



NATIONAL DISASTER MANAGEMENT OFFICE



Drive+

Strengthening the Disaster Resilience with ICT based EOC, geoBingAn PacWave2018 and World Tsunami Awareness Day 2019 as Practice

National Disaster Management Office, Fiji

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UNESCO Intergovernmental Oceanographic Commission

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GeoThings Inc.

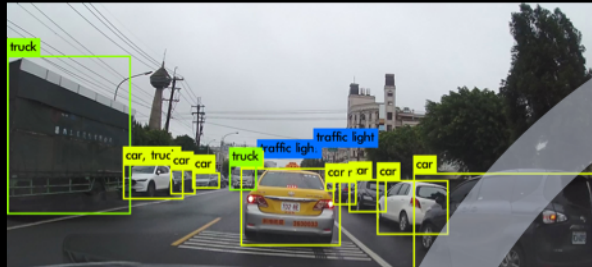
Kuo-Yu slayer Chuang

About GeoThings Inc.

- Standard Editor of Open Geospatial Consortium (**OGC**) and International Telecommunication Union (**ITU**) for Open GeoSMS and Q.3615 (2015)
- Contracted by **ADB** on TA8884 for Armenia, Bangladesh, Philippines, and Fiji (2016 - 2017)
- Was the board director of **HOT** (Humanitarian OSM Team) (2017)
- Project funded by **Austrian FFG** on QuinJunSAT Tasked Crowdsourcing project for post disaster assessment (2017 - 2018)
- Product deployed for National Tsunami Drill and Response of **Fiji** by NDMO since 2017
- Signed MOU with **ADRC** (Asian Disaster Reduction Center) for Disaster Risk Reduction (DRR) Cooperation using GeoThings' ICT product (2018)
- Member of **UN GGIM** PSN/AP/Disaster-WG and **UN Open GIS** initiative



