



Humanitarian
OpenStreetMap
Team

Community Mapping For Flood Resilience

Dar es Salaam, Tanzania



- Dar Ramani Huria
- OpenStreetMap
- What is it used for?
- How it Works (technically)
- How People Map
- The Data (what comes out)
- Community

Dar Ramani Huria

Seasonal floods in Dar Es Salaam have enormous costs for the city in terms of lives, livelihoods, health, transportation, and infrastructure.

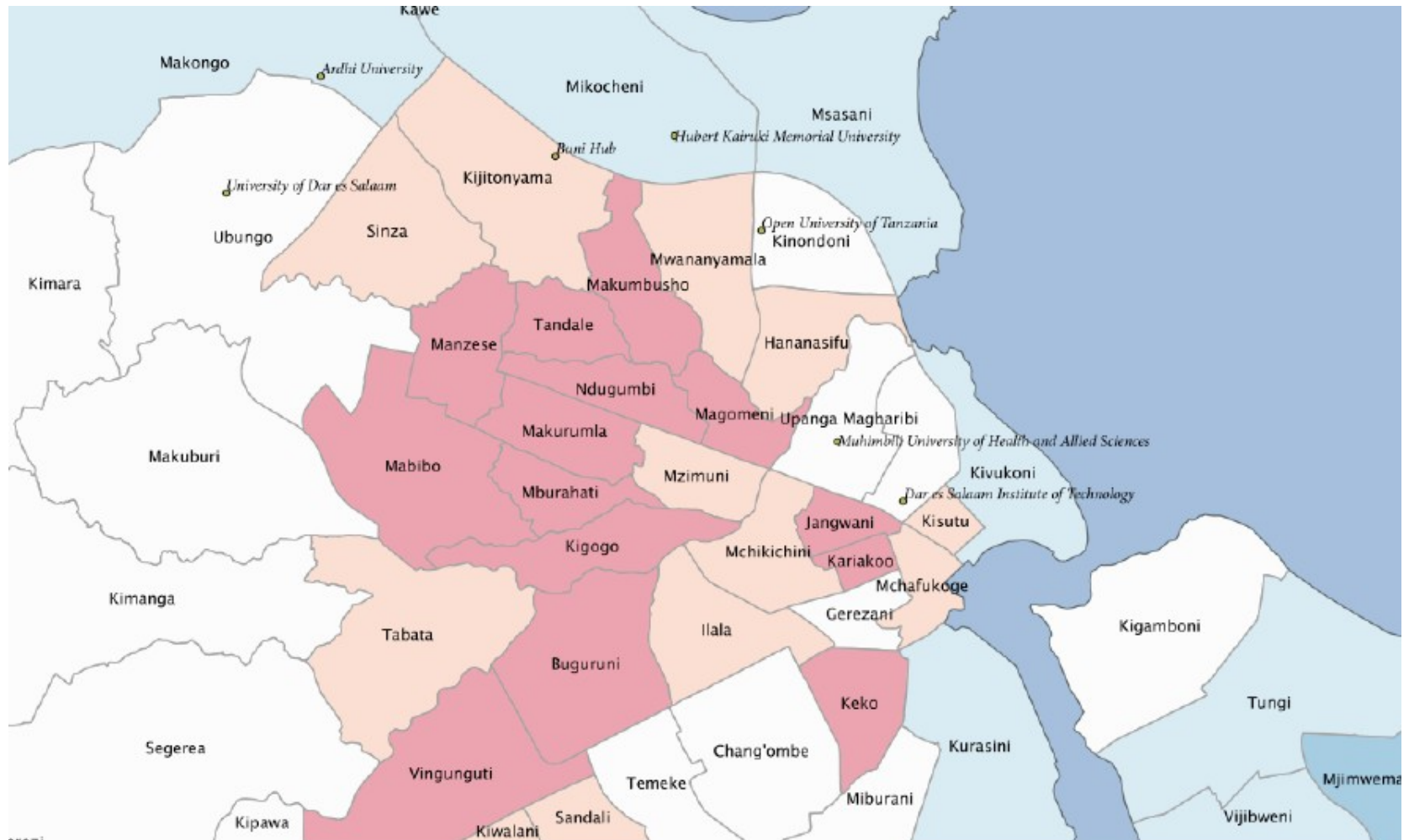


We are Mapping Dar es Salaam to...

- Support Risk awareness activities related to Urban Flooding
- Improve Understanding, Planning and Maintaining of Urban Infrastructure
- Develop capacity for Risk Analysis through use of InaSAFE Software



Dar es Salaam Population Density



Ward map of central Dar es Salaam, showing population density (red=high, blue=low)

What is OpenStreetMap?



OpenStreetMap (OSM) is a collaborative project to create a free editable map of the world

Created by Steve Coast in the UK in 2004, it was inspired by the success of Wikipedia

How does it work?

OpenStreetMap is built by a community of mappers that contribute and maintain data about roads, trails, cafés, railway stations, and much more, all over the world.

- Volunteered Geographic Information (VGI)
- Expand/Complete/Improve existing DBs, infrastructures, archives
- Gather/Produce new forms of spatial information using local knowledge, informing previous unanswered questions, social, and political problems



WIKIPEDIA
The Free Encyclopedia

navigation

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Harry Wood

my talk

my preferences

my watchlist

my contributions

log out

article

discussion

edit this page

history

move

watch

Cartography

From Wikipedia, the free encyclopedia

"Mapmaker" redirects here. For other uses, see [Mapmaker \(disambiguation\)](#).

