Bridging Gaps in Development & Emergency Data Gaps for the Refugee Crisis in East Africa

Summary:

Uganda's progressive open-door policy has led to an influx of ~1.4 million refugees (as of Feb. 2020). High mobility of refugees means the distribution and size of refugee settlements change constantly and the need for standardized accessible information to make timely informed decisions about where services need to be planned and built becomes more crucial than ever.

Since 2015, the Humanitarian OpenStreetMap Team (HOT) has worked to address these challenges. Highly dynamic situations require creative approaches to capture population, infrastructure, and services data that must be kept updated and publicly available for use by other actors in order to be useful.

Thanks to funding in 2018-2019 from the Data Innovation Fund, through the use of open-source technology tools combined with a community-based methodology, HOT was able to address the critical data gap in these contexts by increasing real-time comprehensive data production on infrastructure and services where refugees and host communities reside.

To ensure that government and organizations involved in the refugee response know that, first, this data exists and, second, how to effectively use it, HOT worked extensively to support and train actors on how to systematically incorporate citizen-generated data into their programs to address and fill existing gaps.

At a Glance:

SDGs: 3 - Good Health & Well-Being, 4 - Quality Education, 6 - Clearwater & Sanitation, 10 - Reduced Inequalities, 11 - Sustainable Cities & Communities, 17 - Partnership For The Goals

Project Objective: 1) Improve coordination of services to the population, 2) Enhance coordination of resources from donors using community data and; 3) Improve refugee and host community relations.

Geography: Uganda

Technologies: Geospatial, Crowd-Sourced, Mobile (data collection).

Data Innovation:

All this data and information is available via the free OpenStreetMap database to the local and national governments, NGOs, and anyone else interested in using this data. Easy-to-use exports for a wide range of infrastructure and services are available via the Humanitarian Data Exchange in shapefile and GeoPackage format.

Engagement with the Uganda Bureau of Statistics (UBOS) represents a particularly important use case. UBOS staff received training on QField - a tool that enables demarcation of areas to support census activities - to a handful of data collection & visualization tools such as ODK, OMK, and QGIS. UBOS has specifically been learning these technology tools to support the planning, design, and implementation of the 2022 census.

Lessons Learned:
- To make data actionable and valuable to partners, it is crucial to understand the needs of the stakeholders. Dedicate time to understanding the beneficiary's interests, needs, and technical gaps before designing a training program for them.
- Experimenting with new approaches can be insightful and rewarding, but also time-consuming.
- Create mechanisms to gather feedback on how to improve the overall quality to inform the planning of the next training.
- Be cognizant of refugees and host communities and their role in identifying service gaps and issues. Most communities and local leaders want the results to be shared with them.
- Though it depends on the technical tool being taught (e.g., OpenDataKit (ODK) Collect, QGIS, etc.), training sessions are most effective when delivered over multiple engagements and most engaging when done in smaller cohorts.

Results:
This project enabled the addition of 1,500,000 buildings and 36,000 km of roads digitized using satellite imagery and more than 4,000 facilities and services mapped across refugee communities and hosting districts for the first time into open data sources. The base layer maps can be used to guide refugee crisis interventions.

Field activities spanned 52 sub-counties and 33 refugee zones and engaged more than 550 refugees and host community members.
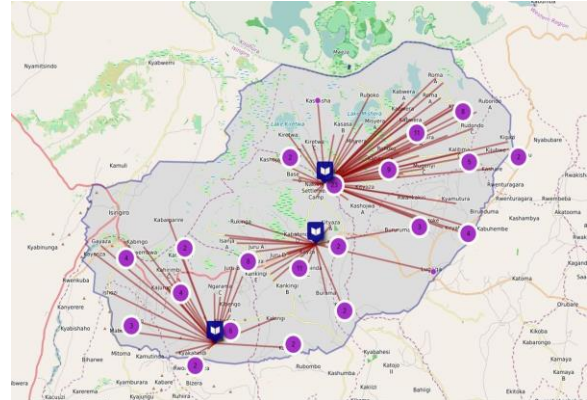
Through the training with more than 20 partners, beneficiaries learned to use and leverage the use and value of the (open) data generated through the field mapping activities.

Some specific results include:
- 98 paper-based maps produced and distributed - e.g., UNHCR data portal-Country - Uganda
- 40+ NGO and government organizations trained.
- 580+ refugees and host community members trained.
- 30+ organizations in the process of using or introducing OSM into their work.
- > 2,300,000 households on OSM
- > 36,000 km of roads mapped

References:
Humanitarian Data Exchange
Map Campaigner
GPSDD Documentation
Participatory Mapping Toolkit: A Guide For Refugee Contexts
HOTOSM Uganda (@hotosm_uganda)
Charting The Uncharted: The Volunteers Putting Unknown Villages On The Map
How Bidibidi, a refugee camp, is becoming a city