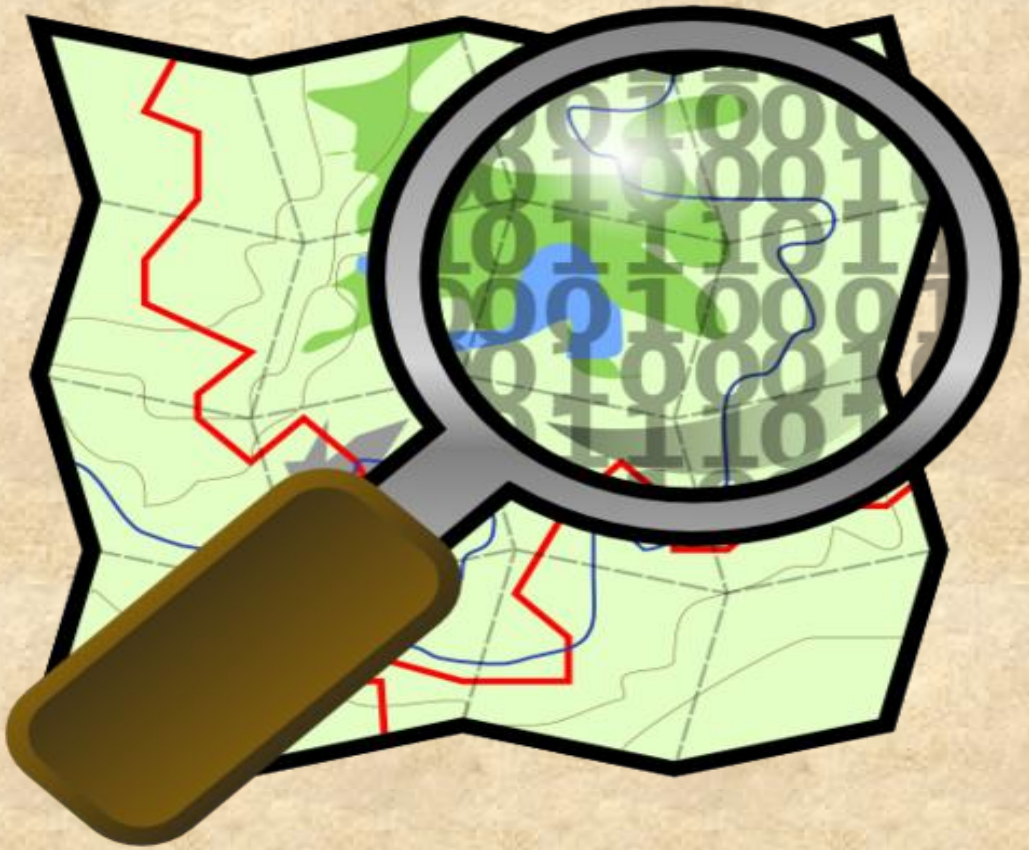
OpenStreetMap



OpenStreetMap.org

Naveen Francis
Digital Humanitarian

What is it?

OpenStreetMap (OSM)

- **Not software**
- **It's a collaborative project to create a free & editable map of the world.**
- **The Wikipedia of Cartography**
- **Anyone can contribute**

*www.**openstreetmap**.org*

What is it?

- *Open Geo Data*
- There are many “free” basemaps, Google, Here, Bing, MapmyIndia...
- These only give limited rights of use
- OSM gives users rights to any kind of reproduction or processing
- *Open Data Commons Open Database License* (ODbL)

Methodology

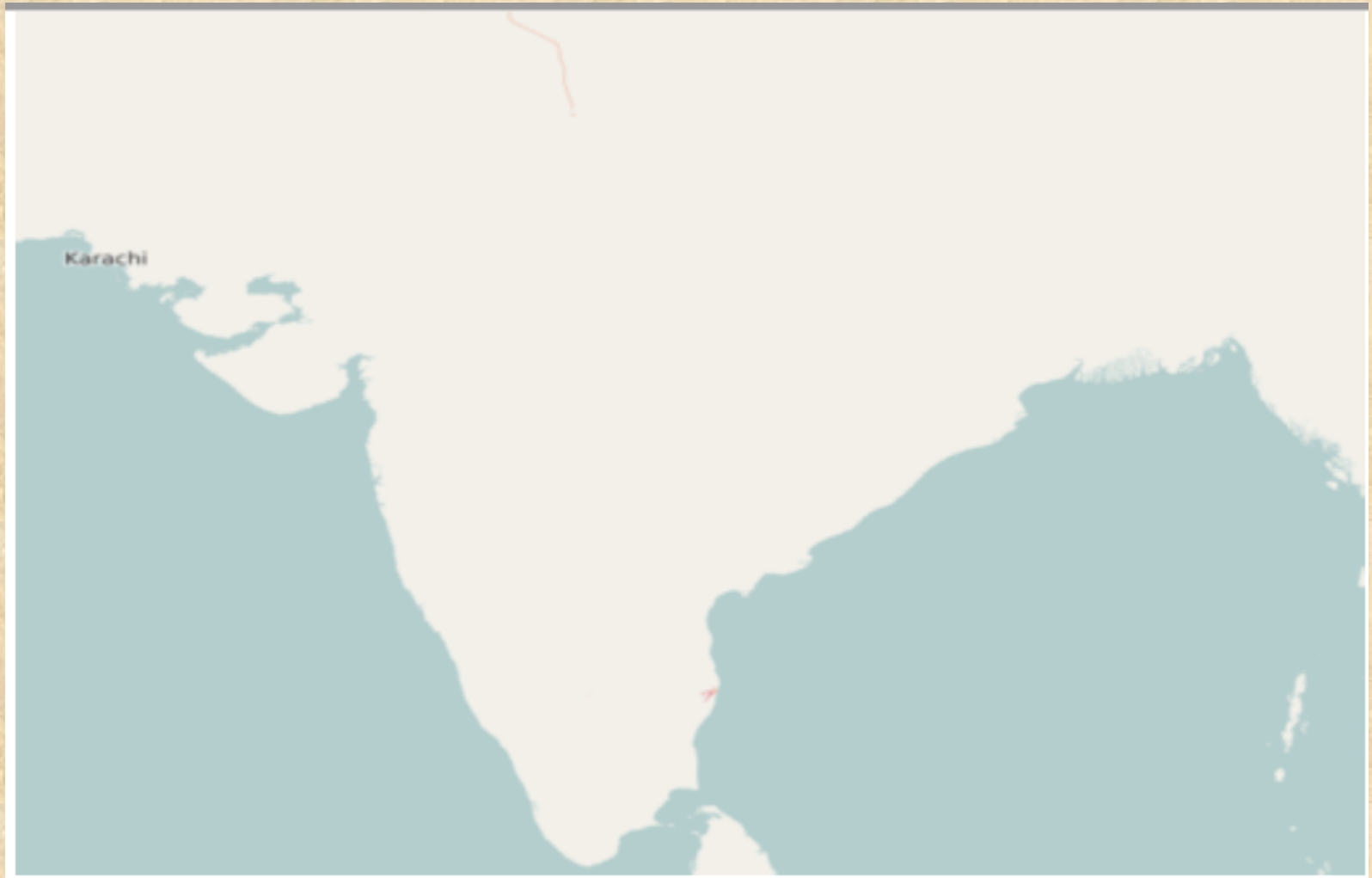
People, like you and me, gather location data across the globe from a variety of sources such as:

- Digitizing against free satellite imagery
- Recordings from GPS devices
- Public domain data

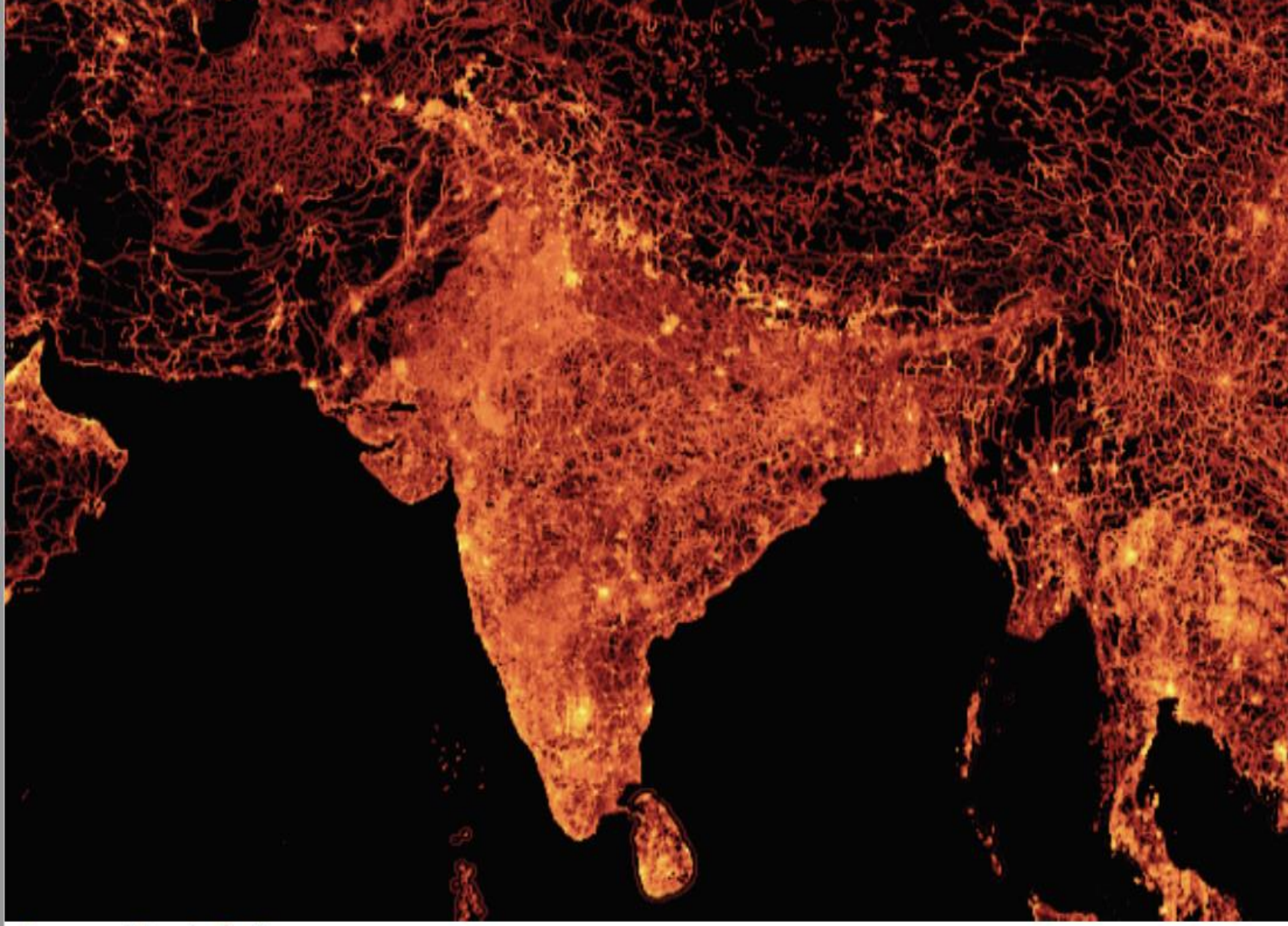
This information then gets uploaded to OpenStreetMap's central database from where it can be further modified, corrected and enriched by anyone who notices missing facts or errors about the area.

