



LBS with open data for emergency management & disaster response

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ADB x AIT x PASCO x GeoThings



**Applying Space-Based Technology and Information and
Communication Technology to Strengthen Disaster Resilience**



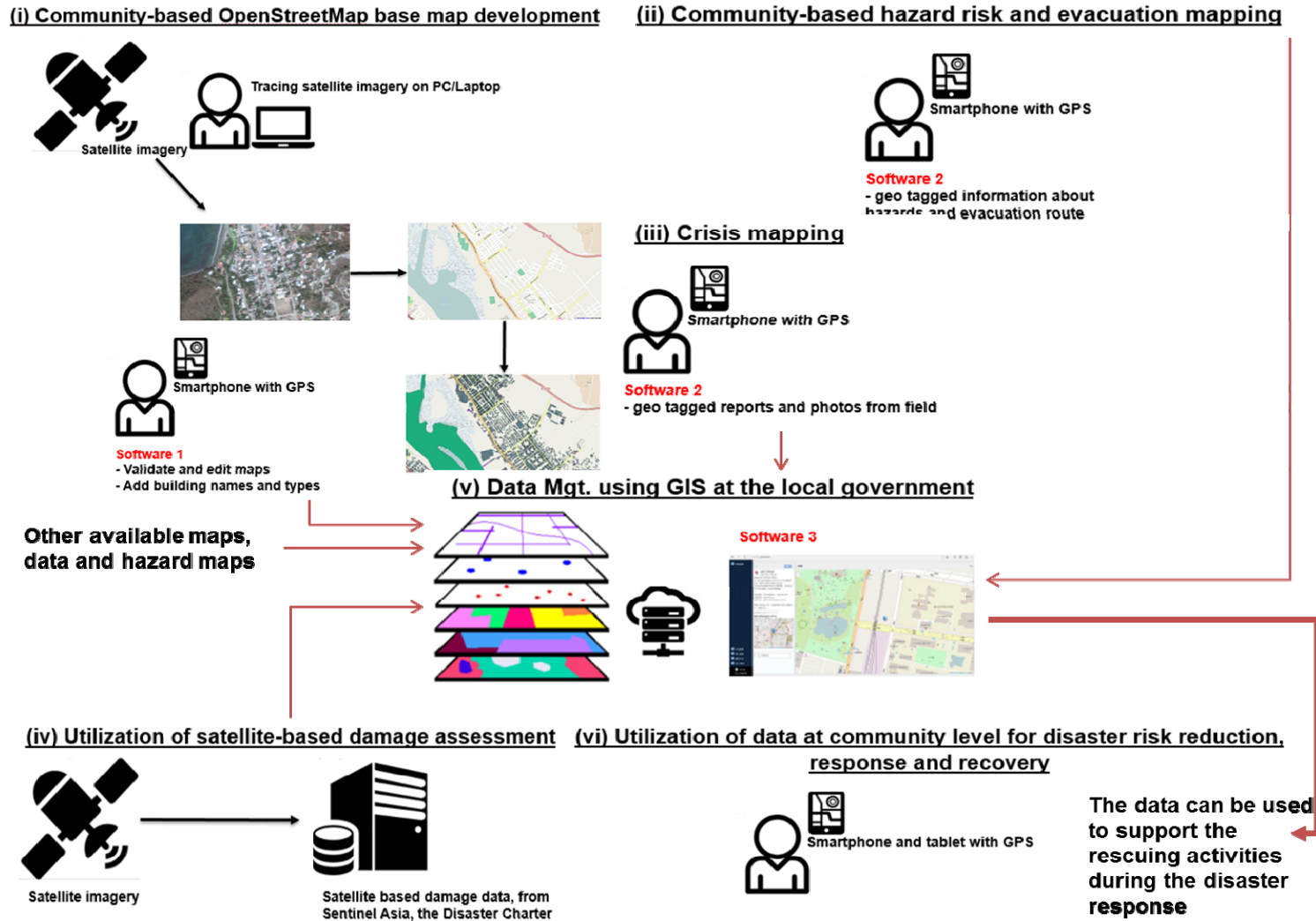
Target Countries for Deployment



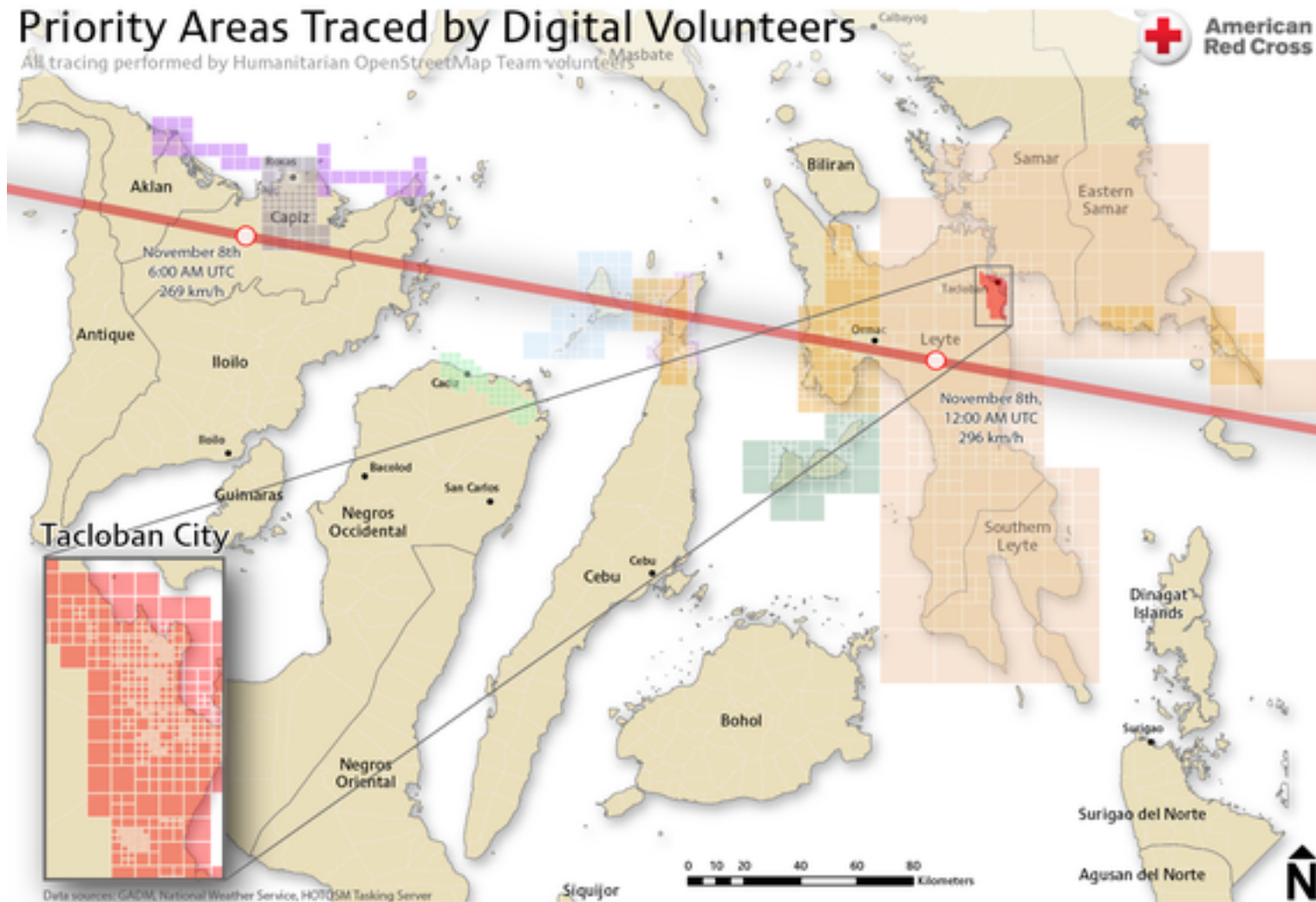
3 Applying Space-Based Technology and Information and Communication Technology to Strengthen Disaster Resilience



