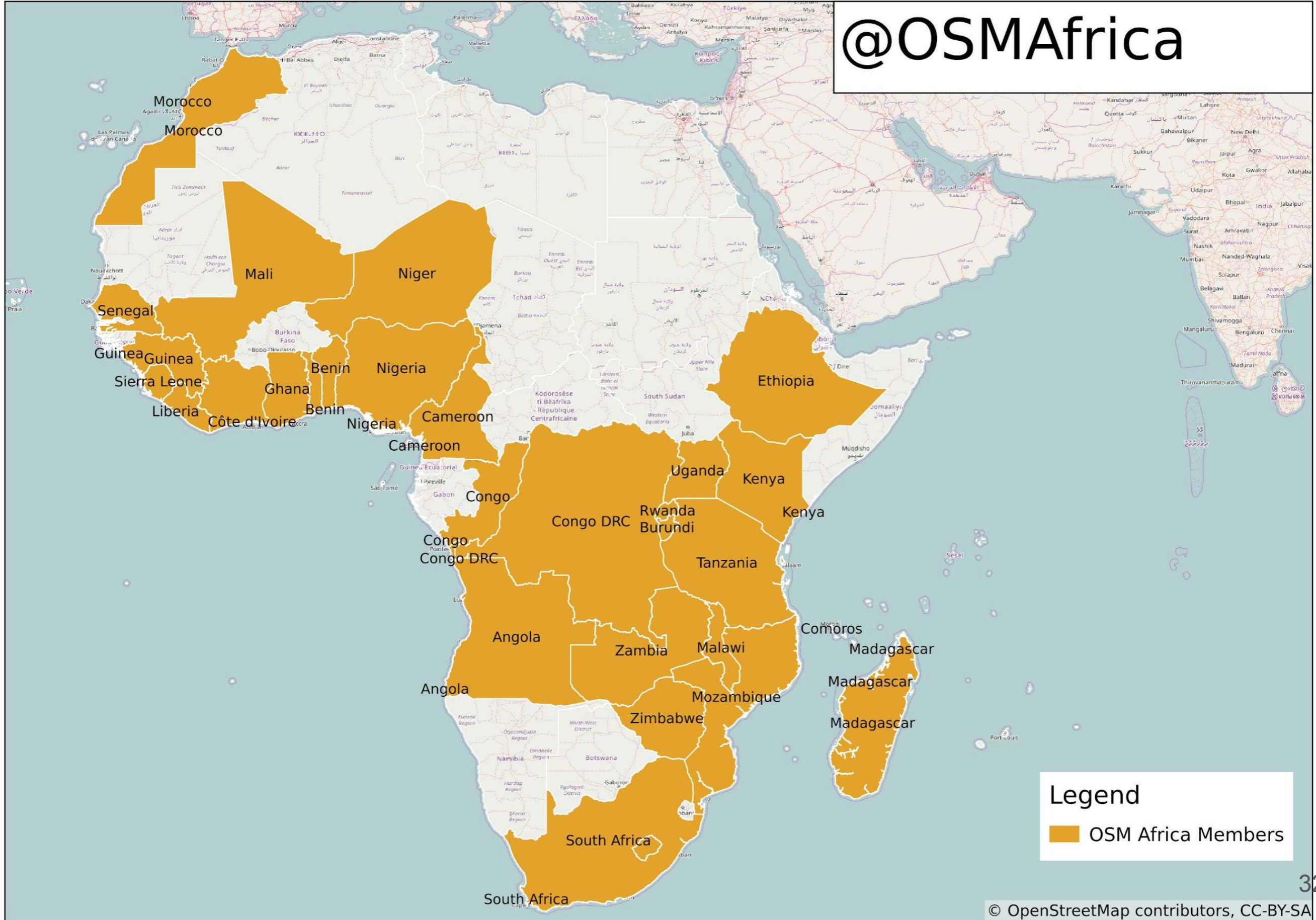
**HOT** is helping grow the vibrant **OSM**  
**Community** in Uganda.



**MapUganda is a registered NGO in Uganda,  
8 YouthMappers Chapters**



@OSMAfrica



**Legend**

OSM Africa Members



# State of the Map Africa 2017



**Coming back in 2019!**



- Creating Continental Collaboration on OpenStreetMap
- Grow OpenStreetMap Africa as a network of local OSM communities in Africa
- Showcase the possibilities of OpenStreetMap to organisations, government and businesses

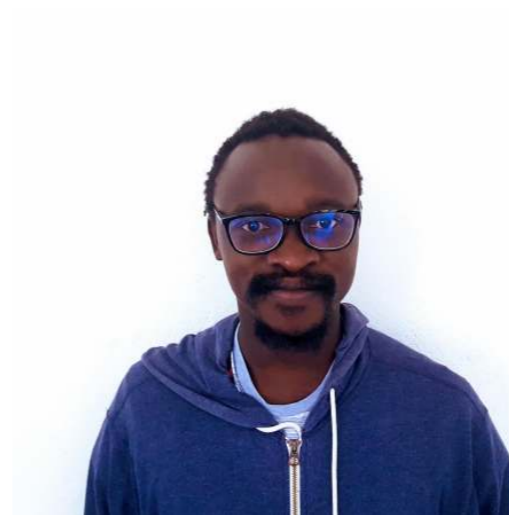
# OpenStreetMap Soccer



## Uganda Vs Rest of the World



# HOT Uganda Team





# Thank You!

Follow us

@hotsm\_uganda

@mapuganda

@osmafrica