All OSM users have a stake in having accurate data. If one person puts in inaccurate data, maliciously or accidentally, the other 99.9% of people can check it, fix it, or get rid of it.

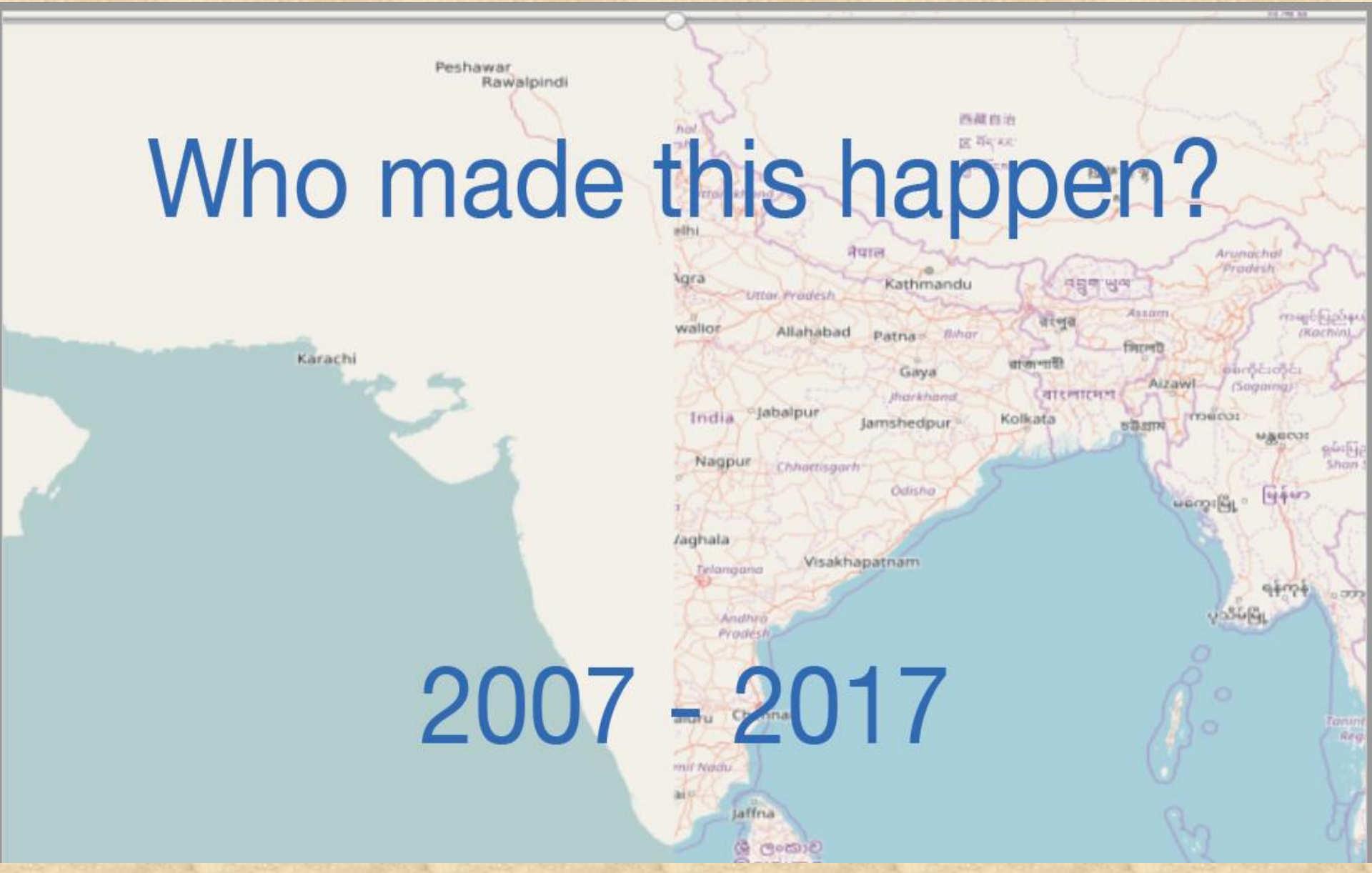
The Map



India - 2007



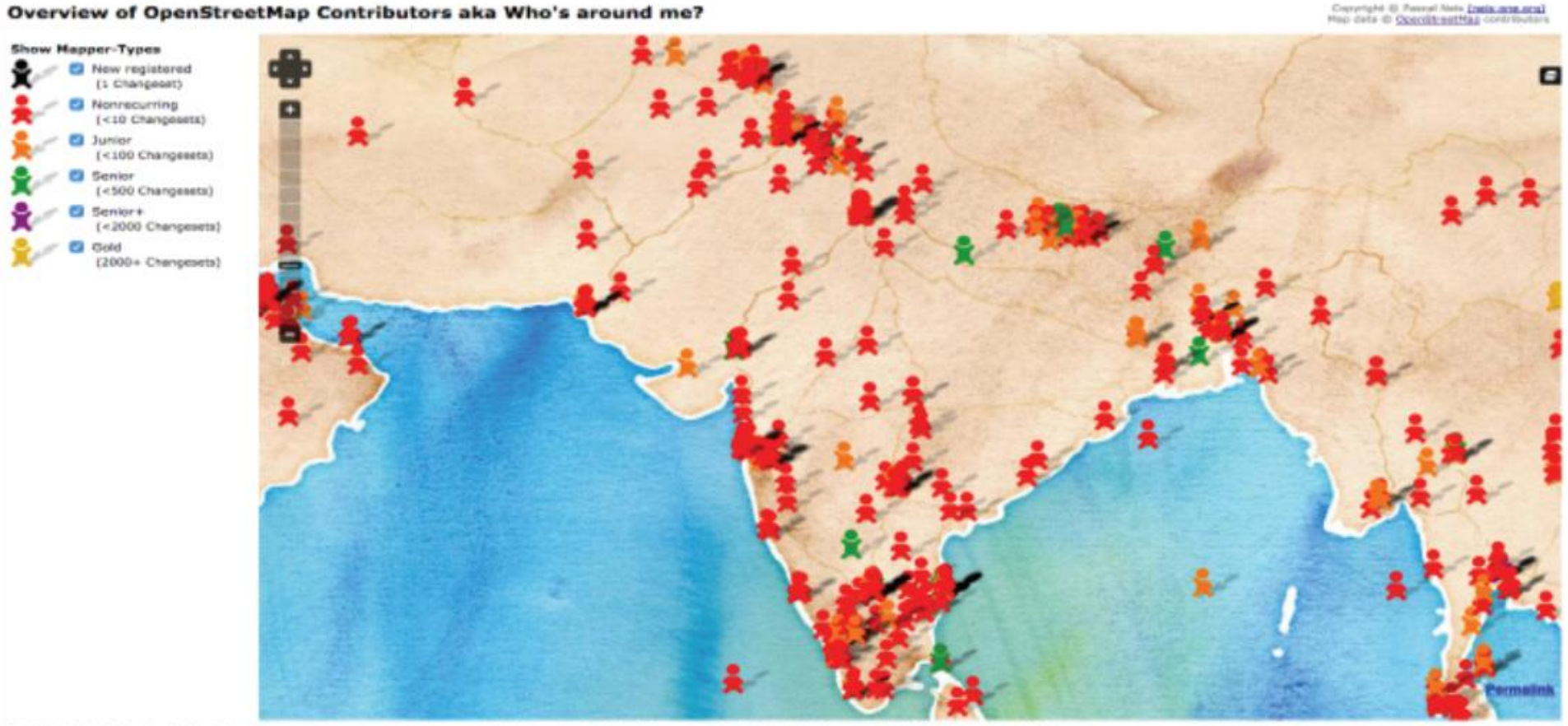
Source: Martin Reifer



Who made this happen?

2007 - 2017

OSM



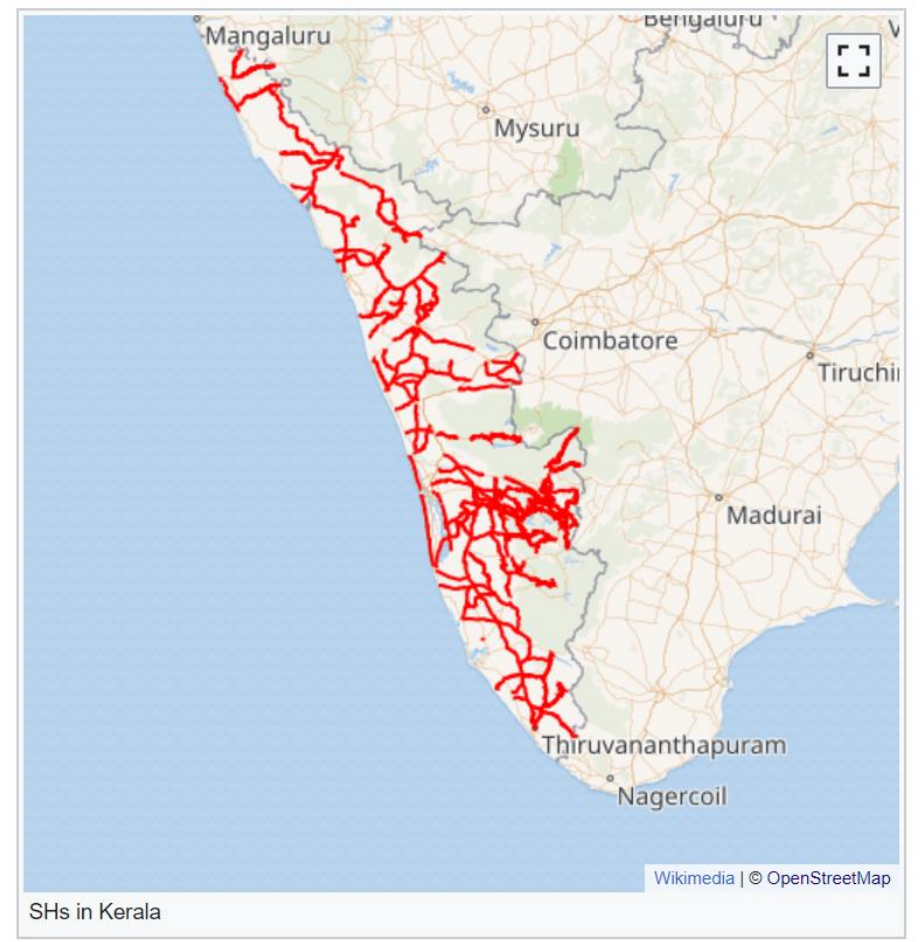
Community!