ICT-based Emergency Operating Center, geoBingAn



Infrastructure Survey and Recognition



Town Watching



Field Validation



Situation Desk with IoT

powered by 
geoBingAn
Disaster Information
Collection & Coordination



Evacuation Planning



Response Center



Shelter Management



Crisis Mapping

Disaster
Management

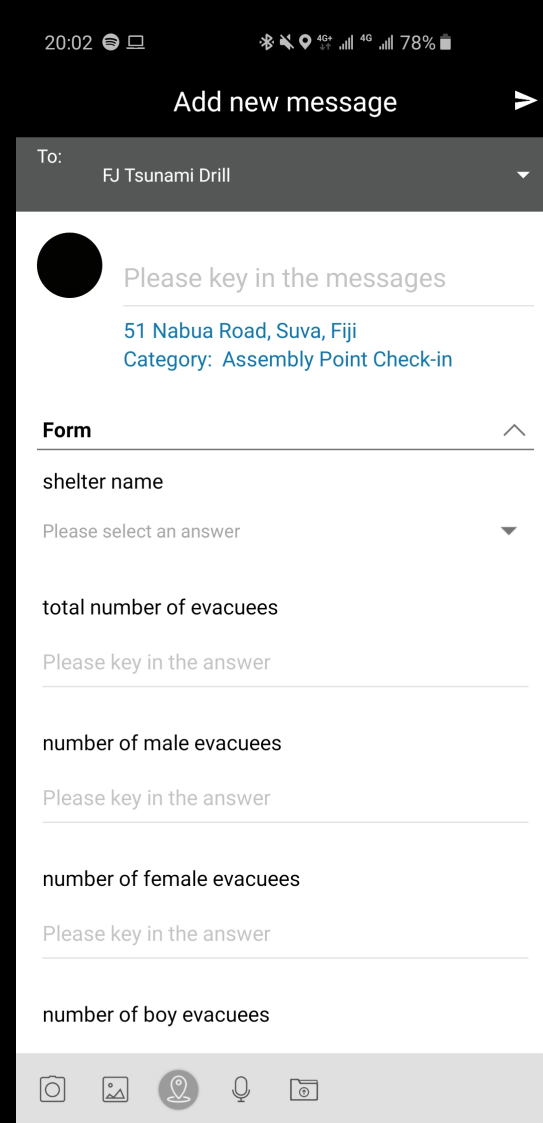
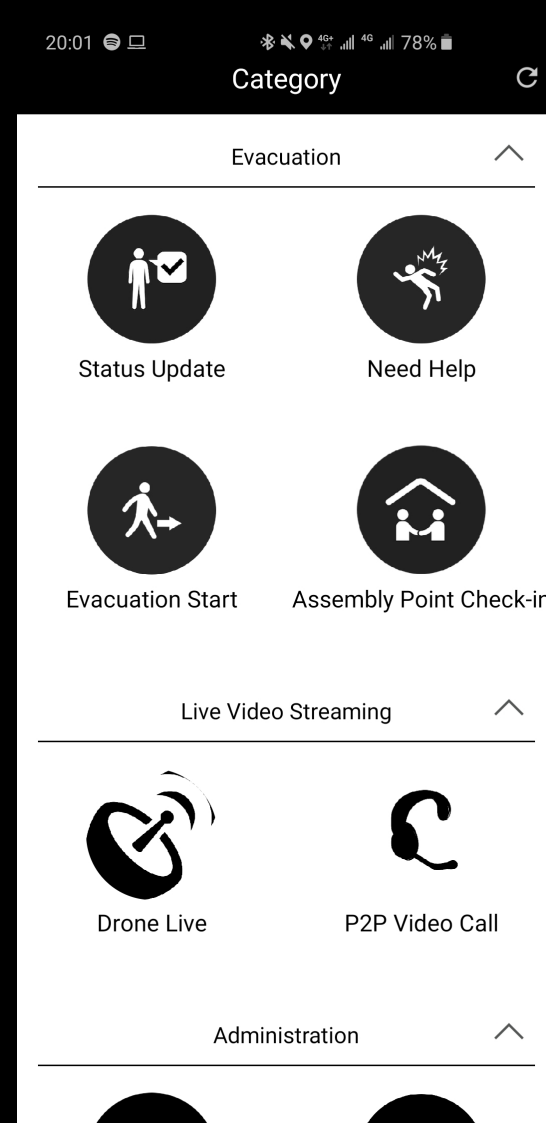
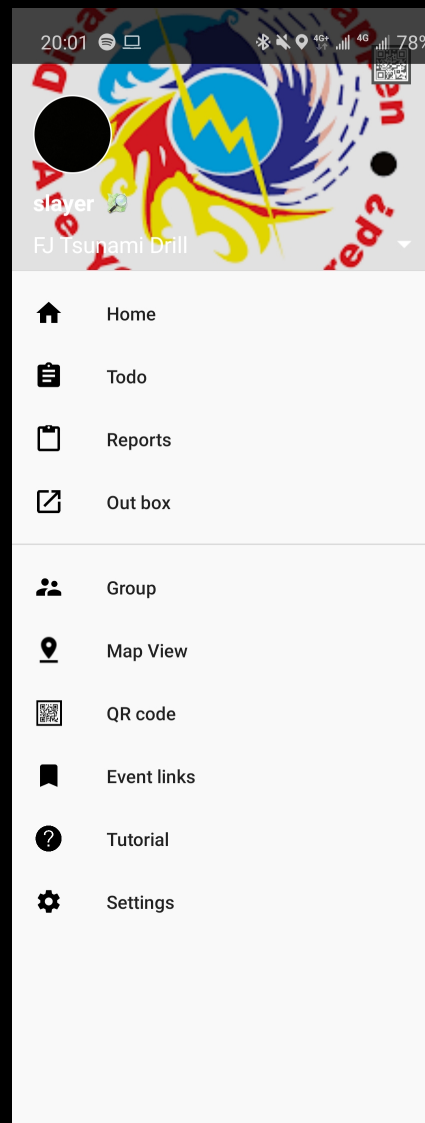
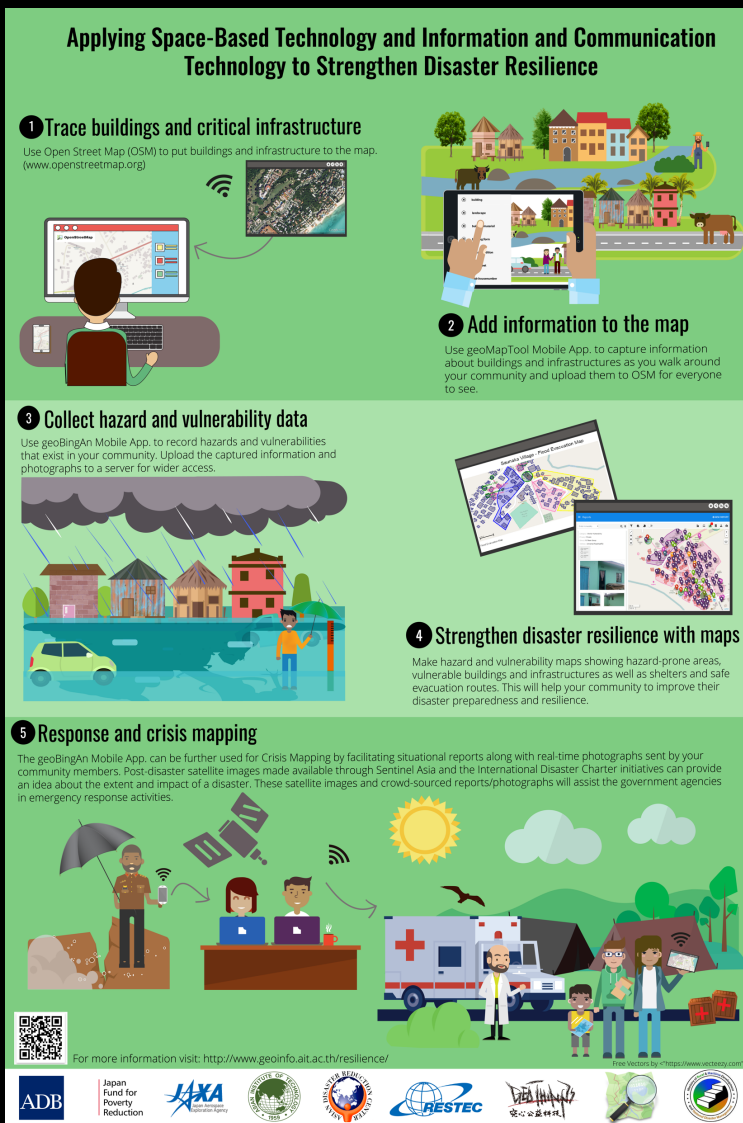
Disaster Data
Coordination