Cartography (in [Greek](#) *chartis* = map and *graphein* = write) is the study and practice of making [geographical maps](#). Combining science, [aesthetics](#), and technique,



OpenStreetMap



The Free Wiki World Map

Help & Wiki
News blog
Shop
Map key

Come to the 2009
OpenStreetMap
conference

View

Edit

History

Export

GPS Traces

User Diaries

Welcome, [Harry Wood](#) | [home](#) | [inbox \(0\)](#) | [logout](#)



OpenStreetMap

Edit

History

Export

More ▾

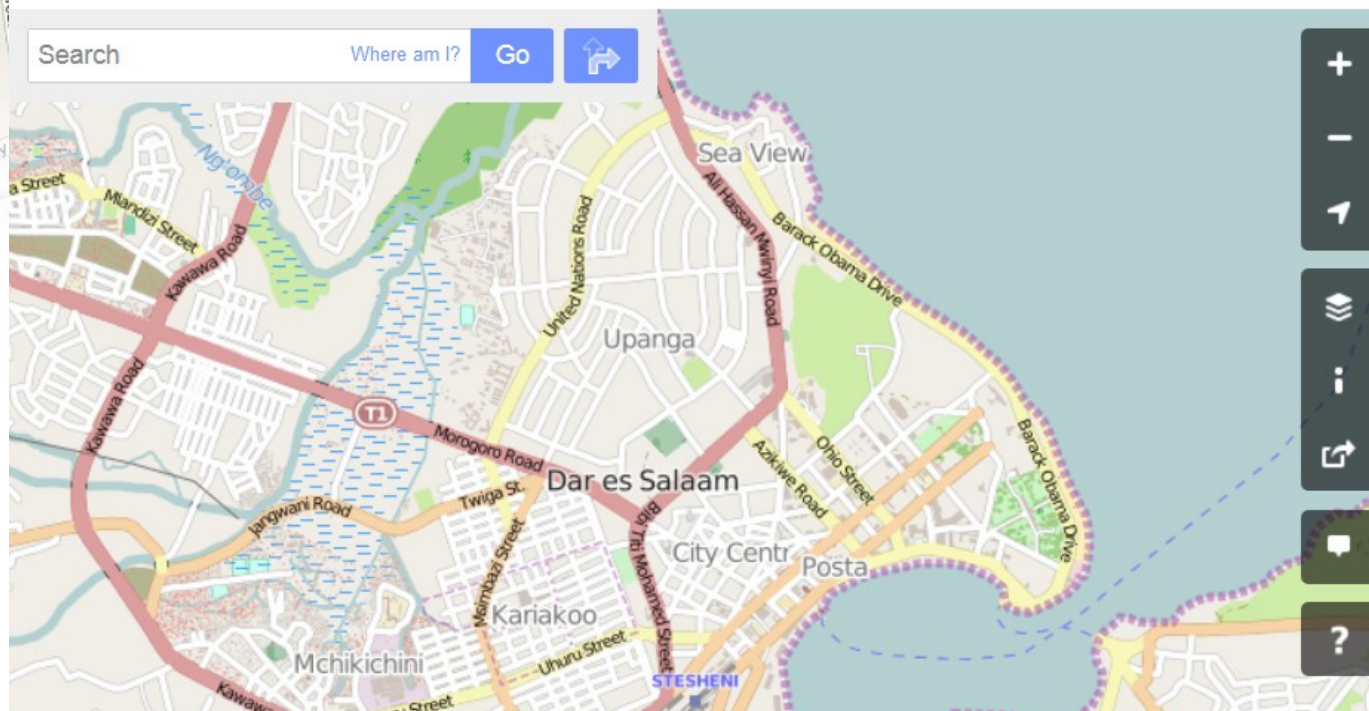
Log In

Sign Up

Search

Where am I?