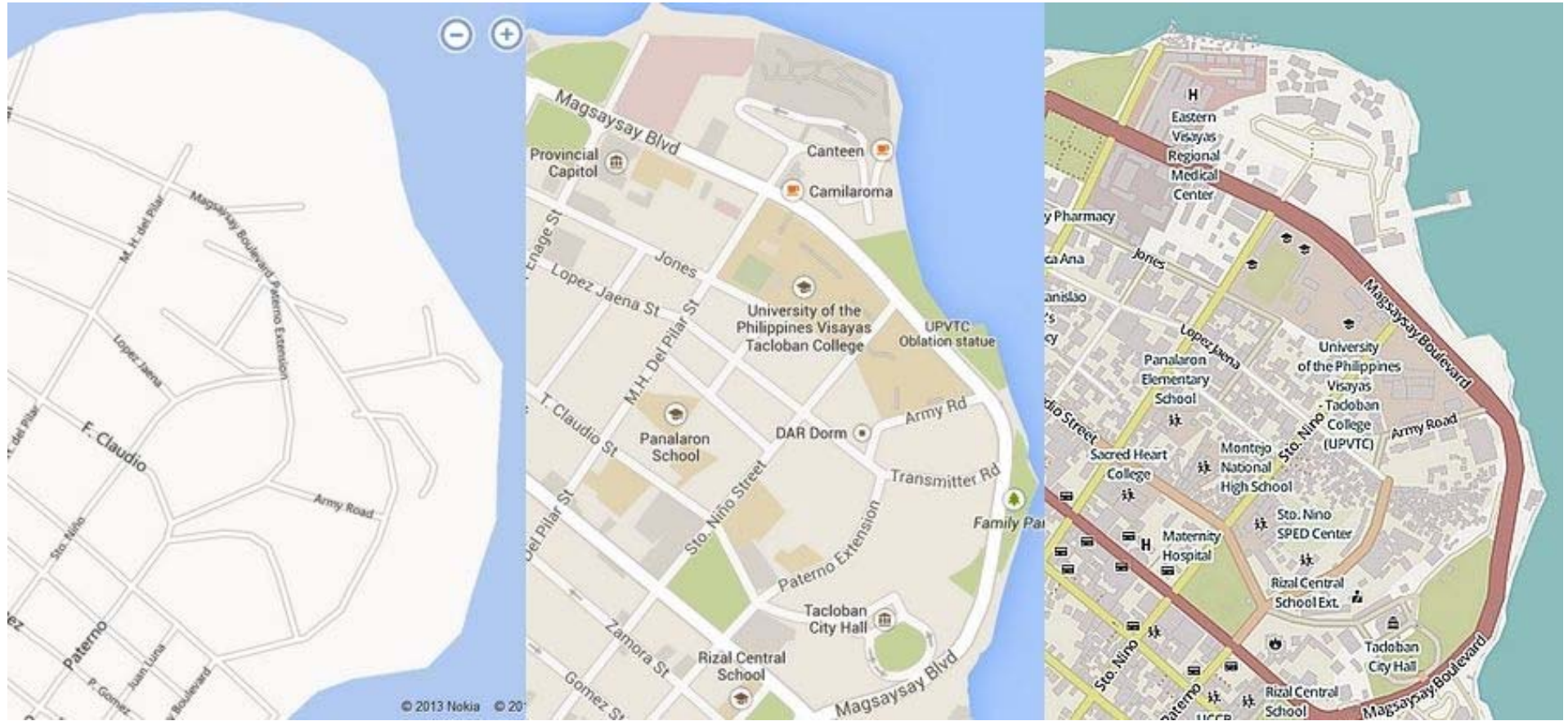
ICT to Strengthen Disaster Resilience



Sometimes, Map is NOT Available



Tacloban Mapping with OpenStreetMap



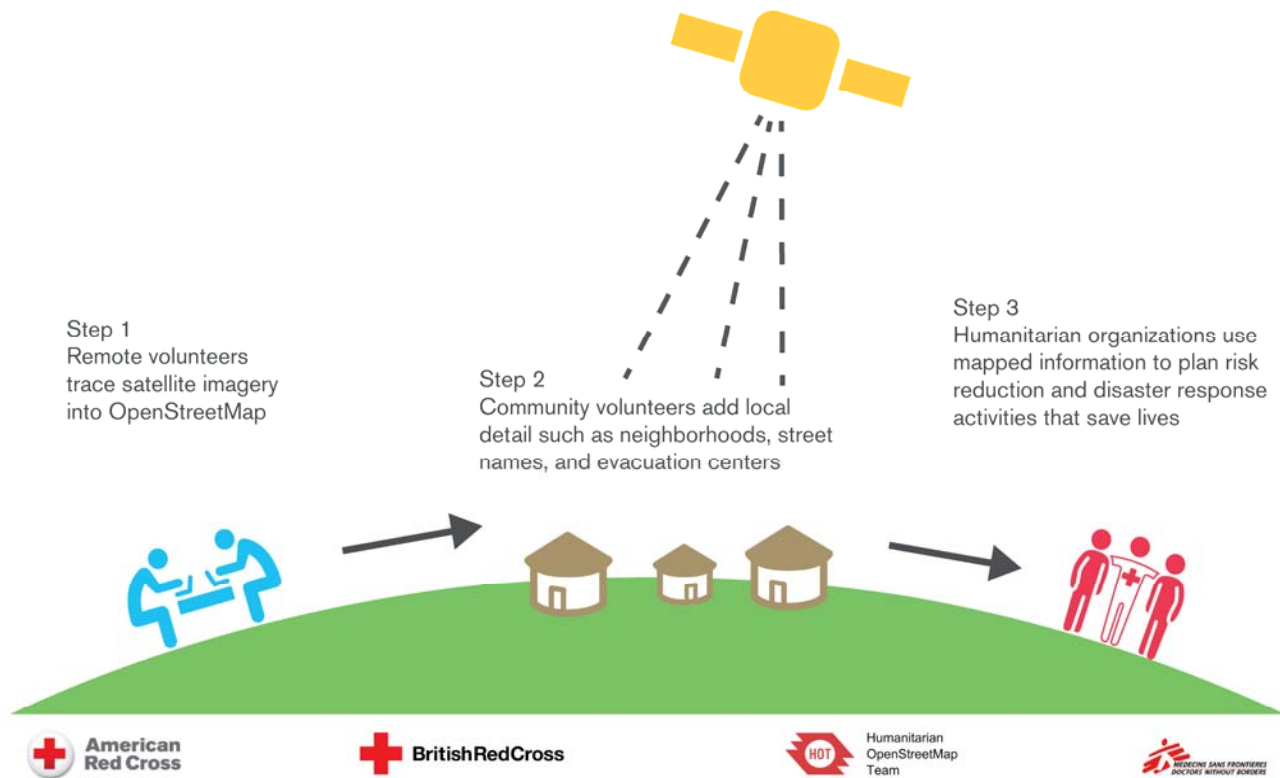
DEATHMETS

Capacity Building with Community



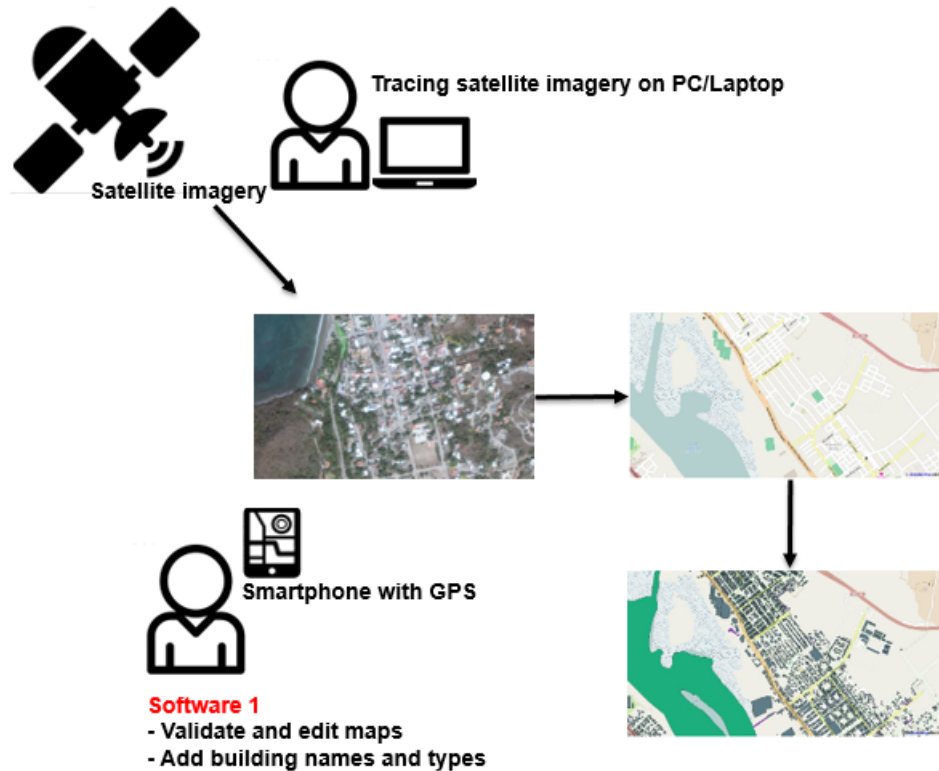
Missing Maps

Putting the World's Vulnerable People on the Map



Satellite Imagery + OSM Community

(i) Community-based OpenStreetMap base map development



(v) Data Mgt. using GIS at the local government



Response to Nepal Earthquake (4W)

Agency Acronym	Agency Full Name	Sector / Clust	Sub Cluster	Type of activity [insert	Activity Description	Number of U	Unit Description	District	DistPCode	VDC	VDCPCode	Status
3692	WaterAid	WaterAid	WASH	Water	Other	Treatment (aquatabs, chlorination)		Bhaktapur	524 2 05 26		#N/A	
3693	WaterAid	WaterAid	WASH	Water	Other	Treatment (aquatabs, chlorination)		Lalitpur	524 2 05 25		#N/A	
3694	WaterAid	WaterAid	WASH	Water	Other	Treatment (aquatabs, chlorination)		Sindhupalchok	524 2 05 23		#N/A	
3695	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Kathmandu	524 2 05 27	Kirtipur Municipality	524 2 05 27 3 002	
3696	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Kathmandu	524 2 05 27	Thankot	524 2 05 27 5 044	
3697	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Kathmandu	524 2 05 27	Tokchandeswari	524 2 05 27 5 026	
3698	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Kathmandu	524 2 05 27	Machchhegaun	524 2 05 27 5 049	
3699	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Kathmandu	524 2 05 27	Kathmandu Metropoli	524 2 05 27 1 001	
3700	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Lalitpur	524 2 05 25	Lalitpur Sub Metro	524 2 05 25 2 001	
3701	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Lalitpur	524 2 05 25	Siddhipur	524 2 05 25 5 031	
3702	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Lalitpur	524 2 05 25	Thaiba	524 2 05 25 5 036	
3703	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Lalitpur	524 2 05 25	Khokana	524 2 05 25 5 034	
3704	WaterAid	WaterAid	WASH	Others	Other	WASH Assessment		Lalitpur	524 2 05 25	Thoco	524 2 05 25 5 039	
3705	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Lalitpur	524 2 05 25	Camps at Jawalakhel	#N/A	
3706	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Lalitpur	524 2 05 25	Khokana	524 2 05 25 5 034	
3707	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Kathmandu	524 2 05 27	Senkhu	#N/A	
3708	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Lalitpur	524 2 05 25	Lunhu	524 2 05 25 5 029	
3709	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Lalitpur	524 2 05 25	Nakhu prison	#N/A	
3710	WHO	World Health Organization	WASH	Water	Distribution Goods/Service	Emergency water distribution		Lalitpur	524 2 05 25	Lele	524 2 05 25 5 004	
3711	WVI	World Vision	WASH	Sanitation	Other	Installation of emergency toilets with handwa	4	Bhaktapur	524 2 05 26	Bhaktapur Municipali	524 2 05 26 5 001	Completed
3712	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	501	Sindhuli	524 2 04 20	Ratanchar	524 2 04 20 5 026	Planned
3713	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	496	Sindhuli	524 2 04 20	Baseshwar	524 2 04 20 5 023	Planned