In India, a death occurs every 3.5 minutes due to road accidents

Road Data

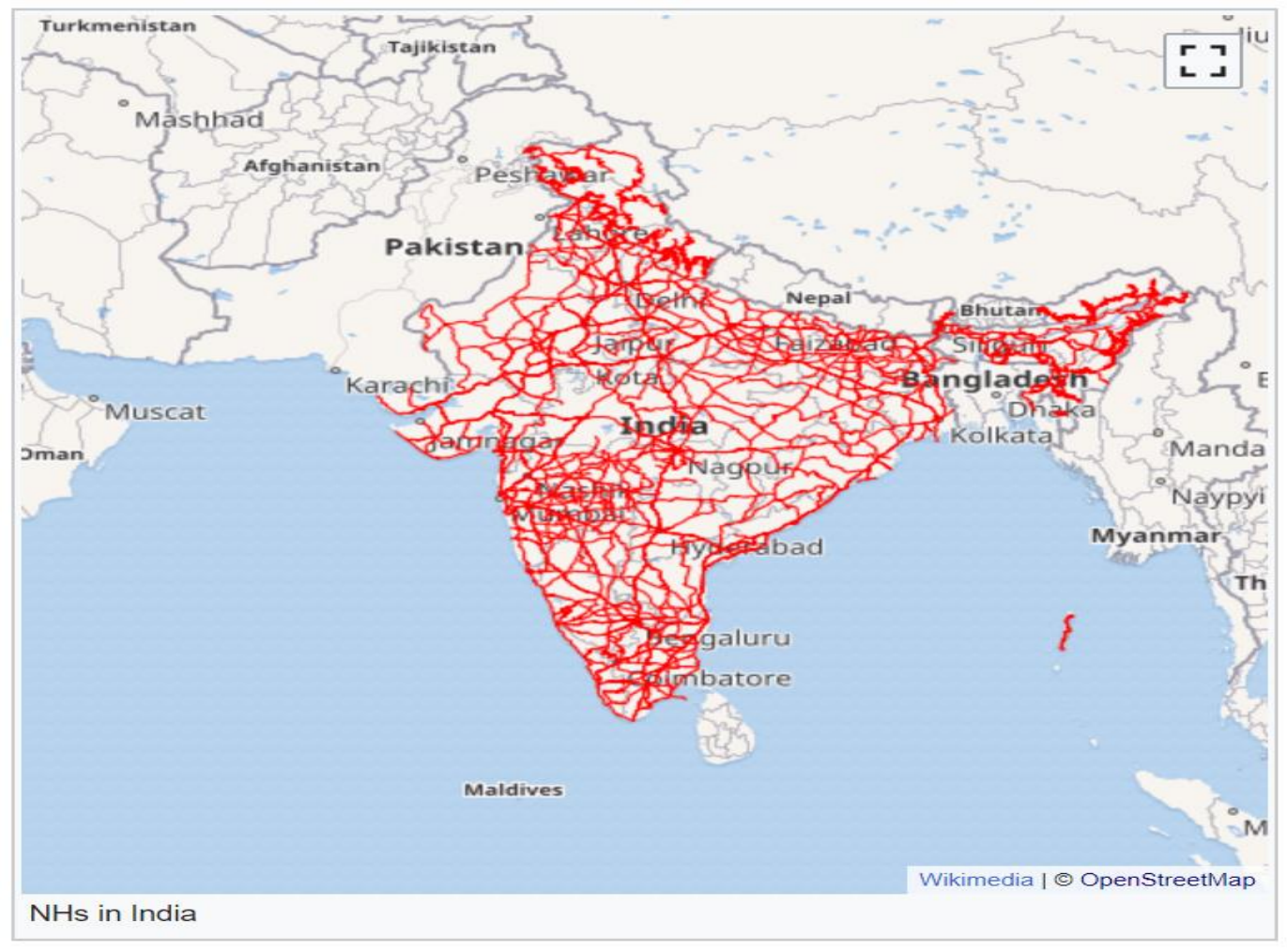
- National Highways accounted for 30.4 per cent of total road accidents and 36.0 per cent of deaths in 2017.
- Accidents on State Highways constitute 25 per cent. In case of fatality, State Highways has accounted for 26.9 per cent.
- 63% people die on NH/SH. NH/SH - 3 lakhs kms

State Highway Mapping



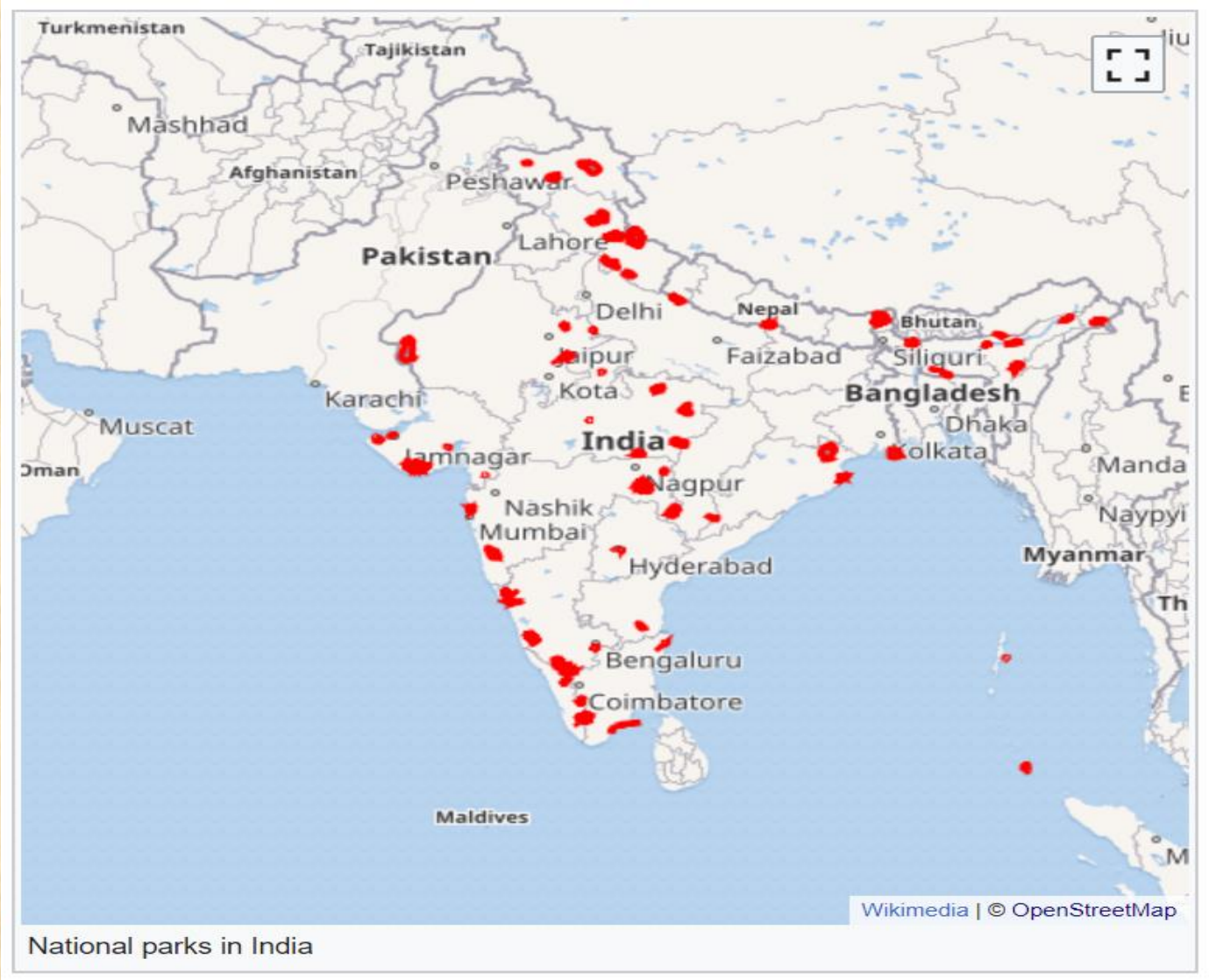
https://en.wikipedia.org/wiki/List_of_state_highways_in_Kerala

National Highway Mapping



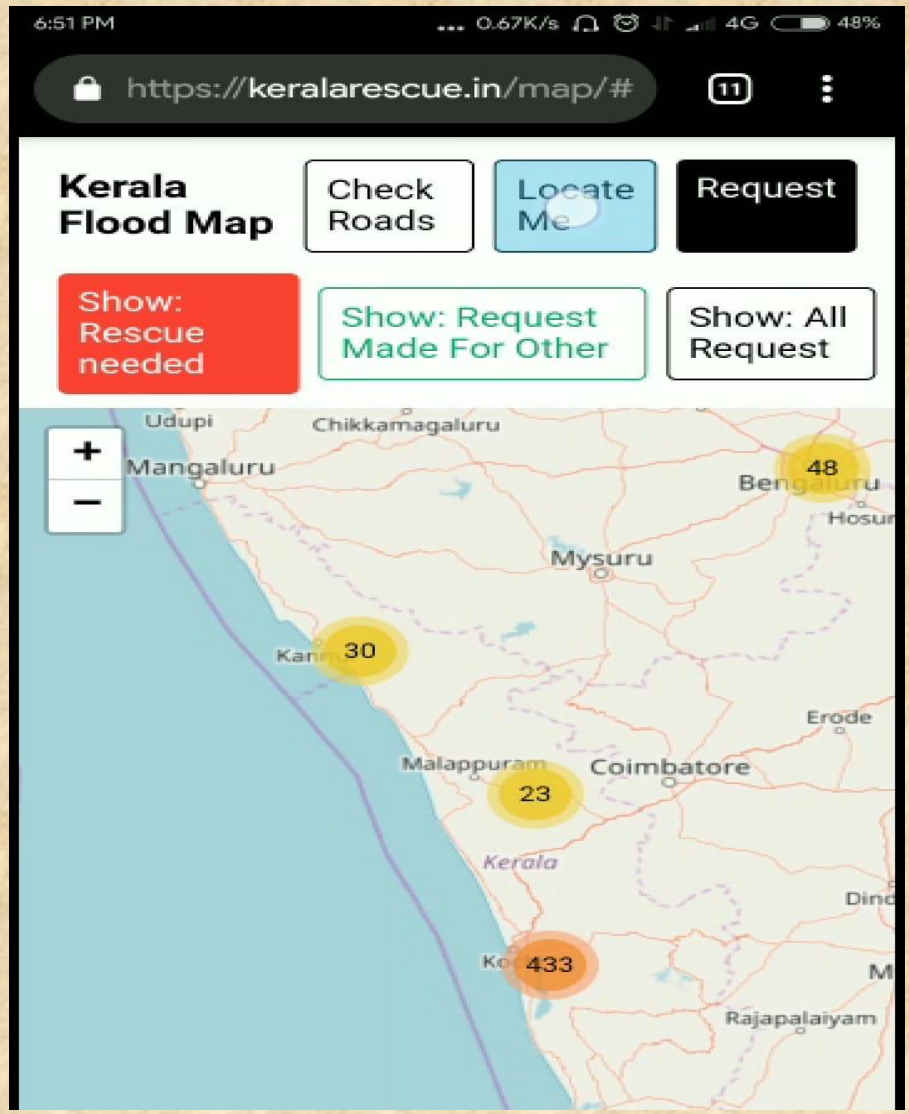
https://en.wikipedia.org/wiki/National_Highway_(India)