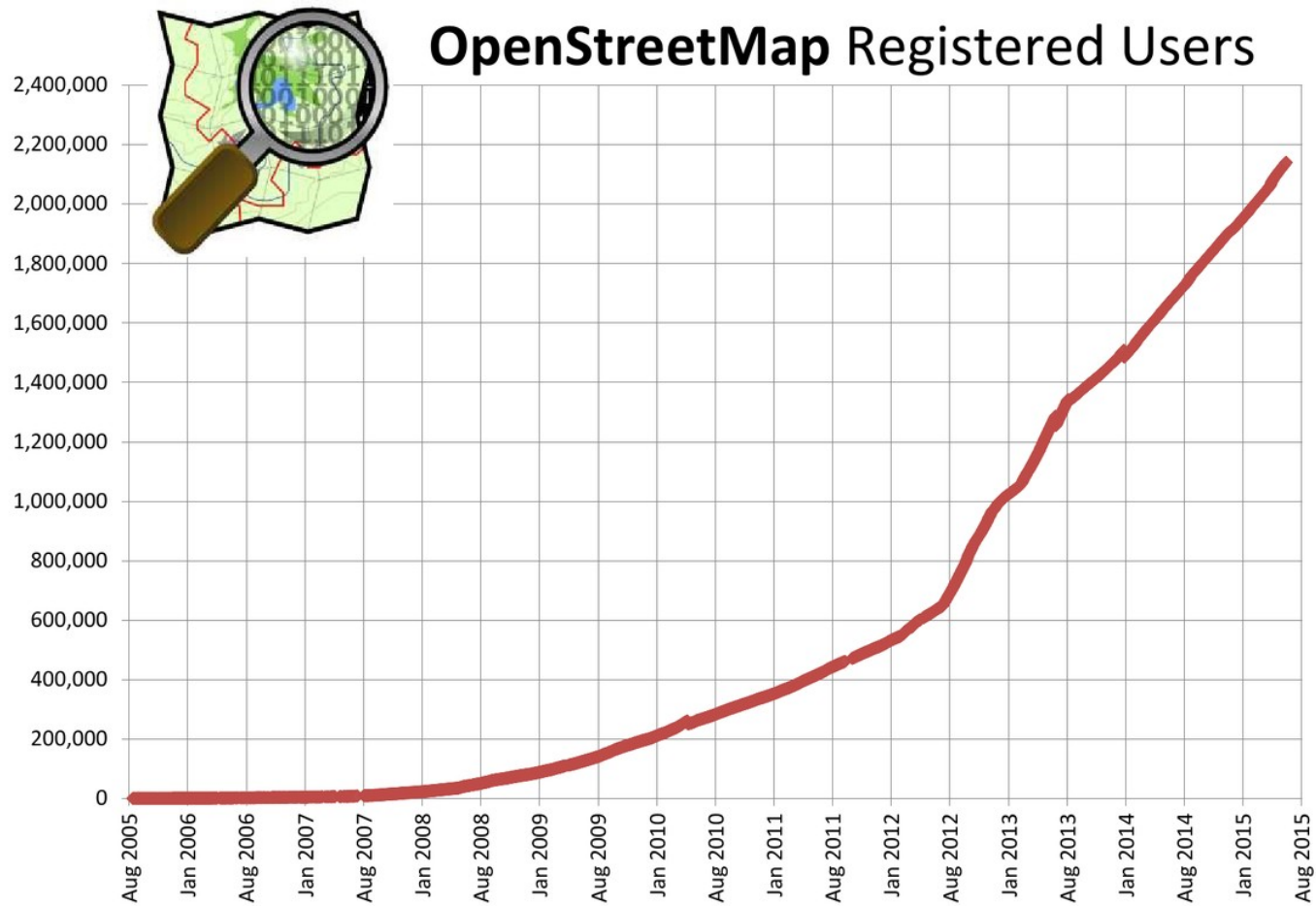
Go



Community driven

OpenStreetMap's community is diverse, passionate, and growing every day. Our contributors include enthusiast mappers, GIS professionals, engineers running the OSM servers. Humanitarians response Teams, and many more.

Community

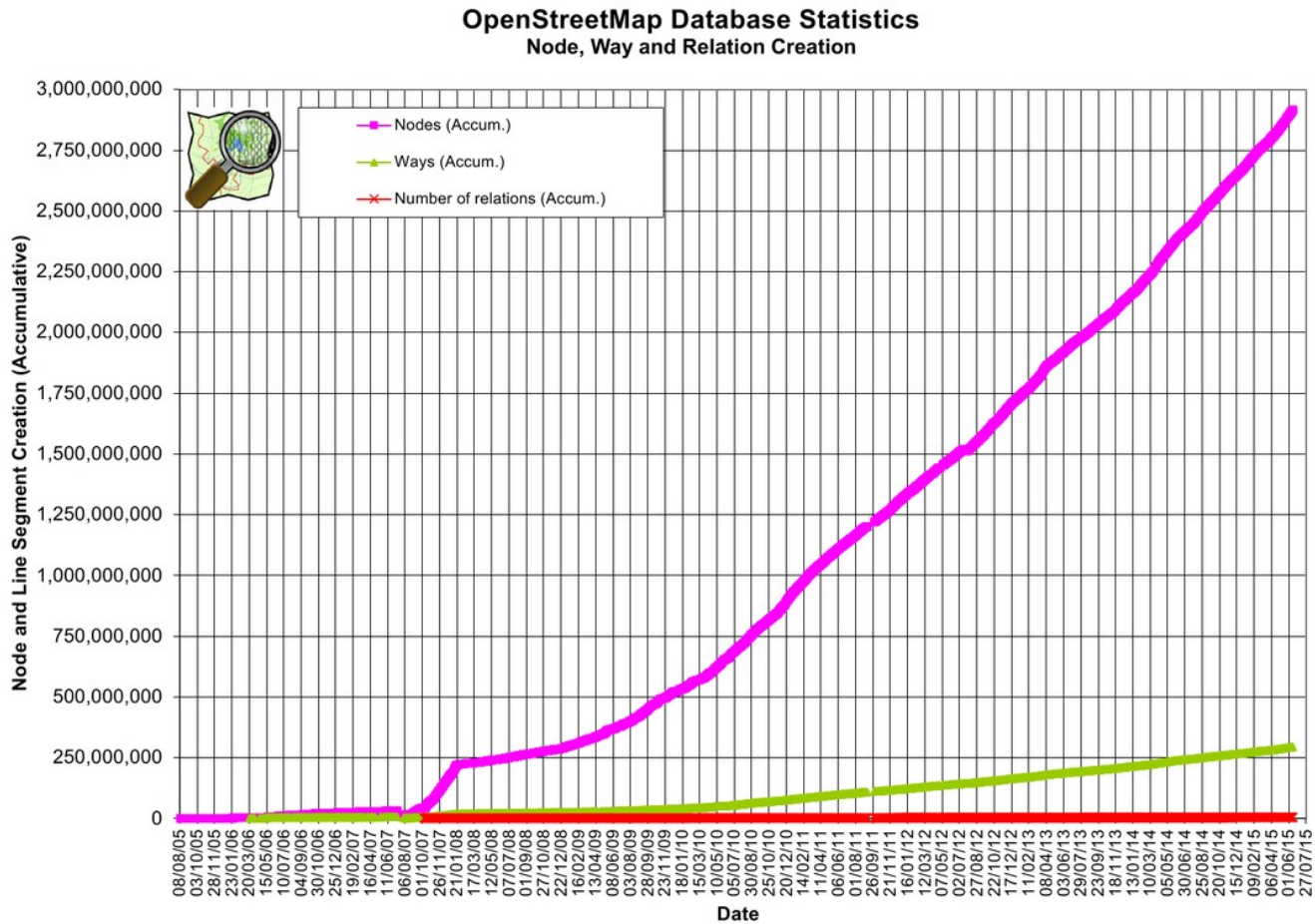


Local knowledge



Contributors use aerial imagery, GPS devices, and low-tech field maps to verify that OSM is accurate and up to date.

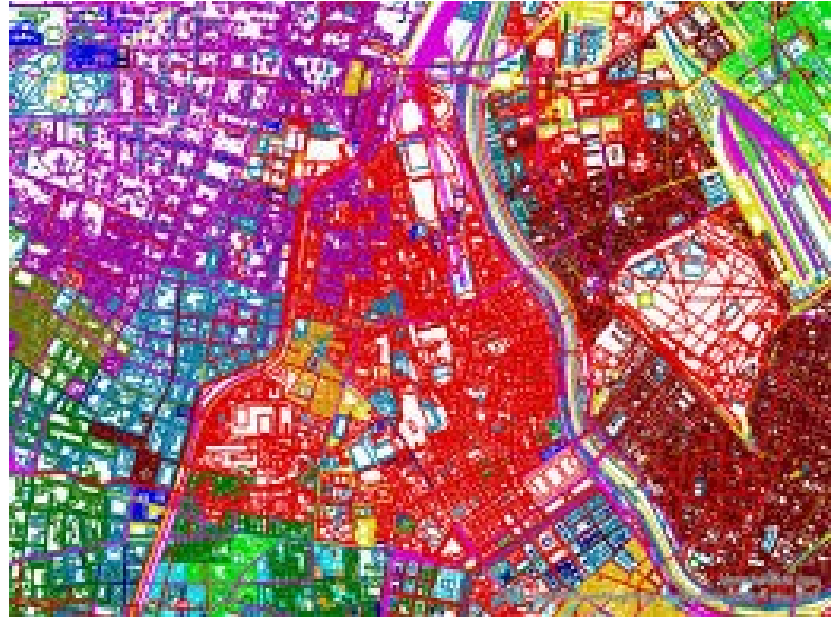
Data objects



Open data

OpenStreetMap is open data: you are free to use it for any purpose as long as you credit OpenStreetMap and its contributors.