geoBingAn was leveraged by ADB TA8884 Project

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

- Trace buildings and critical infrastructure**
Use Open Street Map (OSM) to put buildings and infrastructure to the map. (www.openstreetmap.org)
- Add information to the map**
Use geoMapTool Mobile App. to capture information about buildings and infrastructures as you walk around your community and upload them to OSM for everyone to see.
- Collect hazard and vulnerability data**
Use geoBingAn Mobile App. to record hazards and vulnerabilities that exist in your community. Upload the captured information and photographs to a server for wider access.
- Strengthen disaster resilience with maps**
Make hazard and vulnerability maps showing hazard-prone areas, vulnerable buildings and infrastructures as well as shelters and safe evacuation routes. This will help your community to improve their disaster preparedness and resilience.
- Response and crisis mapping**
The geoBingAn Mobile App. can be further used for Crisis Mapping by facilitating situational reports along with real-time photographs sent by your community members. Post-disaster satellite images made available through Sentinel Asia and the International Disaster Charter initiatives can provide an idea about the extent and impact of a disaster. These satellite images and crowd-sourced reports/photographs will assist the government agencies in emergency response activities.

For more information visit: <http://www.geoinfo.ait.ac.th/resilience/>



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ADB Regional: Applying Space-Based Technology and Information and Communication Technology to Strengthen Disaster Resilience



Crowdsourced mobile app to track disasters tested for first time in Fiji (by UN-SPIDER, 2018)

- The geoBingAn app was introduced for the first time in an emergency response exercise in Fiji on 1 March 2018 by the country's National Disaster Management Office (NDMO) during a tsunami drill.
- The exercise involved the simultaneous evacuation of nearly 4,000 students and teachers from five schools situated along the country's Suva coastline. The drill provided disaster management officials with real-time information on a simulated emergency - from the issuance of the public advisory to the safe arrival of people at the evacuation sites. The NDMO said that the exercise was an indication of Fiji's plans to move towards space-based technology and Information Communication Technology (ICT) to assist in emergencies.

<http://www.un-spider.org/news-and-events/news/crowdsourced-mobile-application-track-disasters-tested-first-time-fiji>