National Parks in India

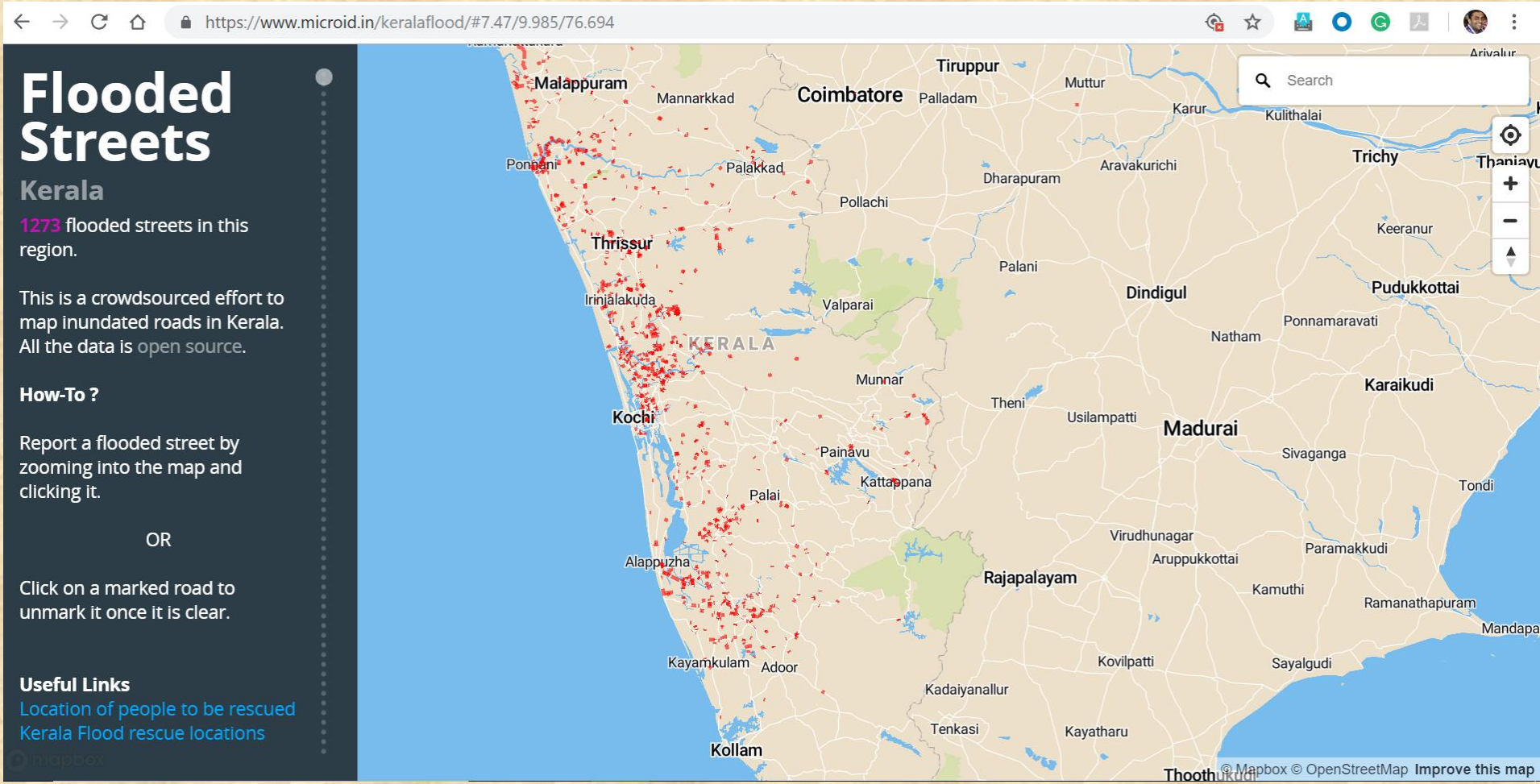


National parks in India

https://en.wikipedia.org/wiki/List_of_national_parks_of_India



https://keralarescue.in/map/



https://www.microid.in/keralaflood/

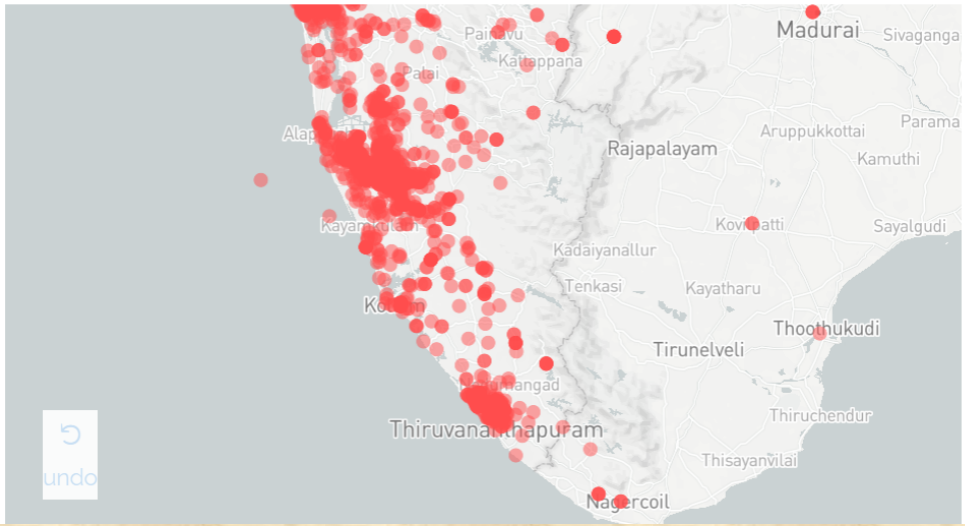
https://process.keralarescue.in

Click here for Rescue Dashboard || Click here for Relief Camps Dashboard

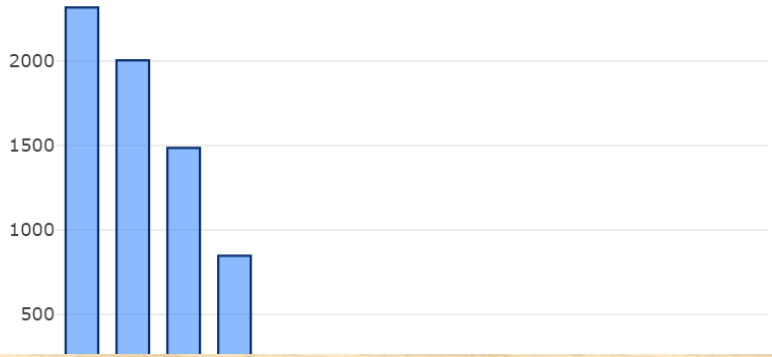
Kerala Rescue Dashboard (Data updated on August 22, 2018 at 10:29)

× Need Rescue

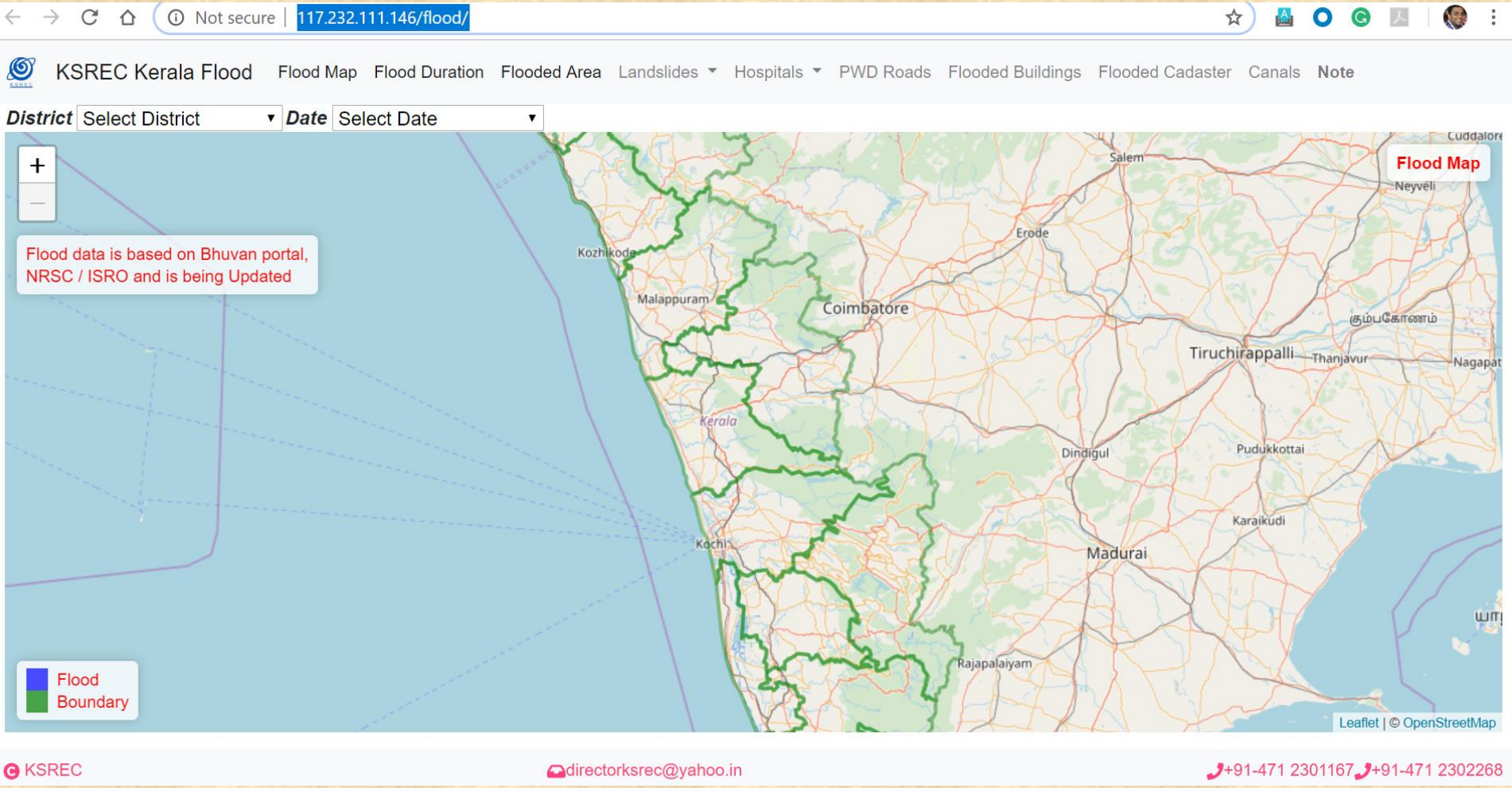
All Requested within last 3 hours Requested today Requested from yesterday Old requests