Free data
Accessible data
Self-corrective data



Compared to Google Maps which is **Licensed**; meaning that Google owns the data

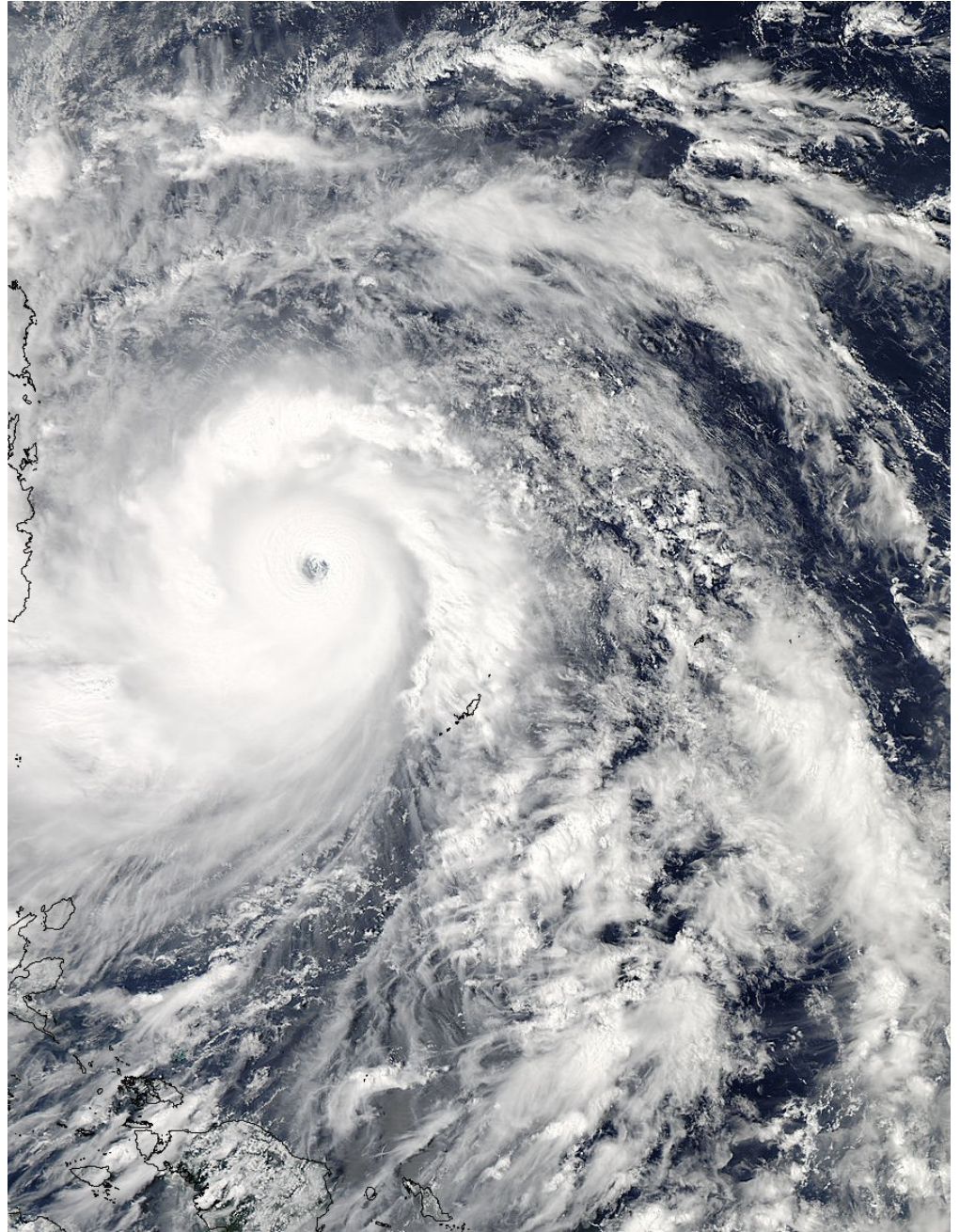
OSM is owned by **users**
OSM is more **accurate**
OSM is more **comprehensive**

What can it be used for?

Anything...

- Business
- Humanitarian
- Planning / Preparation
- Communicating Issues / Problems

Humanitarian



Humanitarian

#1083 - Missing Maps: Dar es Salaam

Description

Instructions

Contribute

Activity

Stats

- Author: **American Red Cross**
- Requesting Organization: **Missing Maps**
- Priority: **High**

Tracing Guide

The Dar es Salaam has experienced a rash of deadly flash floods in recent months, and the map data generated by this event will be used to develop an early warning system to alert residents of future flooding.