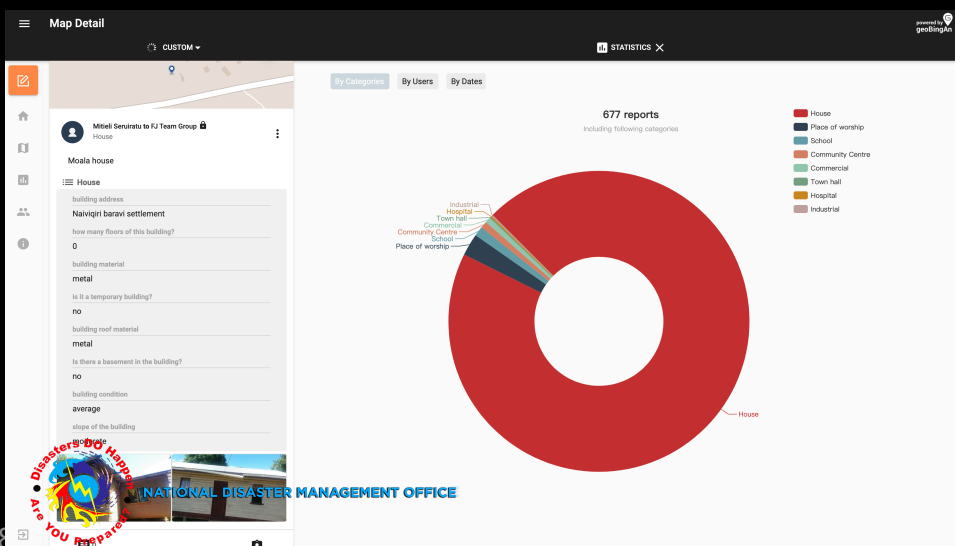
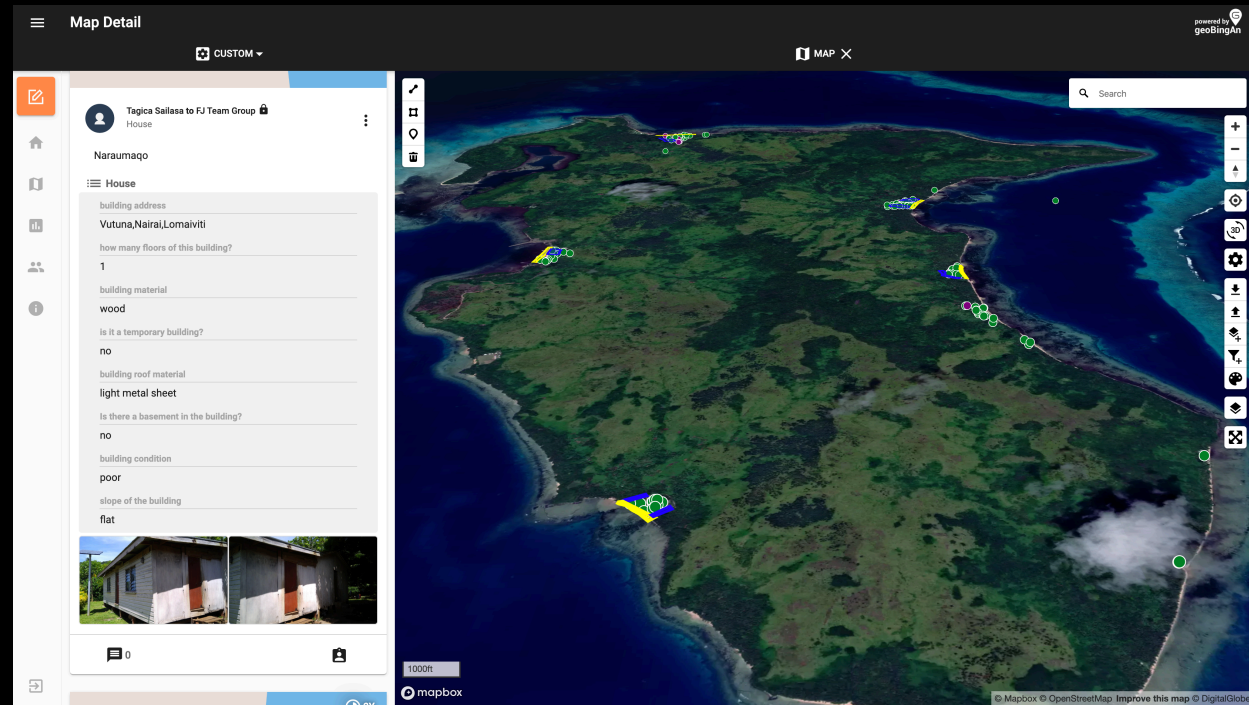
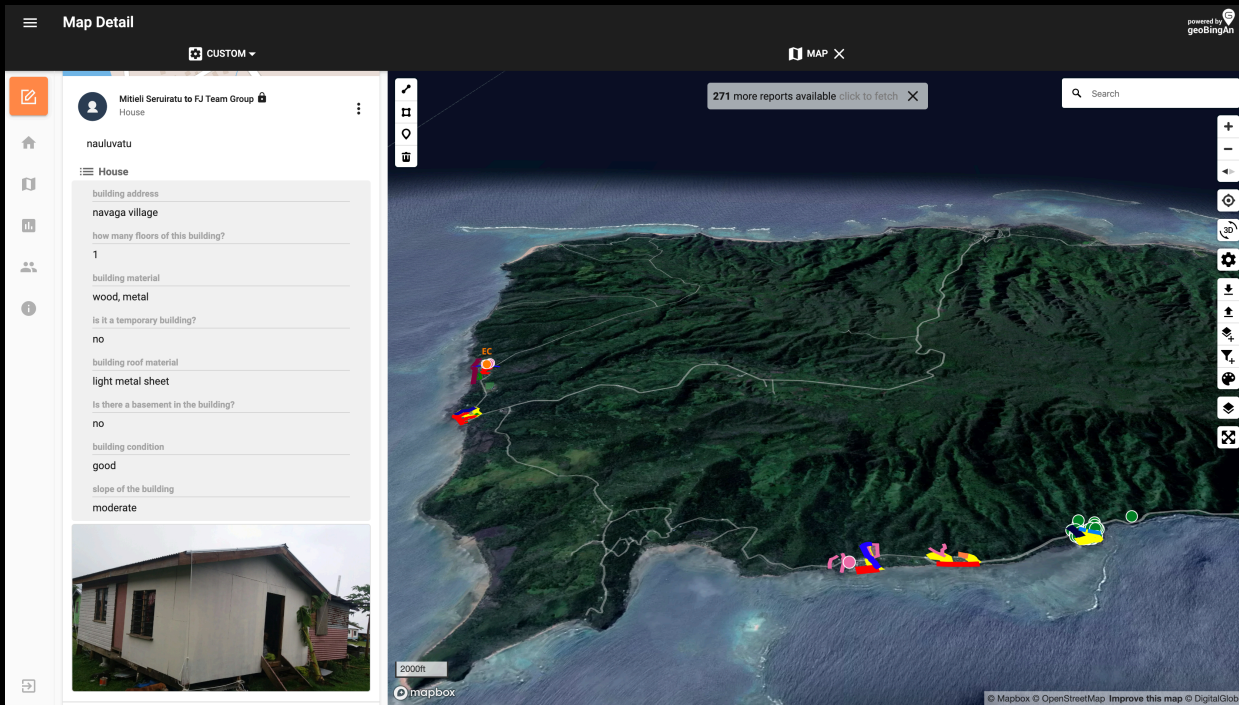
Tangible Achievements with geoBingAn for Fiji

- With this ICT-based EOC, geoBingAn, for Fiji NDMO, now
 - elevate the evacuation plan to exit Suva Grammar School from 7 min to 5 min and 34 sec
 - is empowered to know the Situation with its location and status
 - can deliver better communication and coordination to the responders from NEOC
 - can plan and publish the evacuation map for both web and mobile app access
 - can administrate, time, and review the drill progress from its beginning to the end.