3714	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	674	Sindhupalchok	524 2 05 23	Gumba	524 2 05 23 5 057	Planned
3715	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	705	Sindhupalchok	524 2 05 23	Baramchae	524 2 05 23 5 053	Planned
3716	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	425	Lamjung	524 3 07 37	Bahundanda	524 3 07 37 5 003	Planned
3717	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	282	Lamjung	524 3 07 37	Dhodeini	524 3 07 37 5 012	Planned
3718	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	325	Lamjung	524 3 07 37	Gauda	524 3 07 37 5 025	Planned
3719	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	430	Lamjung	524 3 07 37	Pachok	524 3 07 37 5 014	Planned
3720	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	2416	Bhaktapur	524 2 05 26		#N/A	Planned
3721	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	2416	Lalitpur	524 2 05 25		#N/A	Planned
3722	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	2416	Kathmandu	524 2 05 27		#N/A	Planned
3723	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	5436	Gorkha	524 3 07 36		#N/A	Planned
3724	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	3624	Lamjung	524 3 07 37		#N/A	Planned
3725	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	4228	Sindhuli	524 2 04 20		#N/A	Planned
3726	WVI	World Vision	WASH	Hygiene	Distribution Goods/Service	Hygiene kit distribution	3624	Sindhupalchok	524 2 05 23		#N/A	Planned
3727	MI	Malteser International	Health	Health	Logistical support	Type Health	Logistical support	Sindhupalchowk	524 2 05 23		#NAME?	Planned
3728	MI	Malteser International	Health	Health	Essential drugs and medic	Type Health	Logistical support	Sindhupalchowk	524 2 05 23		#NAME?	Planned
3729	MI	Malteser International	Health	Health	Mobile/field clinical servi	Type Health	Logistical support	Sindhupalchowk	524 2 05 23		#NAME?	Planned
3730	Humedica	Humedica	Health	Health	Essential drugs and medic	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Jalbare	524 2 05 23 5 050	Ongoing
3731	Humedica	Humedica	Health	Health	Mobile/field clinical servi	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Jalbare	524 2 05 23 5 050	Ongoing
3732	Humedica	Humedica	Health	Health	Health services managem	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Jalbare	524 2 05 23 5 050	Ongoing
3733		Heart to Heart International	Health	Health	Health Logistical support	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Thapalkot	524 2 05 23 5 068	Ongoing
3734		Heart to Heart International	Health	Health	Essential drugs and medic	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Thapalkot	524 2 05 23 5 068	Ongoing
3735		Heart to Heart International	Health	Health	Mobile/field clinical servi	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Thapalkot	524 2 05 23 5 068	Ongoing
3736		Heart to Heart International	Health	Health	Mental health	Type Health	Logistical support	Sindhupalchowk	524 2 05 23	Thapalkot	524 2 05 23 5 068	Ongoing
3737		Japan Ground Self Defense Force	Health	Health	Mobile/field clinical services			Kathmandu	524 2 05 27		#NAME?	Ongoing