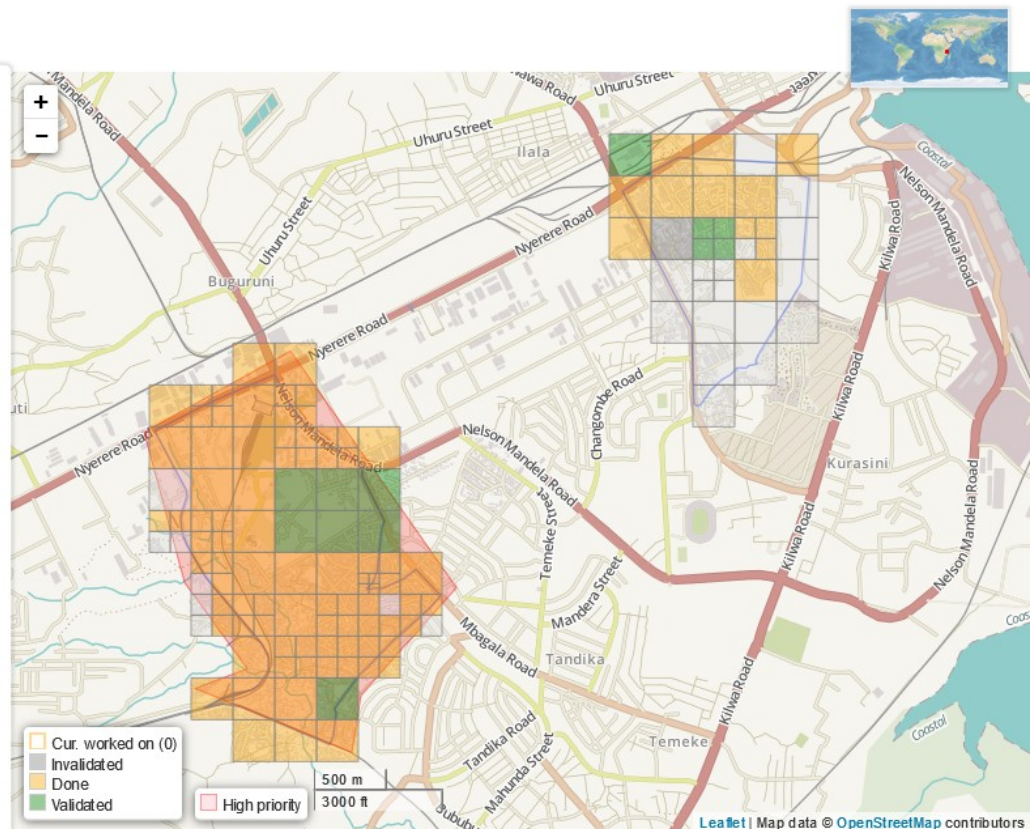
Digital Globe is supporting the effort to map 3 wards (Keko, Sendali, and Mbagala) in Dar Es Salaam as part of a long term consortium Disaster Risk Reduction program with the World Bank, Humanitarian OpenStreetMap Team (HOT), Ardhi Univeristy, Tanzania Red Cross Society, Danish Red Cross, Red Cross Red Crescent Climate Centre, University of Dar es Salaam, and Tanzania Commission for Science and Technology (COSTECH).

The purpose of this task is to trace all buildings and roads. HOT is training and leading teams from Ramani Huria and OSM Tanzania that will work in the coming weeks to ground truth the data.

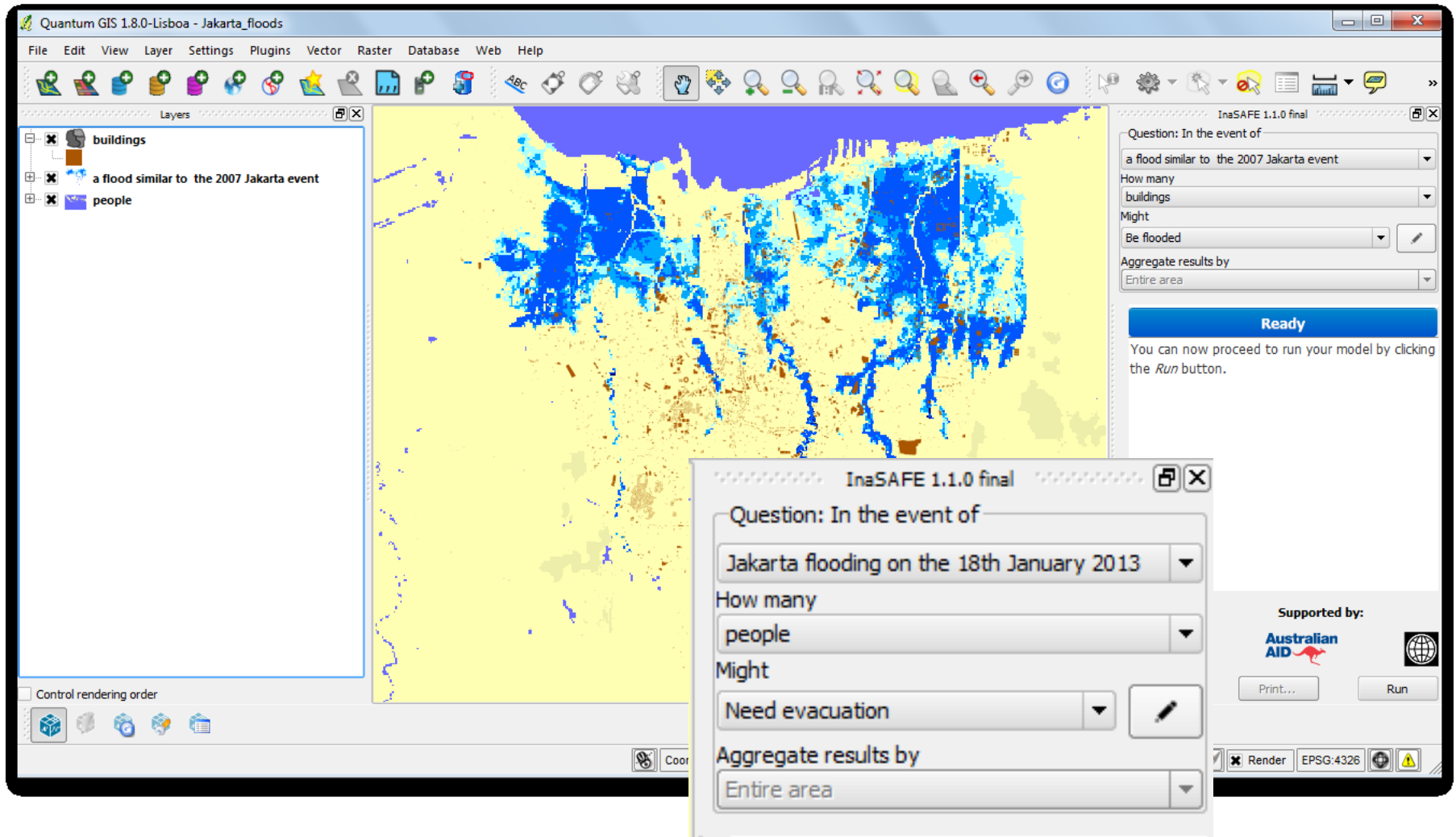
The Missing Maps project aims to map the most vulnerable places in the world (affected by humanitarian crises: disease epidemics, conflict, natural disasters, poverty, environmental crises). Building on HOT's disaster preparedness projects, the Missing Maps tasks facilitate preemptive mapping of priority countries to better facilitate disaster response, medical activities and resource allocation when crises occur.