Socio-economic Benefits with geoBingAn for Fiji

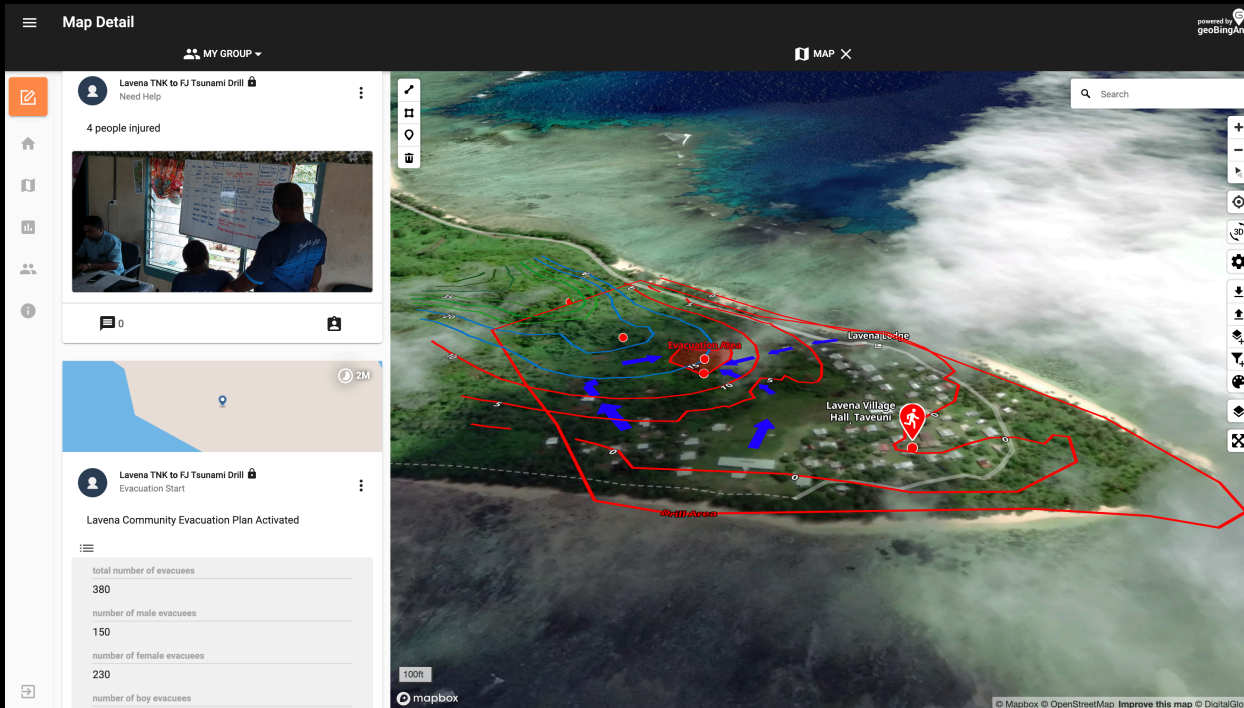
- About 730 evacuees in PacWave2018 and more than 1700 students, including those from Fiji School for Blind, in World Tsunami Awareness Day 2019, were safely guided and efficiently evacuated because of the proper situation coordination with geoBingAn.
- For the capacity building of disaster resilience in response to Tsunami, geoBingAn serves great and demonstrated how ICT can work for humanity!

Buildings Assessment for Remote Island/Area with geoBingAn App



- 677 buildings in remote island/area were mapped with its detailed attributes
- Building photo were taken, along with its address, material, condition, slope, and more
- Disaster risk and evacuation map can be developed from those infrastructure data

Digitalized Evacuation Maps on geoBingAn for Fiji by NDMO



- Digitalized evacuation map now can be easily shared across stakeholders
- Drill situations with photos and report forms can now overlay on evacuation map
- EOC information can be announced and exchanged via web and mobile app
- EOC can now import and export those disaster data as SHP, KML, or EXCEL file

About PacWave2018 and its outcome with ICT

Posted by Petersen Photography

- A tsunami drill and PacWave2018 exercise was held in Suva, Fiji on 31st October, 2018 with technical support provided by IOC-UNESCO. The Seismology Section of the Mineral Resources Department reviewed their standard operating procedure as the National Tsunami Warning Centre (NTWC) and the National Disaster Management Office (NDMO) reviewed the National Tsunami Response Plan 2017.
- The PacWave18 exercise involved almost 100 first responders personal from 5 national agencies and 730 evacuees who are members of the staff from 23 agencies situated along a section of the capital city's central business district (CBD).
- The PacWave18 exercise involved a series of briefings for the media, participating agencies and first responders' agencies and followed by a table top exercise. The briefings and table top exercise was organized and supported by NDMO on the 29th - 30th October, 2018 in collaboration with the in-kind contribution from NTWC, the Pacific Community (SPC) and IOC-UNESCO.