Requests by District (Click to see detailed location in bottom graph)

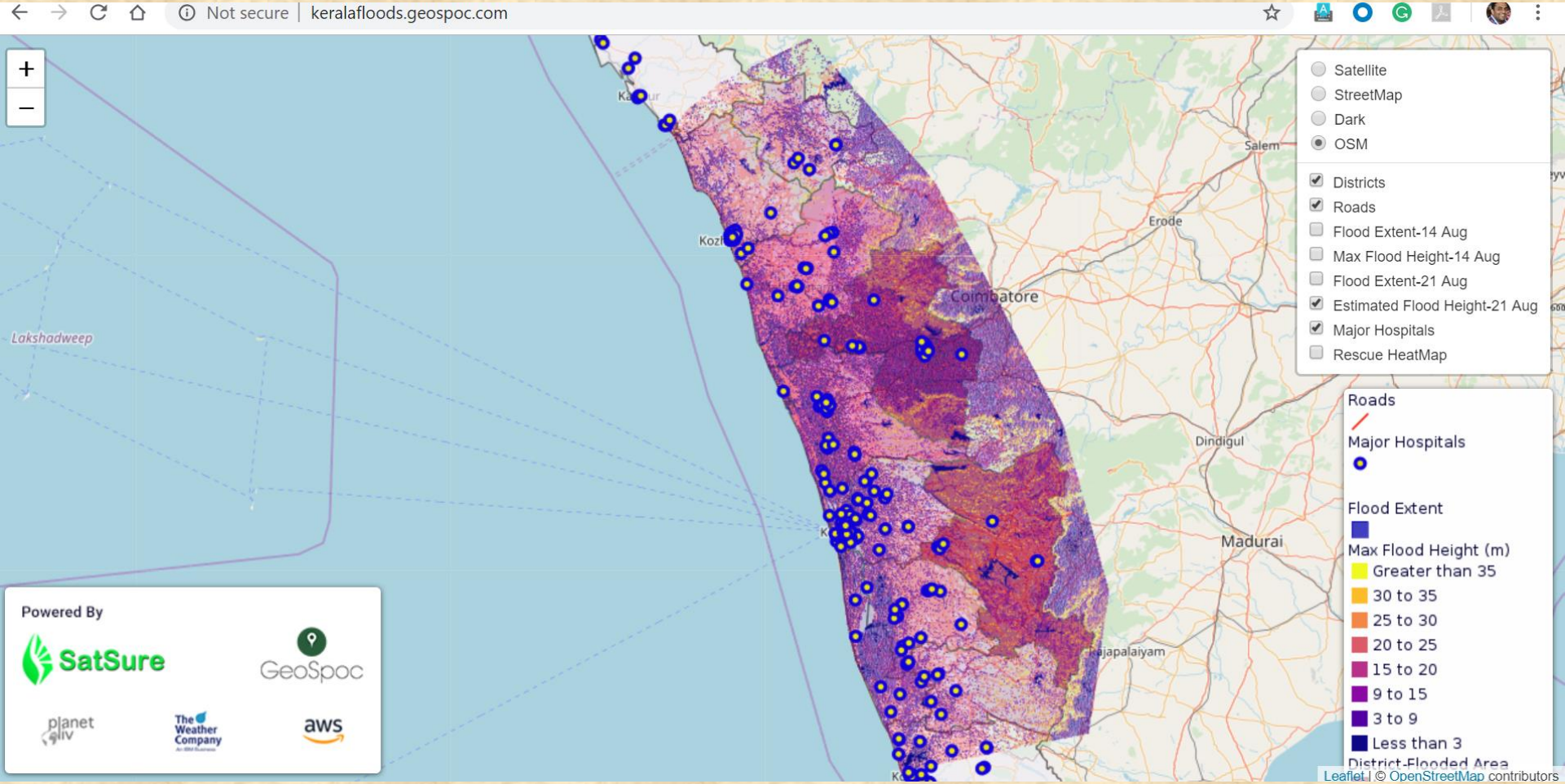


https://process.keralarescue.in/



[KSREC Kerala Flood]