For more information on the Missing Maps, visit www.missingmaps.org.

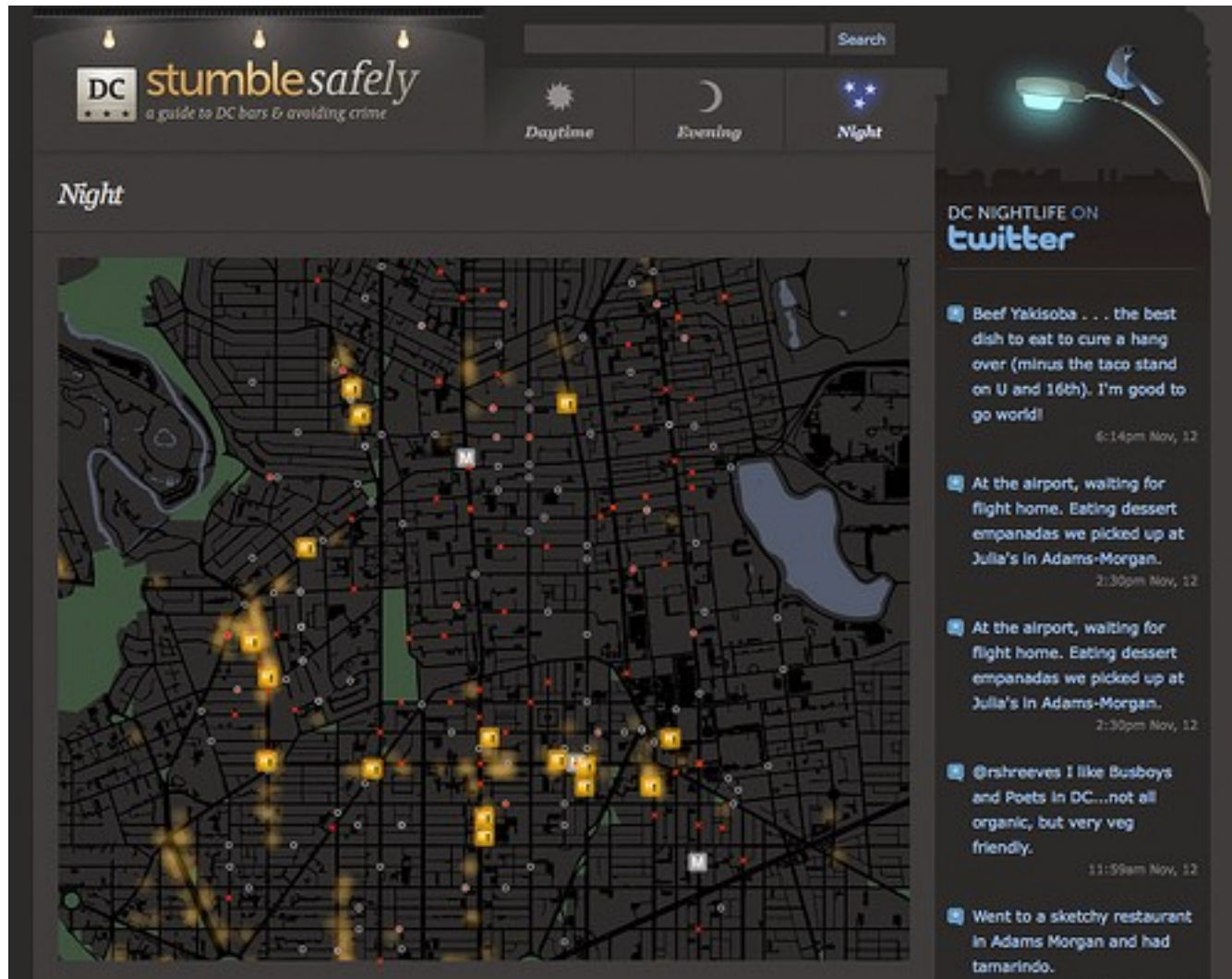
Instructions



InaSAFE



Communicating issues/problems



The screenshot shows the DC Stumble Safely website interface. At the top, there's a logo for "DC stumble safely" with the tagline "a guide to DC bars & avoiding crime". Below the logo are three tabs: "Daytime", "Evening", and "Night", with "Night" selected. A search bar is located in the top right corner. The main content area features a map of Washington, D.C. with numerous glowing yellow markers indicating locations of interest or issues. To the right of the map, there's a section titled "DC NIGHTLIFE ON twitter" which displays a list of tweets related to nightlife in DC.