332 Organizations in Nepal for the response to Earthquake
Over 5000 activities are recorded in excel file



示警介紹



颱風警報



地震報告



豪大雨特報



海嘯資訊



淹水警訊



土石流警戒



河川水位警戒



水庫洩洪警戒



公路封閉警戒



停班停課訊息



臺鐵營運
異常警示



高鐵營運
異常警示

Various Organizations (NGOs/NPOs)

Weather Bureau

Fire Department

Police Department

Directorate General of Highway

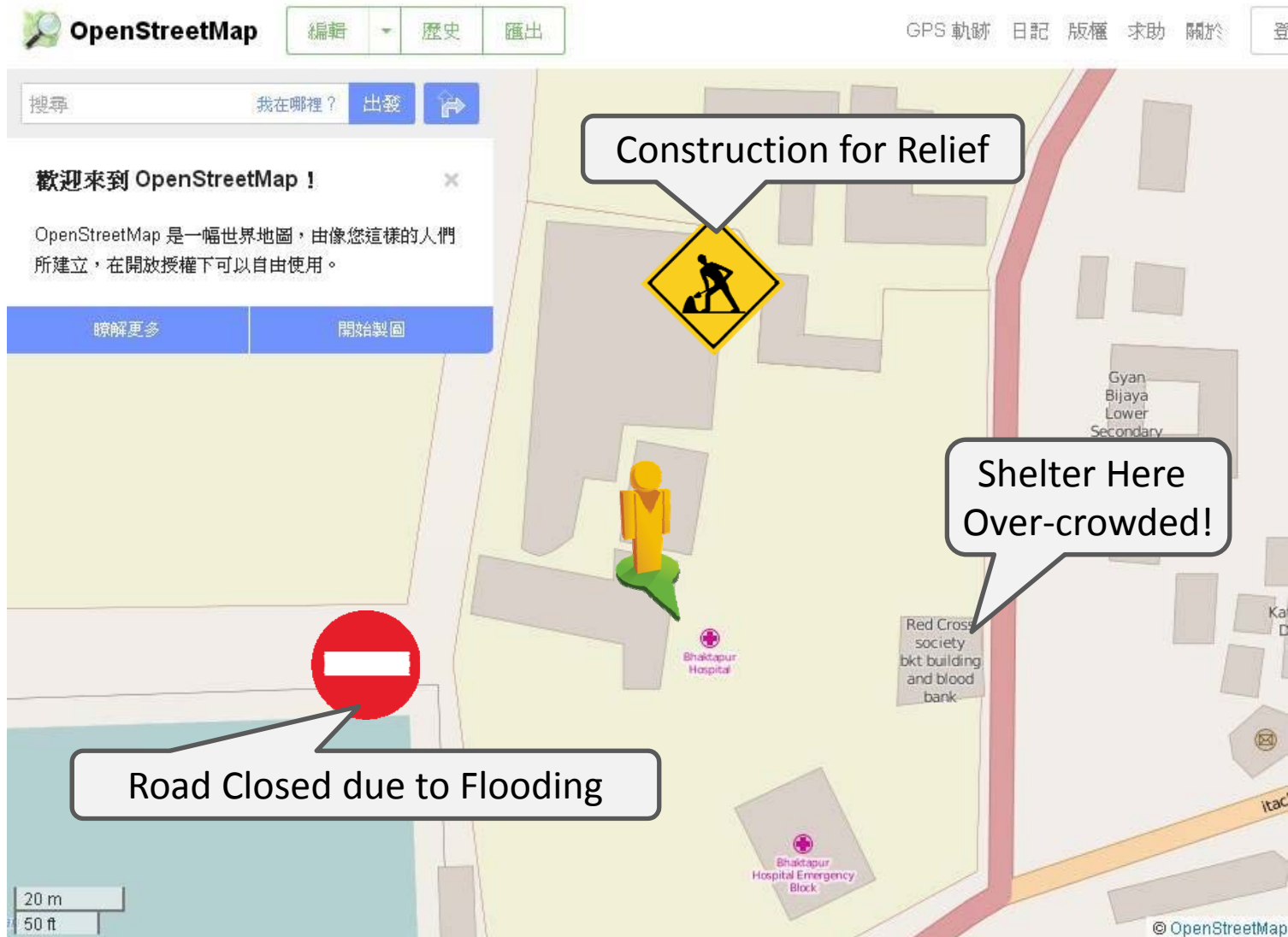