Kerala Floods 2018 Mobile App uses OSM base map

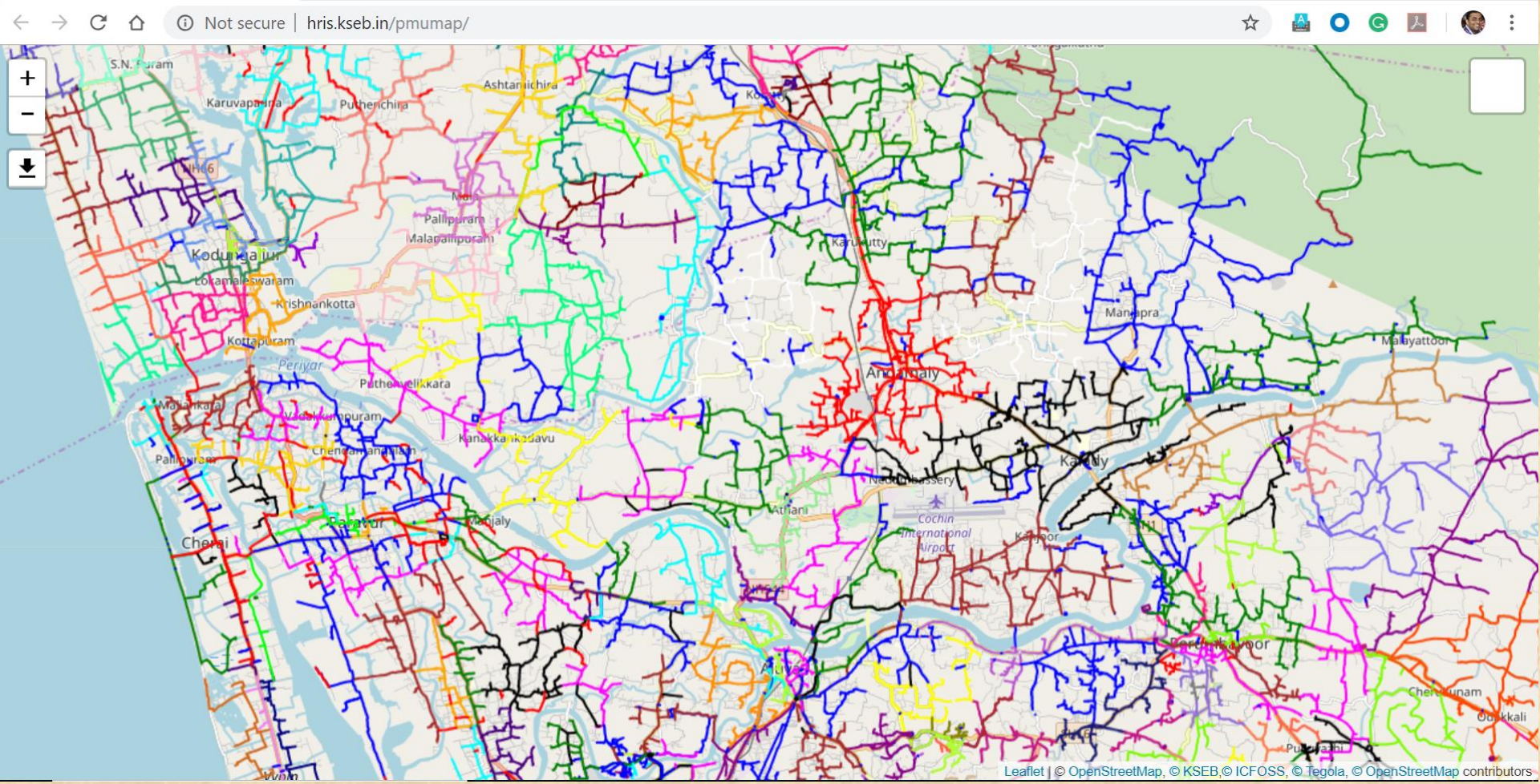


http://keralafloods.geospoc.com/

KSEB

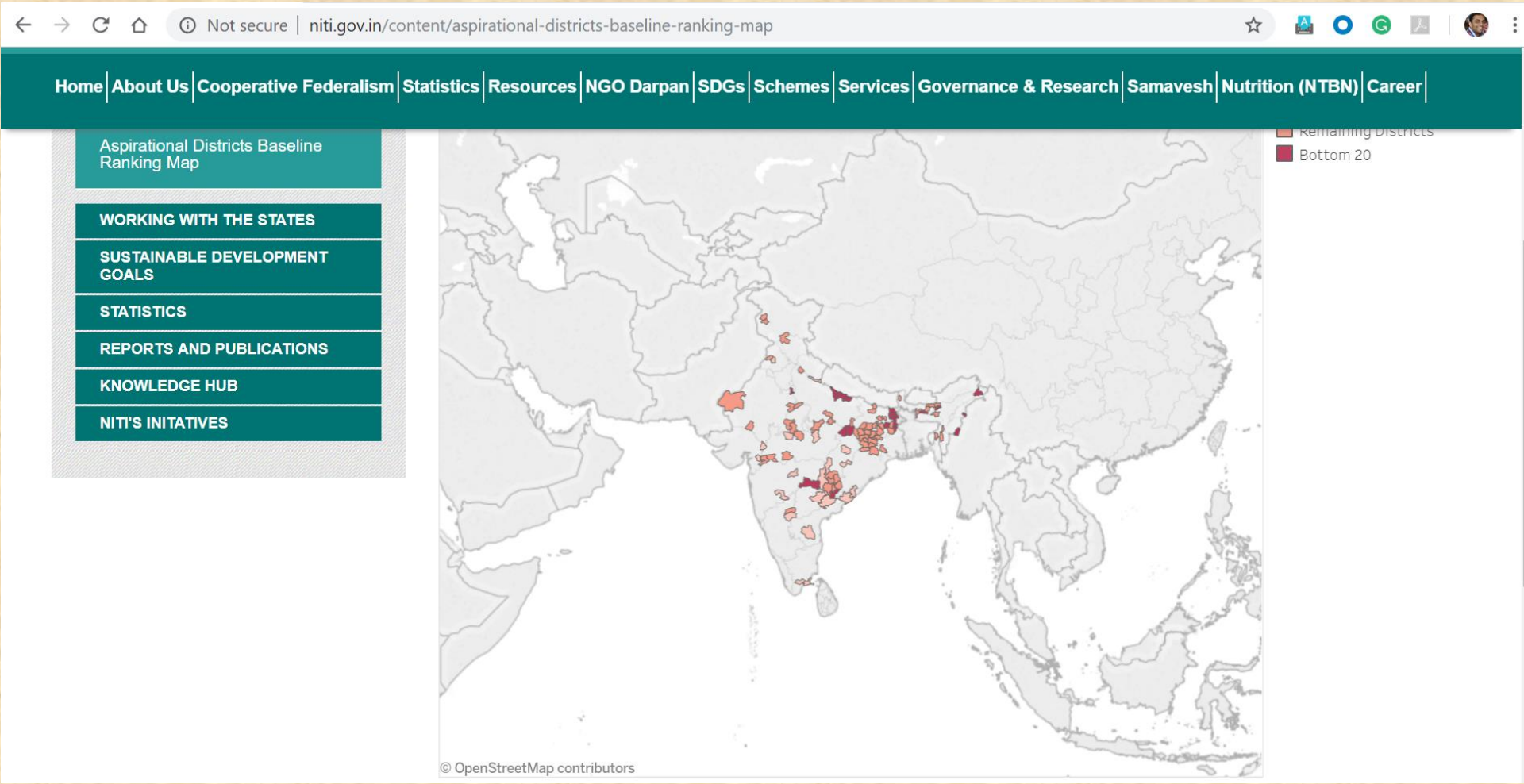
കേരളത്തിന്റെ ഊർജ്ജം

ICFOSS



http://hris.kseb.in/pmumap/

NITI Aayog

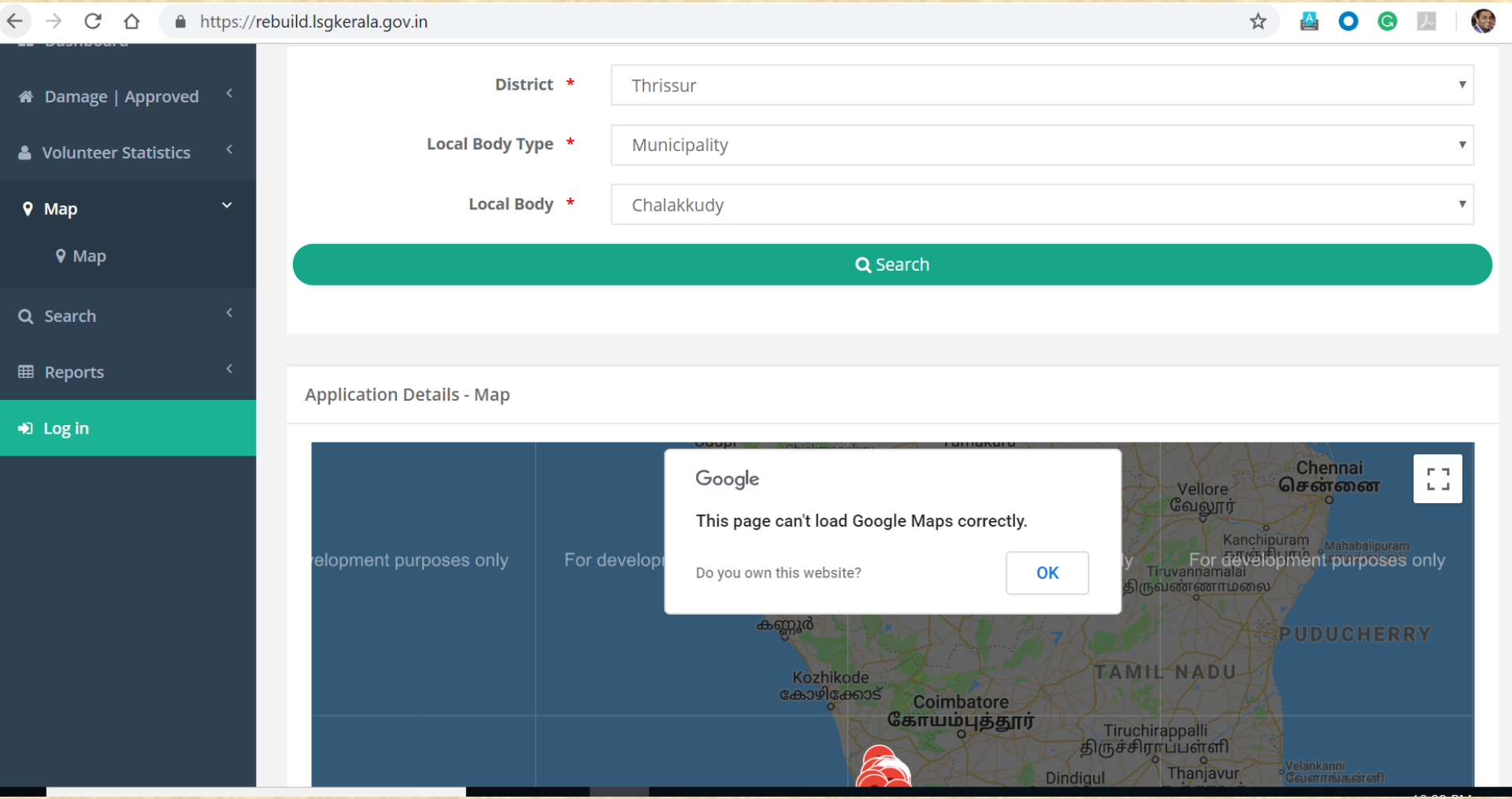


Aspirational Districts Baseline Ranking Map

3D mapping

Not secure | demo.f4map.com/#lat=10.5242837&lon=76.2141108&zoom=18&camera.theta=59.954
Search a place...
3D
Bini
Bank of Baroda
Swaraj Round
Sapna Movie Theater
Children's Library
City Center
CMS Higher Secondary School
Naduvilal Shopping Complex
വടക്കേ ഗോപുരനട
തൃശ്ശൂർ വടക്കുന്നാഥ ക്ഷേത്രം
Vadakkunnathan Devaswom Office
തെക്കേ ഗോപുരനട
Palace Road
Swaraj Round
yanadakkavu Road
m Road
Discover our solutions
50m
F4map © F4
Map data © OpenStreetMap contributors (updated 3 minutes ago)
Credits

“free maps”



https://rebuild.lsgkerala.gov.in/

Kerala Floods 2018
Humanitarian mapping

Humanitarian OpenStreetMap Team

HOT is an international team dedicated to humanitarian action and community development through open mapping.

Project No.	Location	What to map	Mapping status	Validation status
Active projects				
Project 5170	South of Kochi	Roads,Buildings	Doing (43%)	Doing (0%)
Project 4987	Wayanad, Kerala	Roads,Buildings	Doing (21%)	Doing (0%)
Project 5003	Pathanamthitta, Kerala	Roads,Buildings	Doing (5%)	Doing (2%)
Project 5024	Alleppey	Roads	Done (70%)	Done (28%)
Complete/archived projects				
Project 5010	North of Kochi 02	Roads,Buildings	Done (100%)	Doing (33%)
Project 5026	North of Kochi 03	Roads,Buildings	Done (100%)	Doing (66%)
Project 4986	Idukki, Kerala	Roads,Buildings	Done (100%)	Done (21%)
Project 5009	North of Kochi, Kerala	Roads,Buildings	Done (100%)	Done (1%)
Project 5025	Alleppey	Buildings	Done (100 %)	Done (100%)

Kerala Floods 2018
Humanitarian mapping

Humanitarian
OpenStreetMap
Team

India floods Stats
(includes Nagaland and Croog Flood Mapping efforts)

2200 volunteers.