DC stumble safely
a guide to DC bars & avoiding crime

Daytime Evening Night

Night

DC NIGHTLIFE ON twitter

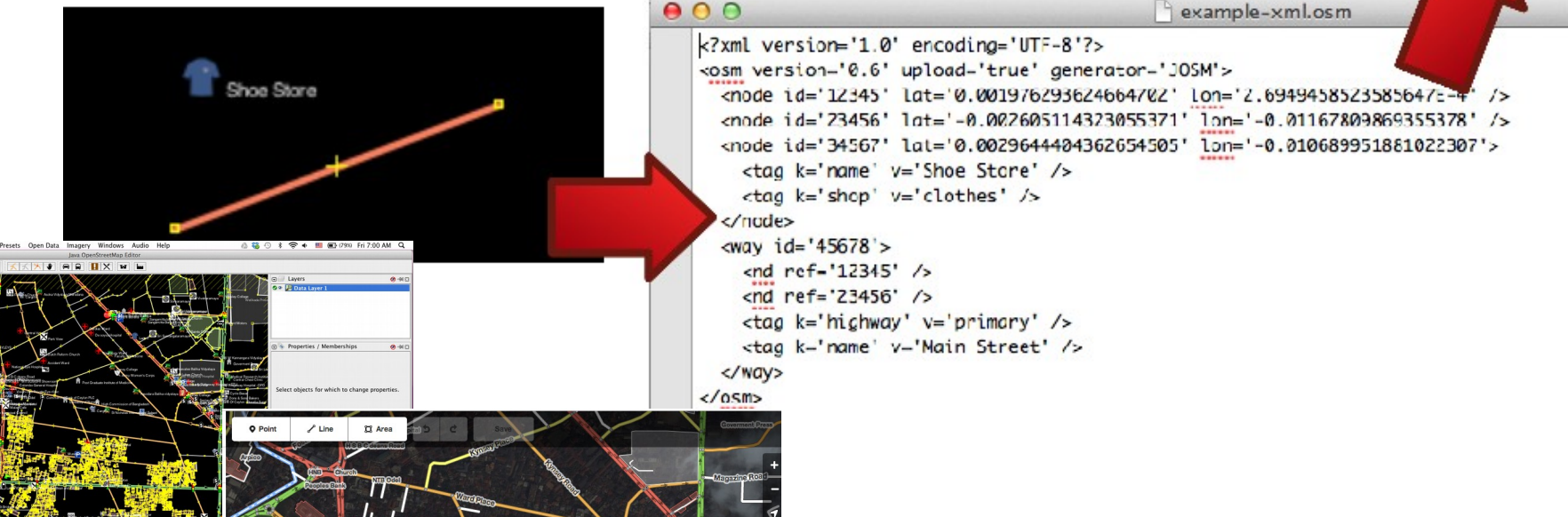
- Beef Yakisoba . . . the best dish to eat to cure a hang over (minus the taco stand on U and 16th). I'm good to go world!
6:14pm Nov, 12
- At the airport, waiting for flight home. Eating dessert empanadas we picked up at Julia's in Adams-Morgan.
2:30pm Nov, 12
- At the airport, waiting for flight home. Eating dessert empanadas we picked up at Julia's in Adams-Morgan.
2:30pm Nov, 12
- @rshreeves I like Busboys and Poets in DC...not all organic, but very veg friendly.
11:59am Nov, 12
- Went to a sketchy restaurant in Adams Morgan and had tamarindo.

How does it work?

- Geodata
 - Roads
 - Waterways
 - POIs
 - Buildings
 - ... and more
- Thousands of Users Editing
- Open, Free Data (ODbL)

How does it work?

- Multiple Editing Applications
- Editing API (Data transmitted over XML)
 - (Application Programming Interface; defines how computer programs talk to each other)
- Central Database

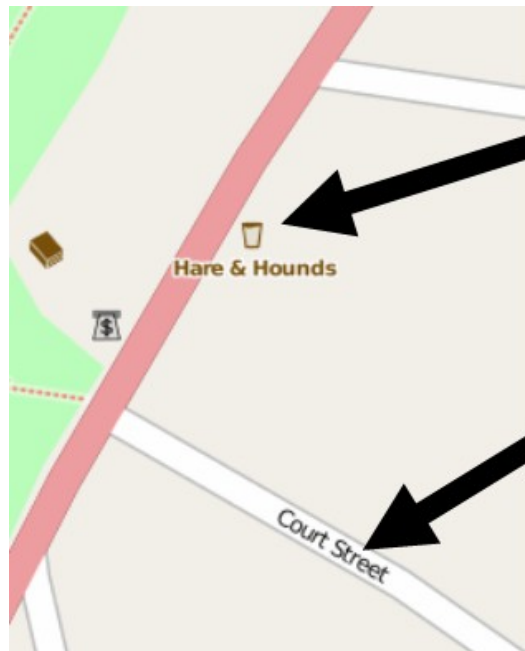


How do people map?

- Trace Imagery
- Go Outside
- Report Bugs
- Divide Tasks

The data

- All Vector Data
- Free-tagging system
 - (meaning every object in the database can carry an unlimited number of attributes)