Water Resource Agency

Soil and Water Conservation Bureau

Disaster Information came from Various Offices



GIS-based Disaster Information Platform



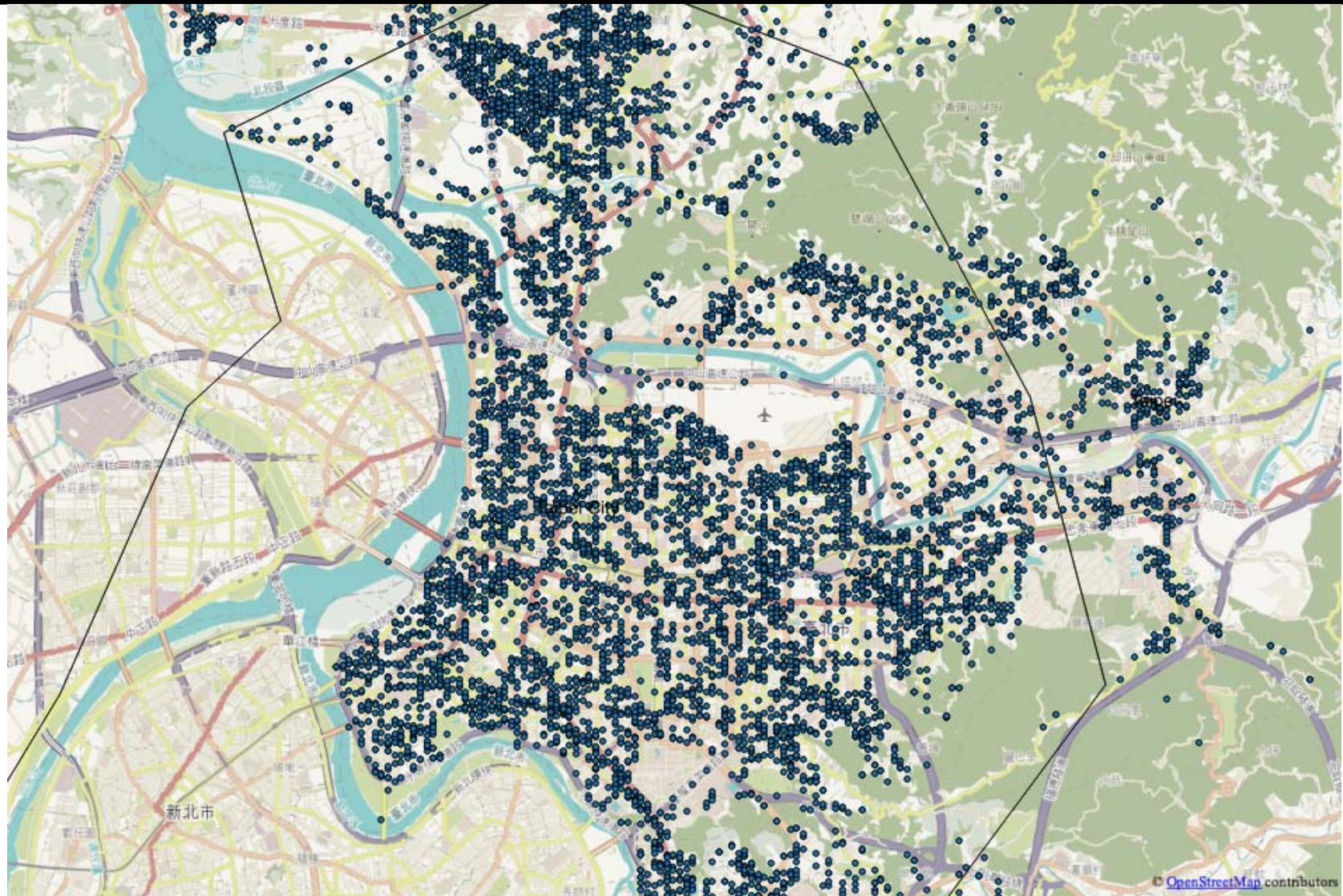
G-SPASE x GeoThings



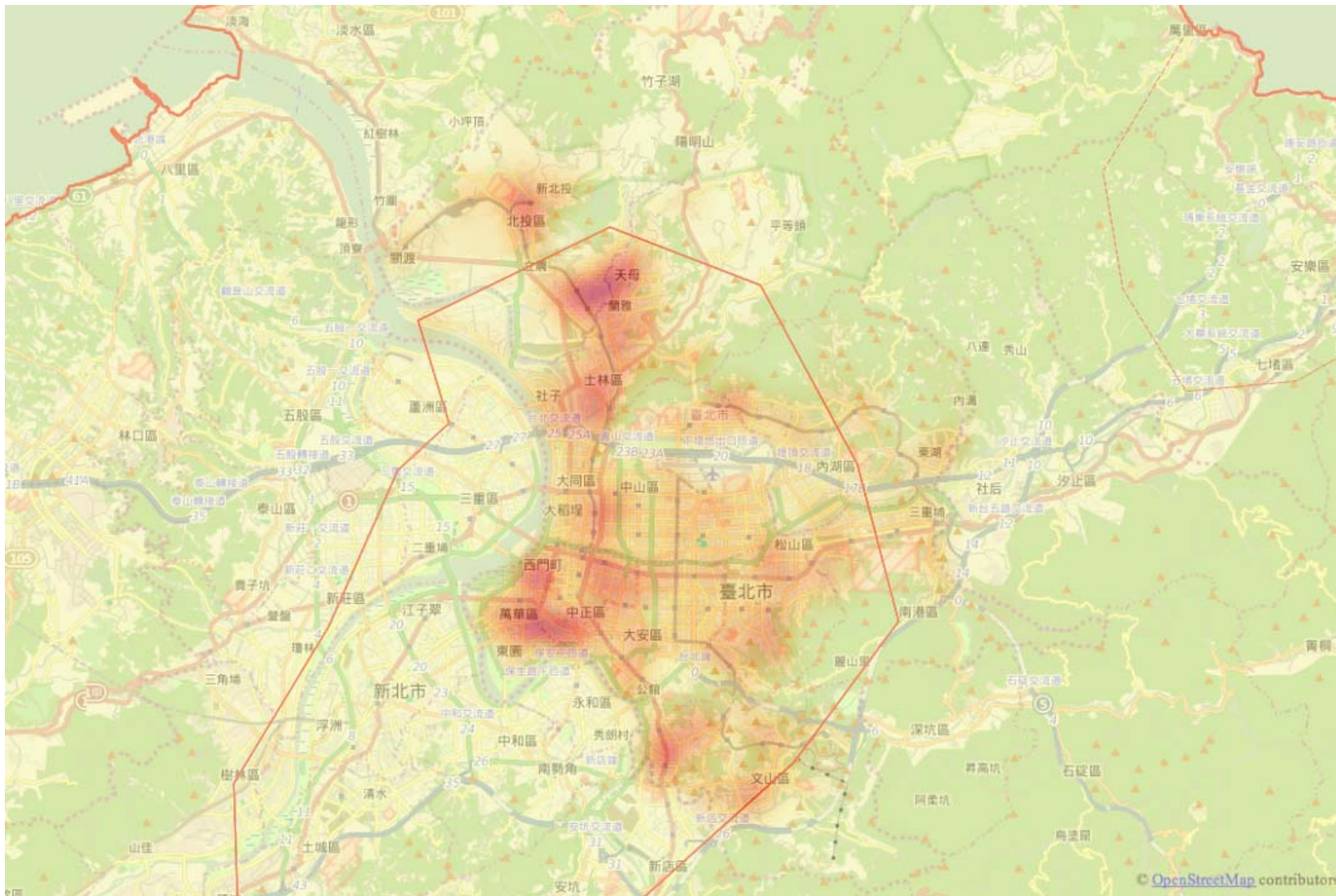
- **Kentaro Kuwata** from University of Tokyo
- Visualize Dengue fever in Taiwan with QGIS
- GeoThings extend it for Typhoon response