453,421 Total Edits

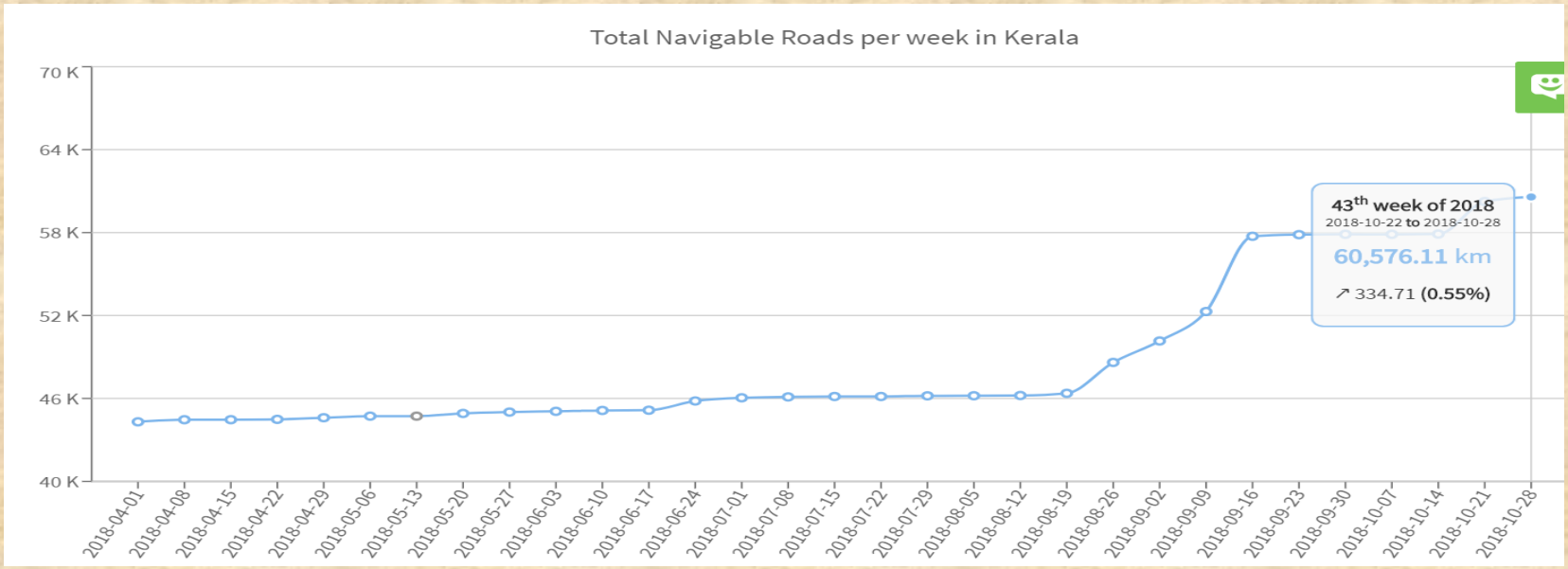
4,26,908 Buildings

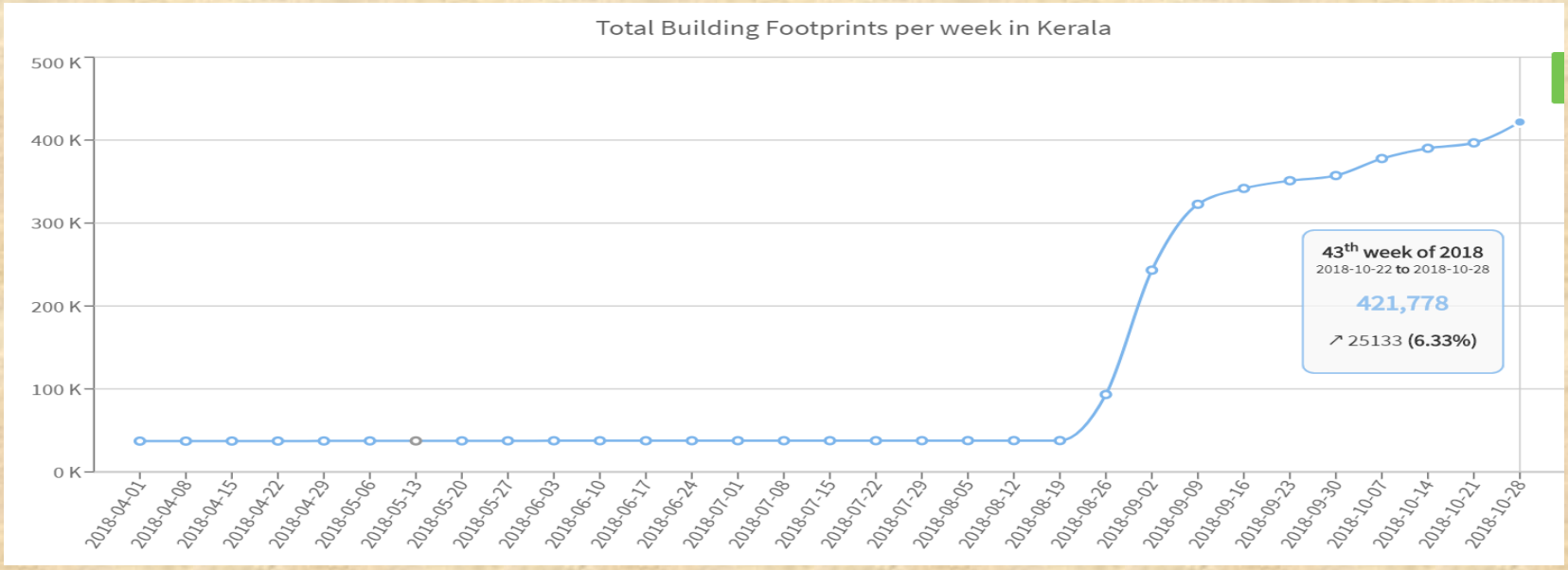
9,453 km Roads

Facebook's
Kerala Road Import via AI/ML

52,369 Total Edits
1,302 Buildings
13,143km Roads
For more details :-
https://wiki.openstreetmap.org/wiki/Kerala_Road_Import

Stats


Total Navigable Roads per week in Kerala
70 K
64 K
58 K
52 K
46 K
40 K
43th week of 2018
2018-10-22 to 2018-10-28
60,576.11 km
↗ 334.71 (0.55%)
2018-04-01
2018-04-08
2018-04-15
2018-04-22
2018-04-29
2018-05-06
2018-05-13
2018-05-20
2018-05-27
2018-06-03
2018-06-10
2018-06-17
2018-06-24
2018-07-01
2018-07-08
2018-07-15
2018-07-22
2018-07-29
2018-08-05
2018-08-12
2018-08-19
2018-08-26
2018-09-02
2018-09-09
2018-09-16
2018-09-23
2018-09-30
2018-10-07
2018-10-14
2018-10-21
2018-10-28


Total Building Footprints per week in Kerala
500 K
400 K
300 K
200 K
100 K
0 K
43th week of 2018
2018-10-22 to 2018-10-28
421,778
↗ 25133 (6.33%)
2018-04-01
2018-04-08
2018-04-15
2018-04-22
2018-04-29
2018-05-06
2018-05-13
2018-05-20
2018-05-27
2018-06-03
2018-06-10
2018-06-17
2018-06-24
2018-07-01
2018-07-08
2018-07-15
2018-07-22
2018-07-29
2018-08-05
2018-08-12
2018-08-19
2018-08-26
2018-09-02
2018-09-09
2018-09-16
2018-09-23
2018-09-30
2018-10-07
2018-10-14
2018-10-21
2018-10-28

Benefits to students

- OSM is relevant to education in geography, mathematics, ecology, community planning, government and information technology (IT).
- Some educators use existing OpenStreetMap data in class projects, while others contribute new data to OpenStreetMap.
- In the process of using OpenStreetMap and contributing data, students also develop IT skills (needed to process data) and gain valuable knowledge in the fields of GIS (geographic information systems), planning and community development.

39 Volunteers,

4,404 Edits

2,799 Buildings

118 km Roads

OpenStreetMap Mapathon

FOSSers VAST

HOT Humanitarian OpenStreetMap Team

Software Freedom Day Sep 15, 2018

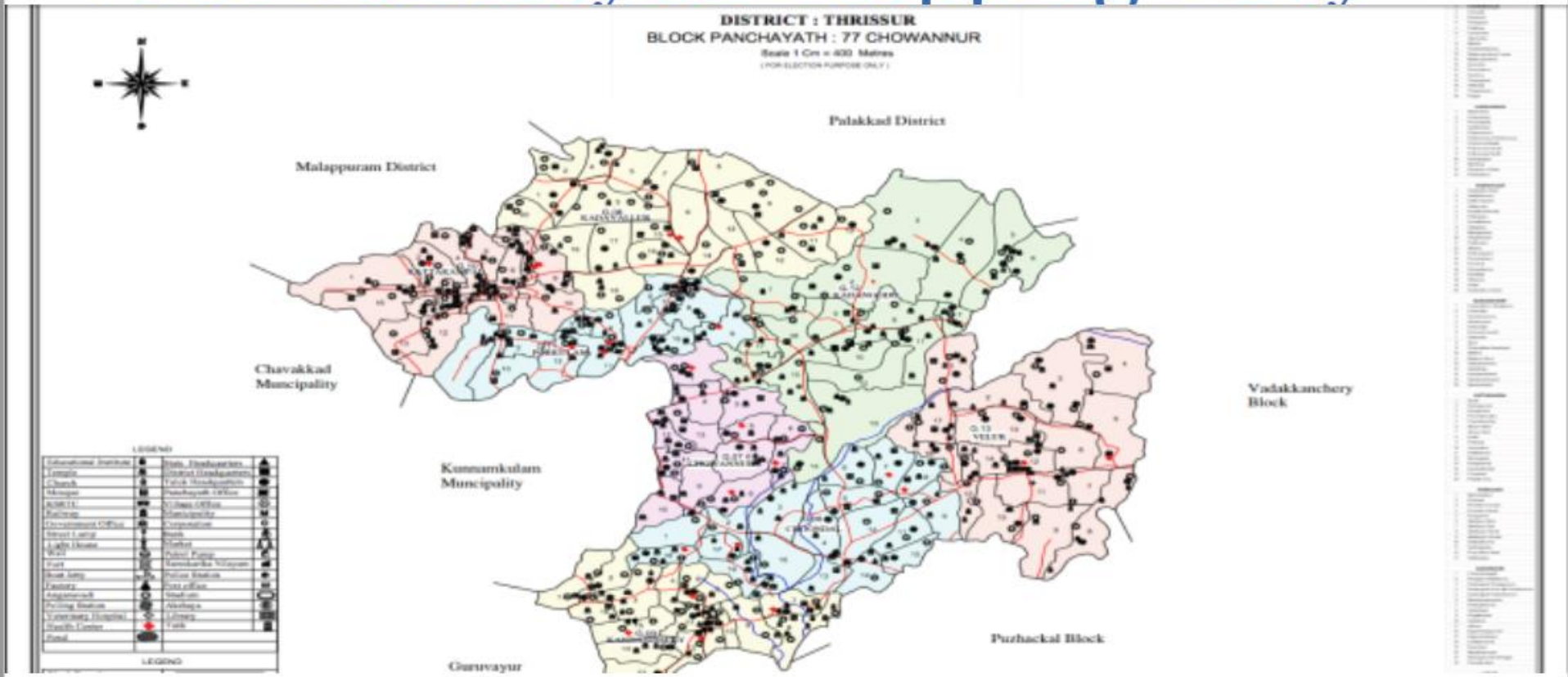
SAVE KOLE kole.org.in RICE IS LIFE

FreeSoftware users group THRISSUR

RIVER RESEARCH CENTRE

Free and Open Source Software Users
(FOSSers Club)
Vidya Academy of Science and Technology
Leaderboard
LEADERBOARD
MAP VIEW
Manoj Karingamadathil

Velur Panchayath Mapping Party



OpenStreetMap workshop at VAST, Thrissur

‘സാങ്കേതിക വിദ്യയുടെ ഗുണം ജനങ്ങളിൽ എത്തിയാലേ ഡിജിറ്റൽ വിപ്ലവം ഉണ്ടാകൂ’

വേലൂർ • സാങ്കേതിക വിദ്യയുടെ പ്രയോജനം സാധാരണക്കാരിൽ എത്തുമ്പോൾ മാത്രമേ രാജ്യത്ത് ഡിജിറ്റൽ വിപ്ലവം യാഥാർഥ്യമാകൂ എന്ന് ഡോ. എ.പി.ജെ.അബ്ദുൽ കലാം സാങ്കേതിക സർവകലാശാല പ്രോ വൈസ് ചാൻസലർ ഡോ. എം.അബ്ദുൽ റഹ്മാൻ പറഞ്ഞു.

