

Geo-enabled Digital Microplanning: Improving population estimates and ensuring access for improved campaign outcomes

WHO GIS Centre for Health

WHO GIS Centre overview





By connecting maps, apps, data and people, the WHO GIS Centre is dedicated to supporting countries to make informed public health decisions.

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Outline

- What is geo-enabled microplanning? (10 minutes)
- Burundi pilot case study (5 minutes)
- Geo-enabled mircroplanning handbook (3 minutes)

What is geo-enabled microplanning?

Geo-enabled microplanning involves the use of geospatial data and technologies, including geographic information systems (GIS), to support the planning and monitoring of service delivery at the local level of health facility and health district.

Using spatial data on the location of populations, health resources and the surrounding environment in a GIS environment, digital microplanning can ensure all populations are accounted for, identify gaps in population equitable access to care, and optimize planning for outreach activities to ensure equitability and reach of services.

Geospatial data components



Population estimation and spatial distribution

In geo-enabled microplanning, population estimation is the use of statistical models, remote sensing datasets and sampled census information to create spatially accurate and precise estimates of population density and distribution.

Population estimates are used to create population denominators for the community to be served.



Settlement and Remote sensing data

Statistical models

Geographic Accessibility Modelling

Geographic accessibility, service location and route optimization modelling are advanced modelling approaches used to identify possible gaps or overlaps in service coverage. Models analyze whether the target populations fall within an agreed-upon travel time or distance threshold for reaching such services or identify the most optimal routes to deliver essential commodities (e.g., insecticide treated nets).



Mogadishu, Somalia microplan

Mapping of district field assistants (DFA) and team areas

The main objective is to spatially map the operation boundaries of DFAs and later team areas.

- To confirm the excel based microplans.
- Rationalize and validate the workload of team areas.
- Account for the growth of population and IDPs in microplanning.
- Populations movement pattern.



Mapping of district field assistants (DFA) and team areas

Initial Workshop

- 23 District Polio officers
- 1 Regional Polio officer
- 2 Data managers
- 1 Supplemental immunization activity focal point
- 7 DFAs

Decentralised Workshop

23 district polio officers running parallel, working with their team of DFAs to demarcate and validate their microplans.

Finalization Workshop

Final workshop for consolidation of the team areas into the database











Satellite imagery showing rapid growth of the settlements all over Mogadishu

2016







Outcome of the workshop: DFA areas mapped spatially



Map highlighting DFA areas having a greater number of building points than expected



Map highlighting DFA areas having IDPs settlements



Burundi pilot Geo-enabled microplanning for AMP LLIN campaign

We provided guidance on setting up the engagement and developing the project concept:

- Fundraising
- Pilot proposal
- Partnerships

Purpose

 Develop capacity and demonstrate how GIS microplanning can improve upon the traditional hand-drawn maps



Human Resources





Microplanning district workshop & validation

Activity	Location Attendees	Objectives	Deliverable / outcome	All Mentales in presented in a research of Google II. Are IT managers 51. To head to the research of Sarahar and t
Microplanning field workshops in 2 health districts to demonstrate the GIS microplanning process and develop capacity in Burundi Micro planning field workshop in 2 districts	 2 high priority health districts Bujumbura Mairie Zone Sud: 5 areas of responsibility; 29 participants (13 F; 16 M) Bujumbura Rural Kabezi: 19 areas of responsibility; 33 participants (10 F; 23 M) GIS, data person at each of the 2 Districts 	Visualize and improve distribution point locations Digitize supervisor and team boundaries	 Validation of supervisor and distribution team boundaries Supervisors from both districts mark boundaries on map GIS Officers digitize the marked boundaries GIS officers align the boundaries to remove gaps and overlaps Print relevant maps for each distribution site and their demarcated areas 	

GIS Microplanning workshop outputs

- A polygon border was drawn for each distribution point's catchment area (yellow)
- 2. A circle is drawn around distribution points to compare walking distance to catchment area.
- Households within that polygon are counted, to be verified when distribution teams visit.
- 4. Distribution locations can be optimized based on this accessibility analysis
- 5. Campaign resources can be assigned based on this catchment analysis.
- 6. Maps for each distribution area will be printed for use by campaign field teams



Preliminary results

Successes:

- High engagement
- Participants believe GIS population estimate was more accurate than local registration
- Interest in scaling this nationally.
- Helpful analysis:
- Marie de Sud needs to add distribution sites
- Kabezi sites verified that less than 3km travel is needed for most areas

Challenges:

- Need paper printed maps to start for people not familiar with online maps
- Borders or areas of interest were not agreed between the two health districts.
- Need more time or more expert facilitators. Only a few participants are ready to train others.
- Technical teams from LLIN campaign did not attend workshop

Geo-enabled Microplanning Handbook



- This handbook will enable the reader to plan, implement, and sustain a digital microplanning program.
- Handbook builds on existing guidance by adding more detailed specifics on how to plan for and implement *Digital Microplans*
- Much of the handbook content comes from already published sources, bolstered with writing produced by selected technical experts.
- Sponsored by WHO-UNICEF GIS Working Group Core Partners

Thank you!