10K+ Reports for Typhoon Soudelor in Taipei



Tree Downs in Taipei after Typhoon



Volunteer Matching Platform



志工

物資

品牌館

輸入關鍵字或活動名稱

登入

微樂志工
最有行動力的公益媒合平台

手機下載微樂志工APP
24小時愛心不停歇

做志工 捐物資 捐款

熱門排行

活動

徵文比賽評比人員
「志愛長安，歡樂同行」--
家庭關懷訪視志工

機構

社團法人中華民國荒野保
財團法人天下雜誌教育基
財團法人公共電視文化事

所有時間 志工類別 地區分類 所有期間

2015 VYA 西遊記·歲末篇
12/19 13:30 @ 台北青島路
2015/12/27 ★國際工作營★人

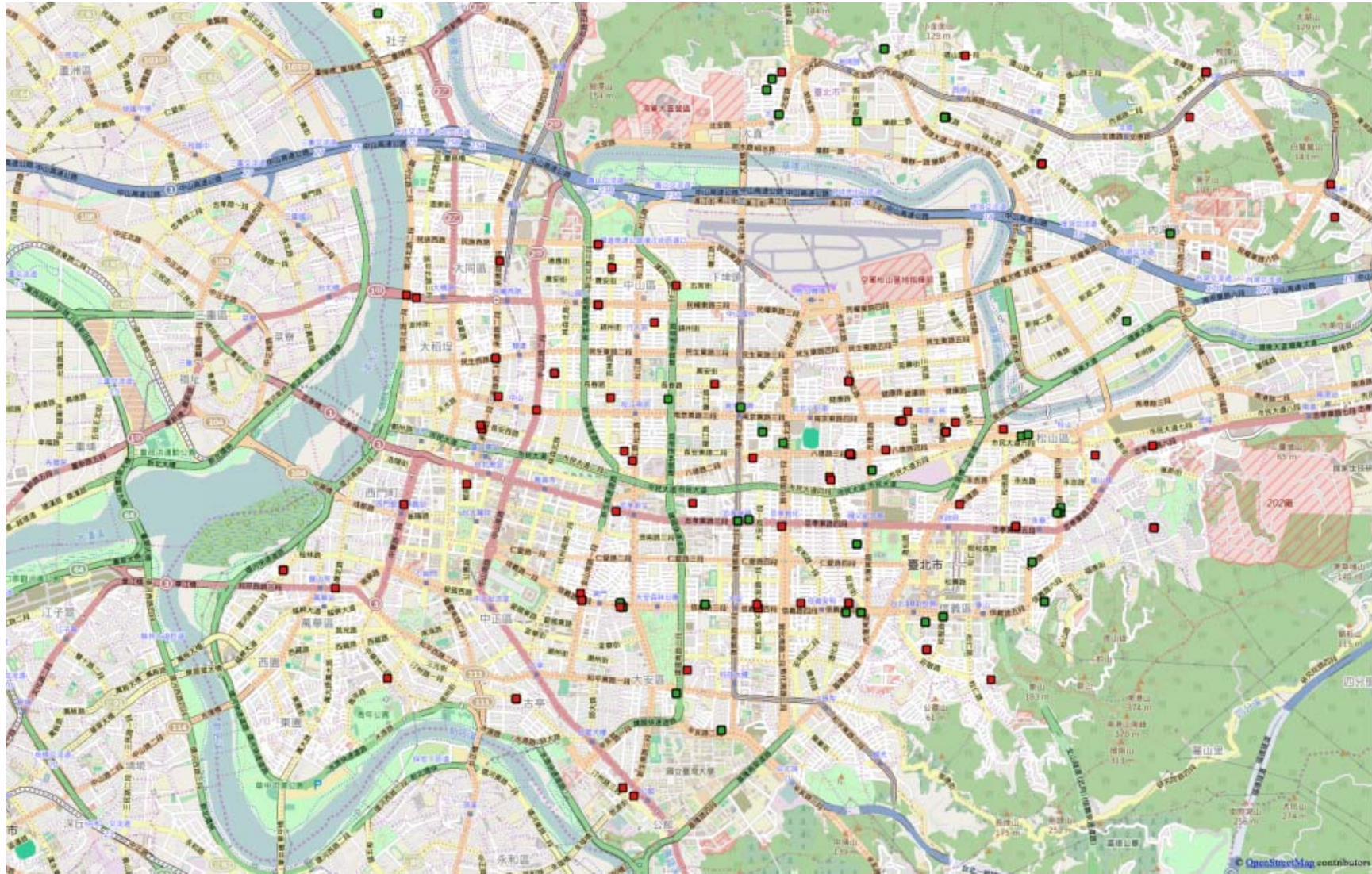
甘霖單車送餐活動
2015-12-19 倒數 36 天

志工招募

志工招募



Dangerous Billboards after Typhoon



Crowdsourcing for Disaster Information

(ii) Community-based hazard risk and evacuation mapping



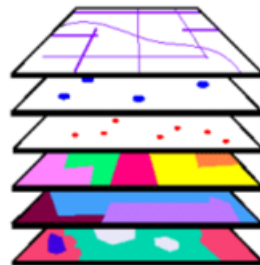
Software 2
- geo tagged information about hazards and evacuation route

(iii) Crisis mapping

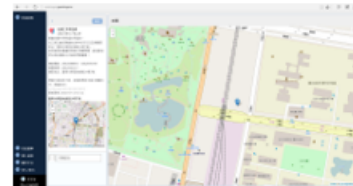


Software 2
- geo tagged reports and photos from field

(v) Data Mgt. using GIS at the local government



Software 3



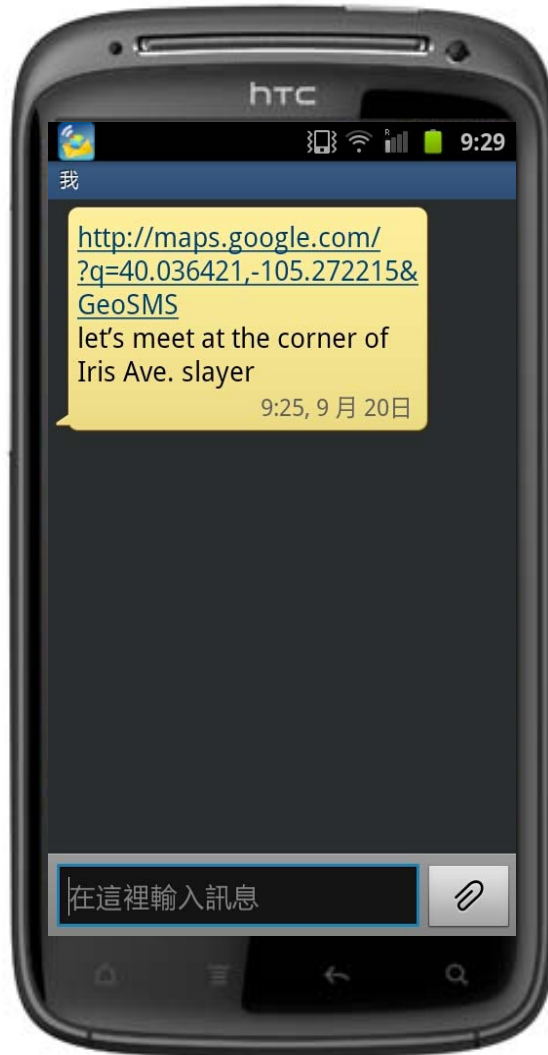
SMS works with Weak Signal





Open GeoSMS

Something about Open GeoSMS



- Location-tagged SMS
- Work simply with SMS infrastructure
- Applied to Commercial and Humanitarian Market