About PacWave2018 and its outcome with geoBingAn

Map Detail

CUSTOM

powered by geoBingAn

Regional House, Knollys St

NEOC to FJ Team Group
Drill End

Thank you
End of PACWAVE18

2

UNDSS
Vinaka 4m

RBF
vinaka now

New Comment

Social media style status update, with map, photos, form, reply, and built-in task assignment and tracking

NEOC to FJ Team Group
Tsunami Status Update

All Clear message
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Starting point of Evacuation

Situation Updates for Drill Progress

Recorded GPS trace for Evacuation Evaluation

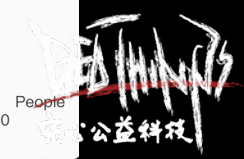
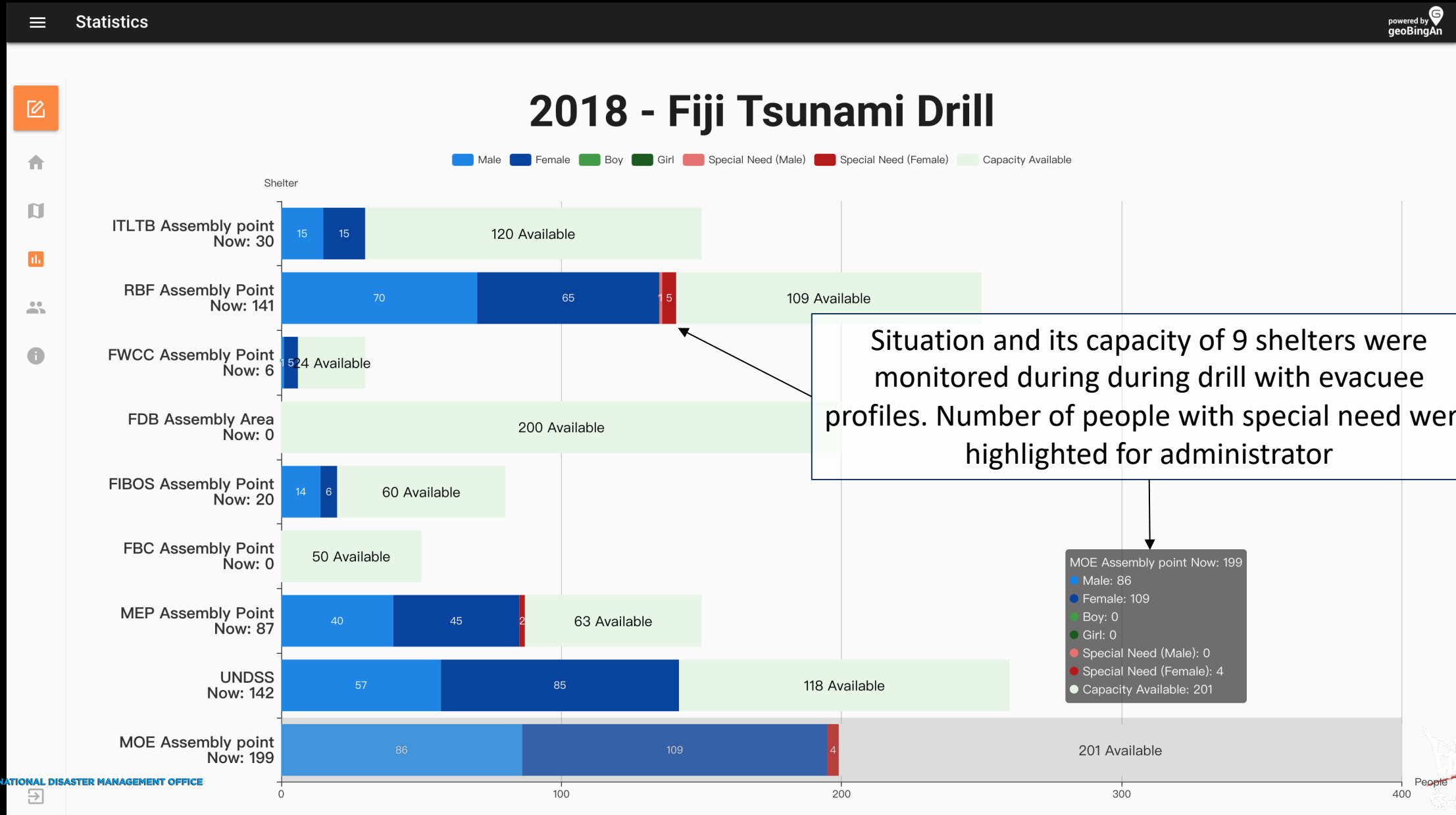
Drill timer