നാഷനൽ സർവീസ് സ്കീം (എൻഎസ്എസ്) ടെക്നിക്കൽ സെൽ സംസ്ഥാന തലത്തിൽ നടപ്പിലാക്കുന്ന ‘ഡിജിറ്റലൈസേഷനിലൂടെ തദ്ദേശ ശാക്തീകരണം (എൽഇഡി)’ പദ്ധതിയുടെ പൈലറ്റ് പ്രോജക്ട് വേലൂർ ഗ്രാമപഞ്ചായത്തിൽ നടത്തുന്നതിന്റെ ഉദ്ഘാടനം തലക്കോട്ടുകര വിദ്യാ അക്കാദമി ഓഫ് സയൻസ് ആൻഡ് ടെക്നോളജി കോളജിൽ നിർവഹിക്കുകയായിരുന്നു അദ്ദേഹം. വേലൂർ ഗ്രാമപഞ്ചായത്ത് പ്രസിഡന്റ് ഷേർളി ദിലീപ്കുമാർ അധ്യക്ഷത വഹിച്ചു. എൻഎസ്എസ് ടെക്നിക്കൽ സെൽ സംസ്ഥാന കോ-ഓർഡിനേറ്റർ അബ്ദുൽ ജബ്ബാർ അഹമ്മദ് മുഖ്യ പ്രഭാഷണം നടത്തി.

എൻഎസ്എസ് ടെക്നിക്കൽ സെൽ സംസ്ഥാന തലത്തിൽ നടപ്പിലാക്കുന്ന ഡിജിറ്റലൈസേഷനിലൂടെ തദ്ദേശ ശാക്തീകരണം പദ്ധതിയുടെ പൈലറ്റ് പ്രോജക്ട് വേലൂർ പഞ്ചായത്തിൽ നടത്തുന്നതിന്റെ ഉദ്ഘാടനം ഡോ.എ.പി.ജെ. അബ്ദുൽ കലാം സാങ്കേതിക സർവകലാശാല പ്രോ വൈസ് ചാൻസലർ ഡോ.എം.അബ്ദുൽ റഹ്മാൻ നിർവഹിക്കുന്നു.

വിദ്യാ എൻജിനീയറിങ് കോളജ് പ്രിൻസിപ്പൽ ഡോ. സുധ ബാലഗോപാൽ, പഞ്ചായത്ത് വൈസ് പ്രസിഡന്റ് അബ്ദുൽ റഷീദ്, വാർഡ് മെംബർ എൽസി ഔസേപ്പ്, പഞ്ചായത്ത് സെക്രട്ടറി ടി.പി.കുര്യൻ, വിദ്യാ ഇന്റർനാഷനൽ ചാരിറ്റബിൾ ട്രസ്റ്റ് ഡയറക്ടർ ജി.മോഹനചന്ദ്രൻ, ഡോ. നിസാം റഹ്മാൻ, എൻഎസ്എസ് ജില്ലാ കോ-ഓർഡിനേറ്റർ വി.എം.അരുൺ, മനോജ് കരിങ്ങാമഠത്തിൽ, പ്രോഗ്രാം ഓഫിസർ പി.അശ്വതി എന്നിവർ പ്രസംഗിച്ചു. പദ്ധതി നടത്തിപ്പിന്റെ ഭാഗമായി വിദ്യാ എൻജിനീയറിങ് കോളജിൽ വച്ച് ജിഐഎസ് മാപ്പിങ്ങിനെക്കുറിച്ചും മറ്റു സാങ്കേതിക വിദ്യകളെക്കുറിച്ചും രണ്ടു ദിവസങ്ങളിലായി ക്ലാസുകൾ നടക്കും.

NITC Mapping, 2009

fairness

Benefits for educators

- OpenStreetMap is a real world project that your students participation can make a lasting impact on.
- Students become a part of a multi-cultural, global community that they can both learn from, as well as contribute to.
- OSM is open, not only the map and all its data, but curriculum linked here is available for you to use, change and re-distribute for free.

- http://teachosm.org
- https://www.openschoolmaps.ch/

Data Format

OSM XML data format

- *.osm files
- Nodes
- Ways
- Attributes → Tags (key and value)
- “key=value”
- Relations

Data Format

Nodes

- Coordinate pair (GCM – 7 decimal places)
- Timestamp of last edit, user ID, changeset ID
- Zero or more tags
- Used to map Points of Interest (POI's)

Data Format

Ways

- Two or more nodes connected
- Timestamp of last edit, user ID, changeset ID
- Zero or more tags
- Used for linear features
- If the first and last nodes are identical an area (polygon) is formed

Data Format

Tags

- Key Value pair
- Objects can have multiple tags
- Case insensitive

Identify:

- Attributes
- Different POI's
- Differentiate between circular ways and actual areas.

Data Creation

OSM data can be created via many interfaces and tools

- OSM iD online editor
- JOSM – Offline Java Editor
- QGIS Plugin
- ArcGIS toolbox
- Mobile apps :- Vespucci,StreetComplete,OsmAnd
- ...

Data Download

Data can be downloaded for limited areas

- Overpass API (Query)
- HOT Export Tool
- QGIS Plugin
- PlanetOSM

  http://wiki.openstreetmap.org/wiki/Planet.osm

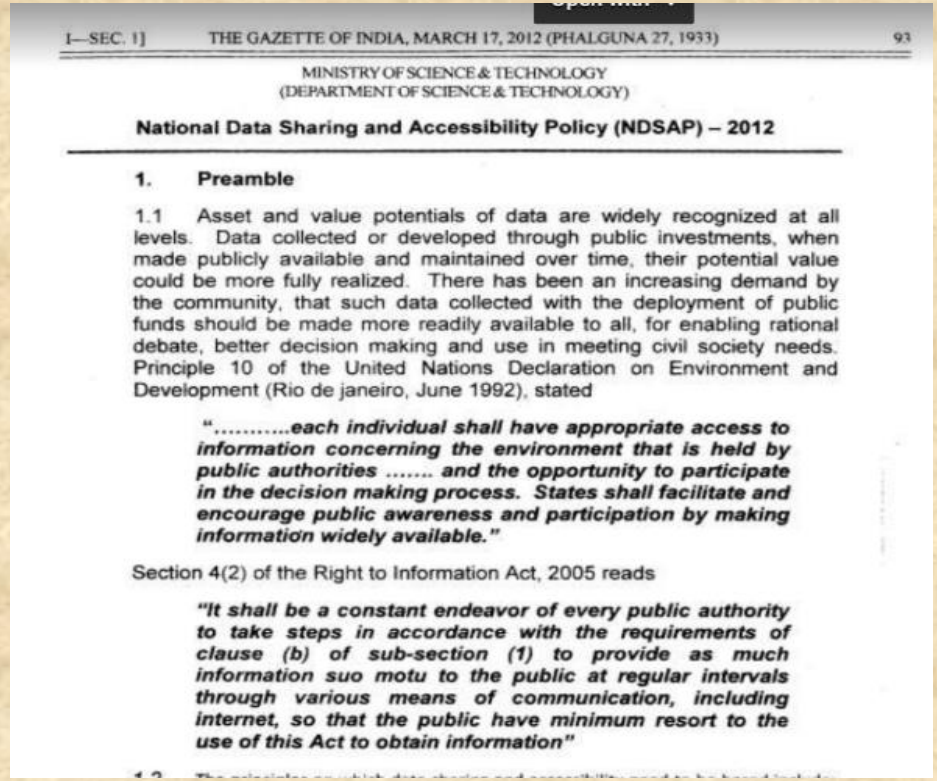
  Allows you to download snapshots of the OSM database

#opendata is the future

#opendata will win

data.gov.in

Open Government Data (OGD) Platform India



I—SEC. 1] THE GAZETTE OF INDIA, MARCH 17, 2012 (PHALGUNA 27, 1933) 93

MINISTRY OF SCIENCE & TECHNOLOGY
(DEPARTMENT OF SCIENCE & TECHNOLOGY)

National Data Sharing and Accessibility Policy (NDSAP) – 2012

1. Preamble

1.1 Asset and value potentials of data are widely recognized at all levels. Data collected or developed through public investments, when made publicly available and maintained over time, their potential value could be more fully realized. There has been an increasing demand by the community, that such data collected with the deployment of public funds should be made more readily available to all, for enabling rational debate, better decision making and use in meeting civil society needs. Principle 10 of the United Nations Declaration on Environment and Development (Rio de janeiro, June 1992), stated

> ***".....each individual shall have appropriate access to information concerning the environment that is held by public authorities ..... and the opportunity to participate in the decision making process. States shall facilitate and encourage public awareness and participation by making information widely available."***

Section 4(2) of the Right to Information Act, 2005 reads

> ***"It shall be a constant endeavor of every public authority to take steps in accordance with the requirements of clause (b) of sub-section (1) to provide as much information suo motu to the public at regular intervals through various means of communication, including internet, so that the public have minimum resort to the use of this Act to obtain information"***

Topics of the most popular open datasets

1		**Police and crime:** Police incidents; jail bookings; police station locations; crime statistics
2		**Transportation:** Taxi licenses; transit data; traffic counts; road infrastructure data; parking data
3		**Emergency calls:** Police, fire, and EMS responses; 911 calls; response times; incident reports
4		**Development:** Commercial developments; housing developments; property data; housing affordability
5		**Building safety:** Building permits; safety permits; certificates of occupancy
6		**Finance:** Revenue; spending; employee salaries; capital budgets; payments
7		**Elections:** Election results; polling locations; campaign finance reports
8		**Businesses and licenses:** Business licenses; liquor licenses; vendor, contract, and procurement data
9		**Inspections and service requests:** Restaurant health inspections; 311 requests; code violations
10		**Education:** Schools information; student health data; after-school programs; library locations

https://data.gov.in/hackathon

amazon
logistics
bing
Uber
mapbox
NASA
WORLDVIEW
WIKIMEDIA

OSM India

Website:- http://openstreetmap.in

Public Mailing List:- https://lists.openstreetmap.org/pipermail/talk-in/

Facebook:- OSM India Facebook group

Twitter:- https://twitter.com/osm_in

Forum:- Indian OpenStreetMap Forum

Github:- https://github.com/osm-in

Resources

The Map
http://www.openstreetmap.org/

Wiki
http://wiki.openstreetmap.org/wiki/Main_Page

Planet OSM
http://wiki.openstreetmap.org/wiki/Planet.osm

Twitter
@openstreetmap

OSM Geography Awareness Week

Nov 11-17, 2018

Teachers, students, community groups, map lovers, in the US and around the world, join together to celebrate geography and make maps with **OpenStreetMap**, the free and openly editable map of the world.

Website:- http://osmgeoweek.org/

OpenStreetMap Demo

https://wiki.openstreetmap.org/wiki/User:Naveenpf/ICSET_2018

Thank you