Open GeoSMS for Roadside Assistance



Open GeoSMS with Sahana



[Login/Register](#) | [Preferences](#) | [Help/Guide](#) | [About Trac](#) | [Register](#)

[Wiki](#) | [Timeline](#) | [Roadmap](#) | [View Tickets](#) | [Search](#)

wiki: [UserGuidelines](#) / [Messaging](#) / [Parser](#)

[Up](#) | [Start Page](#) | [Index](#) | [History](#)

MESSAGE PARSING USER GUIDELINES

Last modified 13 months ago

SETTING UP A TWILIO ACCOUNT

1. Register for an account on <http://twilio.com>. Click on the **Get Started** button to get a free account.
2. Verify your mobile phone number. Remember you will only be able to send free outbound messages to verified numbers only.
3. Twilio will provide you with a free Incoming Number. Keep the number safe with you. Click on **Get Started**.
4. Now, click on **Go to My Dashboard**.
5. The Dashboard will display the **ACCOUNT SID** and **AUTH TOKEN**. These will be used to configure your settings on Eden.

Table of Contents

[Message Parsing User Guidelines](#)

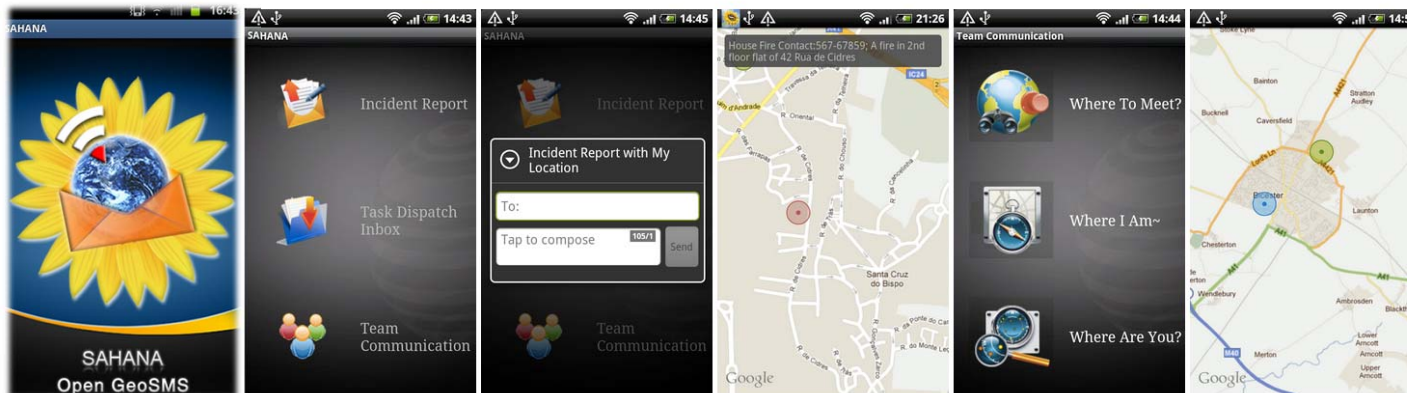
[Setting up a Twilio Account](#)

[Setting up Twilio on Eden](#)

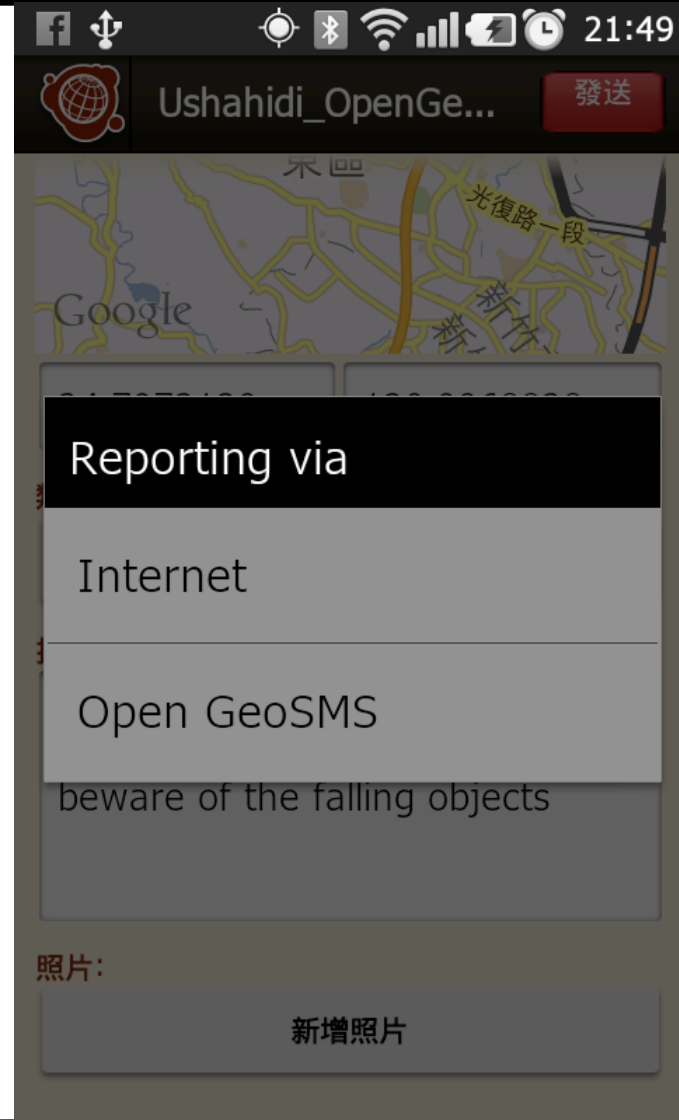
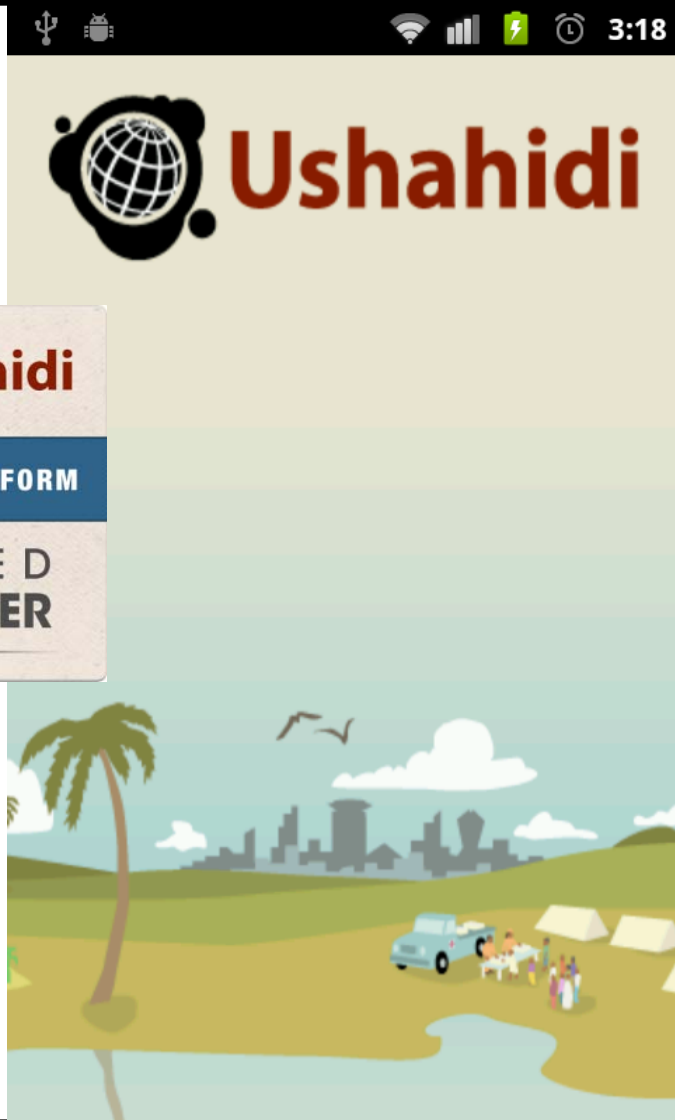
[Sahana Android Client for Reporting Incidents](#)