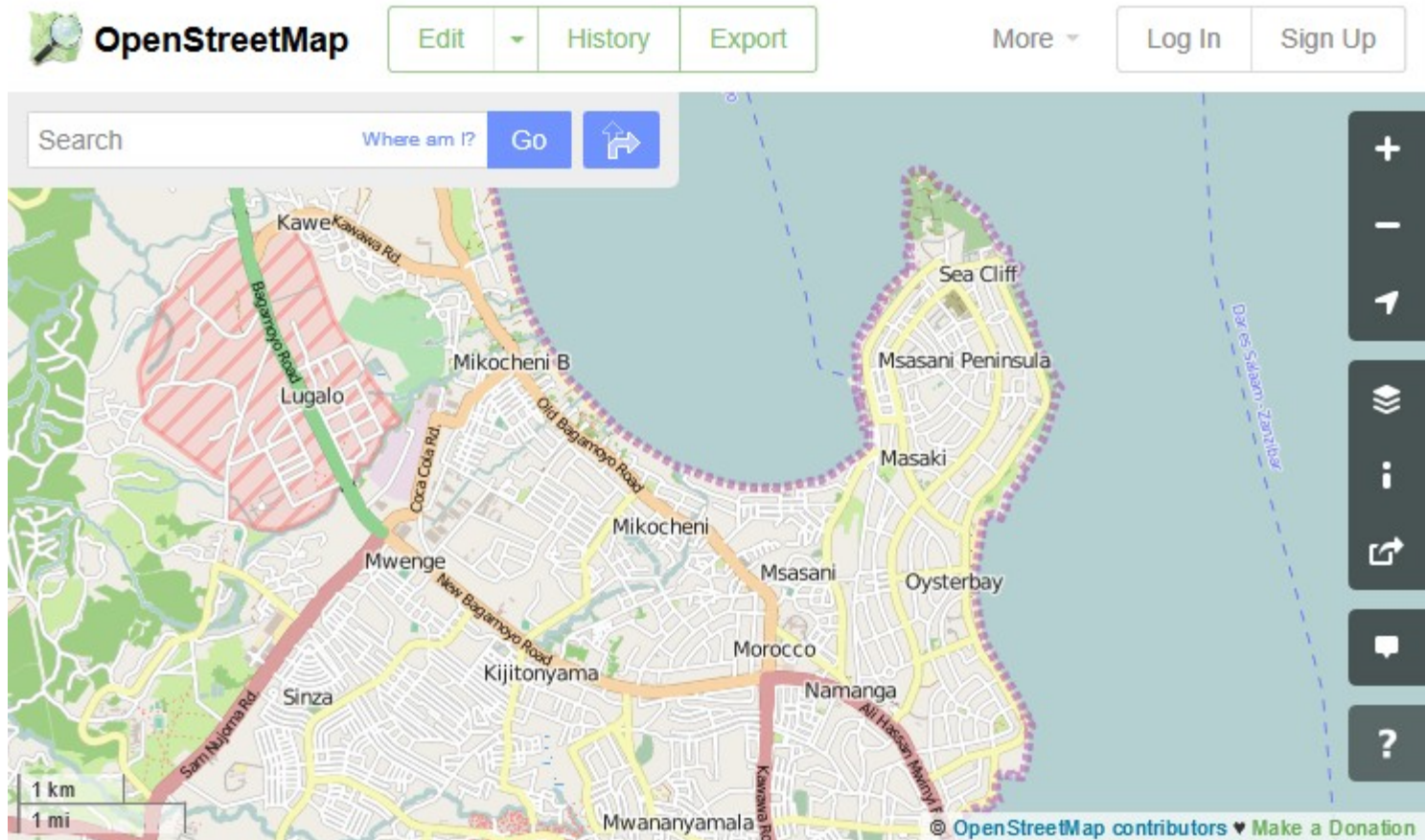
amenity=pub
name=Hare & Hounds

highway=residential
name=Court Street

Our data model

- drainage
 - stream, drain, ditch, culvert
- sanitation
 - drinking water, water tank, public toilet
- roads
 - tertiary, unclassified, residential, footway
- buildings
 - residential, commercial, industrial
- landuse
 - playground, wetland, park, cemetery
- http://wiki.openstreetmap.org/wiki/Map_Features

The map



Navigating the map

- Dar es Salaam!

<http://www.openstreetmap.org/#map=13/-6.7847/39.2538>

- Left mouse to drag the map
- Mouse wheel to zoom

Create user accounts

- Go to <https://www.openstreetmap.org/user/new>
- Fill in email address, username, and password
 - ***Remember the password you're using!***
 - We have found yahoo mail to cause issues with confirmation email.
Use gmail if possible.
- Find the confirmation email, click the link to confirm
- Log in



Sign Up



Email Address:

Confirm Email Address:

Not displayed publicly (see [privacy policy](#))

Display Name:

Your publicly displayed username. You can change this later in the preferences.

Password:

Confirm Password:

Free and editable

Unlike other maps, OpenStreetMap is completely created by people like you, and it's free for anyone to fix, update, download and use.

Sign up to get started contributing. We'll send an email to confirm your account.

Alternatively, use a [third party to login](#)

Sign Up

Map layers (standard)

The screenshot displays the OpenStreetMap web application. At the top, the 'OpenStreetMap' logo is on the left, and navigation links for 'Edit', 'History', and 'Export' are in the center. On the right, there are links for 'More', 'Log In', and 'Sign Up'. Below the navigation bar is a search bar with the placeholder text 'Where am I?' and a 'Go' button. The main map area shows a detailed street view of a coastal urban area, likely in Kenya, with labels for locations such as Mikocheni B, Mwananyamala, and the Sea Cliff. A scale bar in the bottom left corner indicates 1 km and 1 mi. On the right side, a 'Map Layers' panel is open, showing a list of map styles: 'Standard' (selected), 'Cycle Map', 'Transport Map', 'MapQuest Open', and 'Humanitarian'. Below this panel, there is a section titled 'Enable overlays for troubleshooting the map' with checkboxes for 'Map Notes' and 'Map Data', both of which are currently unchecked. The bottom of the map area includes a copyright notice for 'OpenStreetMap contributors' and a 'Make a Donation' link.

OpenStreetMap

Edit History Export

More Log In Sign Up

Search Where am I? Go

Map Layers

- Standard
- Cycle Map
- Transport Map
- MapQuest Open
- Humanitarian

Enable overlays for troubleshooting the map

- ☐ Map Notes
- ☐ Map Data

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Map layers (cycle, and more)

The screenshot displays the OpenStreetMap web interface. At the top, the OpenStreetMap logo is on the left, and navigation links for 'Edit', 'History', and 'Export' are in the center. On the right, there are links for 'More', 'Log In', and 'Sign Up'. Below the navigation bar is a search bar with the placeholder text 'Where am I?' and a 'Go' button. The main map area shows a coastal region with labels for 'SEA CLIFF', 'MSASANI PENINSULA', 'MASAKI', 'MIKOCHENI', 'OYSTERBAY', 'NAMANGA', 'KINONDONI', 'SEA VIEW', 'IIPANGA', 'LUGALO', 'MWENGE', 'KIJITONYAMA', 'MAZIWA', and 'MABIDO'. A scale bar indicates 1 km and 1 mi. At the bottom, it says '© OpenStreetMap contributors. Tiles courtesy of Andy Allan'. On the right side, there is a 'Map Layers' panel with a close button (X). It lists five map styles: 'Standard', 'Cycle Map' (which is highlighted with a green border and shows a bicycle icon), 'Transport Map', 'MapQuest Open', and 'Humanitarian'. Below the map layers, there is a section titled 'Enable overlays for troubleshooting the map' with two checkboxes: 'Map Notes' and 'Map Data', both of which are currently unchecked.

Share

OpenStreetMap Edit History Export

Search Where am I? Go

Map controls: +, -, 1, Layers, Info, Share, ?

Scale: 1 km, 1 mi

© OpenStreetMap contributors [Make a Donation](#)

Share

Link or HTML
☐ Include marker

[Link](#) [Short Link](#) [HTML](#)

<http://www.openstreetmap.org/>

Geo URI
[geo:-6.7616,39.2576?z=13](http://www.openstreetmap.org/?geo=-6.7616,39.2576?z=13)

Image
☐ Set custom dimensions

Format:

Scale: 1 :

Image will show standard layer at 512 x 473

[Download](#)