Fiji Evacuation Drill: 66:39

© Mapbox © OpenStreetMap Improve this map © DigitalGlobe



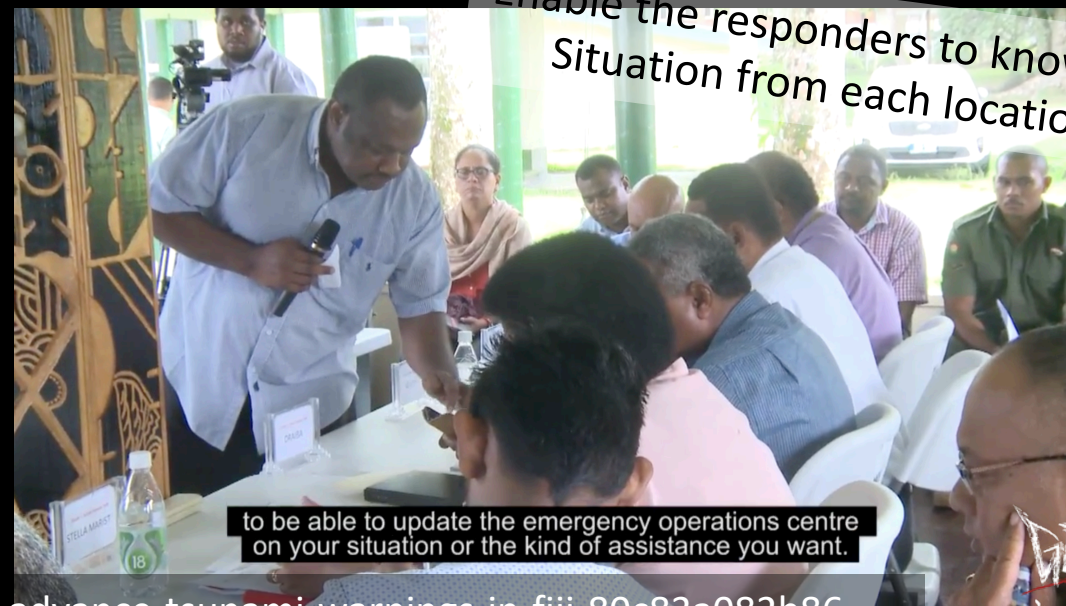
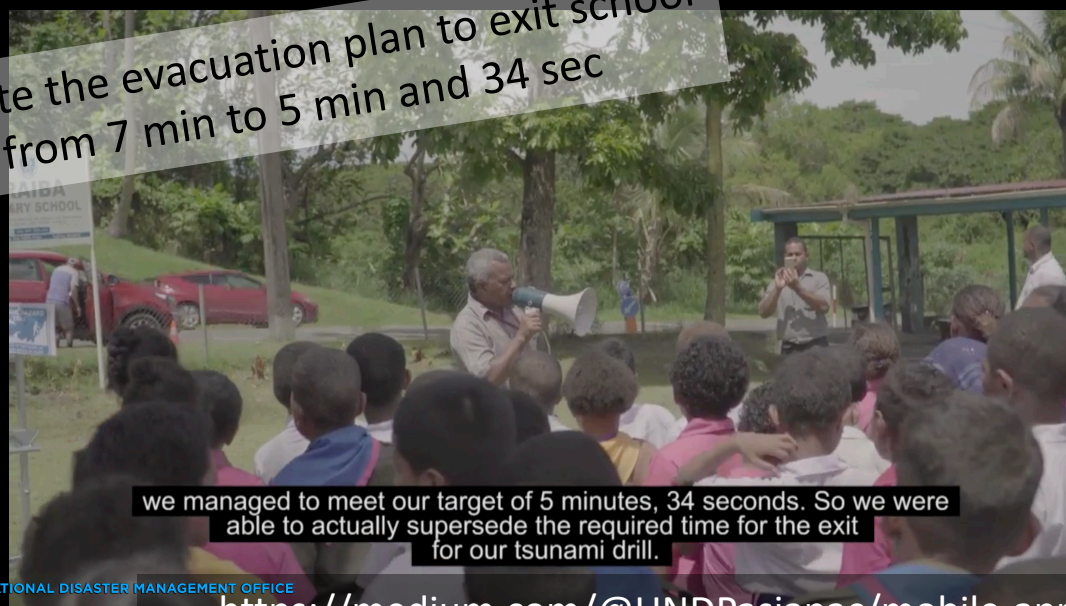
About PacWave2018 and its outcome with geoBingAn



Testimony from NDMO and Principle of Suva Grammar School



Elevate the evacuation plan to exit school from 7 min to 5 min and 34 sec



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<https://medium.com/@UNDPasiapac/mobile-app-to-advance-tsunami-warnings-in-fiji-80c83a082b86>

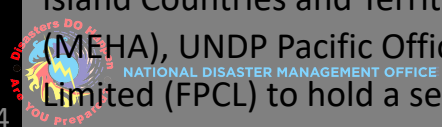


geoBingAn for National Emergency Operation Centre (NEOC) in World Tsunami Awareness Day (WTAD) 2019



NDMO mobile application namely **geoBingAn** for coordination and communication. This geoBingAn provides real-time geotagged reports to the National Emergency Operation Centre (NEOC). This is also the first time for Fiji NDMO to use the newly refurbished state-of-the-art NEOC that was officially opened in September 2019 for any emergency management exercise or a real disaster event.