[Responding to Deployment Requests \(IRS Dispatch\)](#)

[See Also](#)



Open GeoSMS with Ushahidi



QuakeMap.org with Ushahidi 2015

HOME REPORTS SUBMIT A REPORT GET ALERTS ABOUT WHO'S DOING WHAT WHERE

Filter Reports By Layers How to Report ?

Scale = 1 : 2M

Official & mainstream news

TITLE	SOURCE	DATE
The Building Act, 2055	Nepal Earthquak...	May 16 2015
Recommendation for Update of Nepal National...	Nepal Farthruak	May 16 2015

Reports

TITLE	LOCATION	DATE
Houses destroyed in Katteldanda, Gorkha...	Manakamana, Gandaki, Western Region, Nepal	May 19 2015



ICT to Strengthen Disaster Resilience

(i) Community-based OpenStreetMap base map development (ii) Community-based hazard risk and evacuation mapping



Software 2
- geo tagged information about hazards and evacuation route



(iii) Crisis mapping



Software 2
- geo tagged reports and photos from field

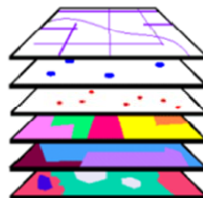


Software 1
- Validate and edit maps
- Add building names and types



(v) Data Mgt. using GIS at the local government

Other available maps, data and hazard maps



Software 3



(iv) Utilization of satellite-based damage assessment (vi) Utilization of data at community level for disaster risk reduction, response and recovery



Satellite based damage data, from Sentinel Asia, the Disaster Charter



The data can be used to support the rescuing activities during the disaster response



geoBingAn (究平安)

HeiAn 平安, Disaster and Emergency Information Coordination Platform



With the MOU between National Institute of Information and Communication Technology (NICT, Japan) and Industrial Technology Research Institute (ITRI, Taiwan), the first joint collaboration project start with the first spin-off social enterprise, GeoThings 究心公益科技, from ITRI.

HeiAn (平安) is a crowdsourcing-based disaster information coordination platform for NGOs to get the latest status and request. It also allows NGOs to know other organizations activities and can dispatch task with location-tagged SMS. Resource management and coordination will be the next major feature to be delivered on HeiAn. With the mission and vision of a social enterprise, GeoThings will keep working on humanitarian ICT for the support of international disaster response activities!



Features:

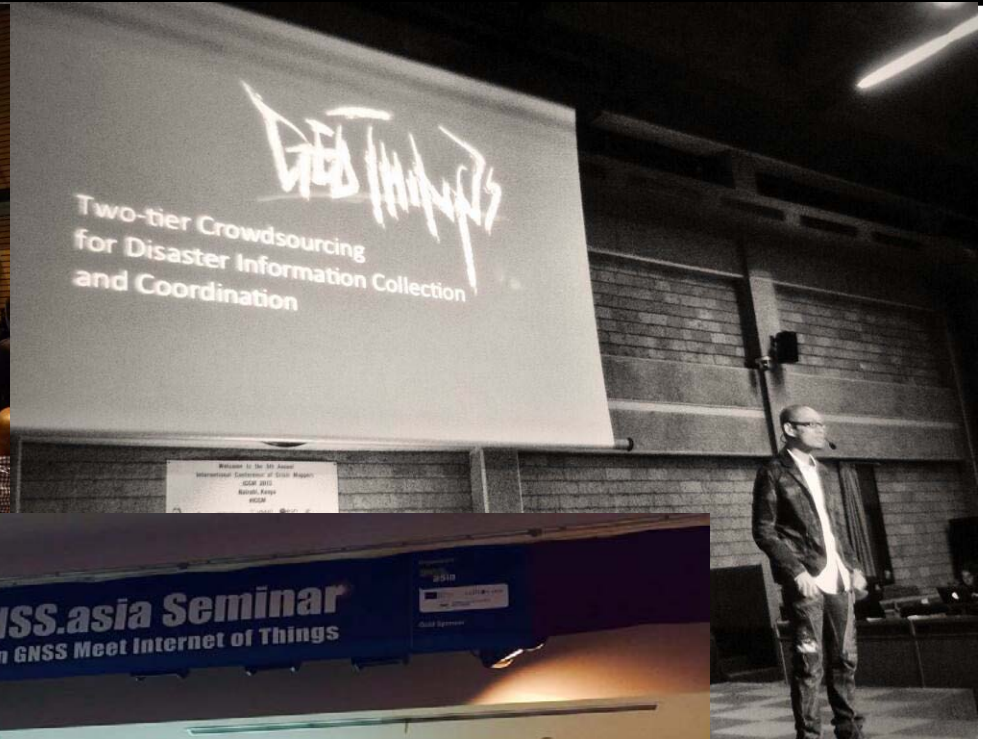
- Incident Report
- Integrated Disaster Information
- Data Filter
- Task Dispatch and Management
- Team/Organization Management
- Open GeoSMS support

Future Features:

- OSM Mapping Tool
- Advanced Visualization
- UAV Assistant



GeoThings in UN, WB, and GNSS





Now also looking for
Horizon 2020 Partners





Harmonize the Needs and Contributions

GeoThings, *the* Humanitarian ICT