Fiji Tsunami Working Group (FTWG) of the Intergovernmental Oceanographic Commission (IOC) Pacific Tsunami Warning and Mitigation System (PTWS), Pacific Island Countries and Territories Working Group on Tsunami Warning and Mitigation (PICT-WG) collaborated with Ministry of Education, Culture and Heritage (MEHA), UNDP Pacific Office "Partnerships for Strengthening School Preparedness for Tsunami in Asia and the Pacific" project and Fiji Ports Corporation Limited (FPCL) to hold a series of events to observe World Tsunami Awareness Day (WTAD) in Suva, Fiji on 5th November, 2019.




geoBingAn for National Emergency Operation Centre (NEOC) in World Tsunami Awareness Day (WTAD) 2019

World Tsunami Awareness Day 2019
powered by geoBingAn

CUSTOM DATE RANGE
MAP


MEHA EOC to FJ Tsunami Drill
Status Update

Mr Ben acknowledging the presence of DNDMO and DAMU with all the 4 participation school and all line ministries in a successful Tsunami drill.



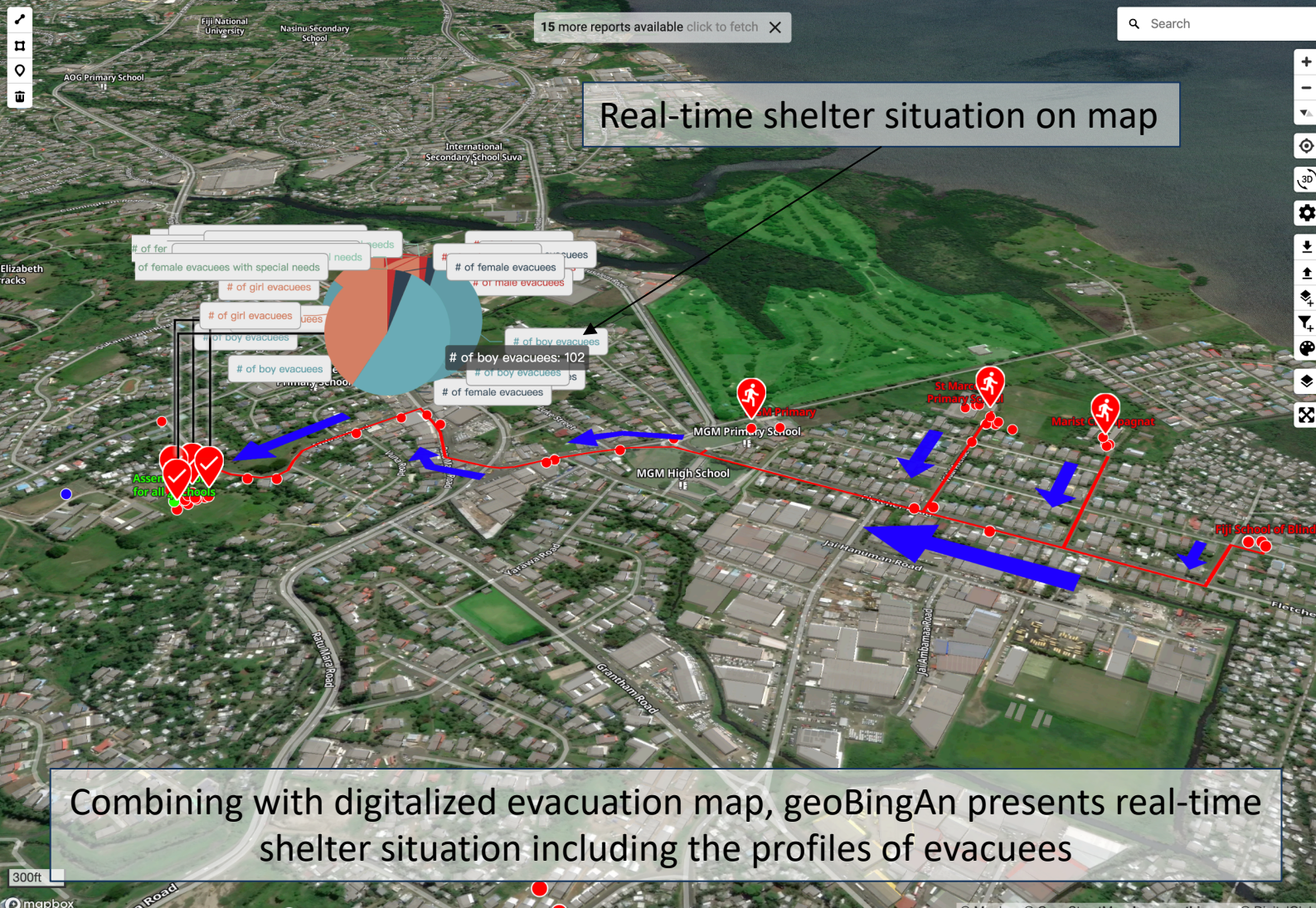
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Status Update

Distribution of refreshments



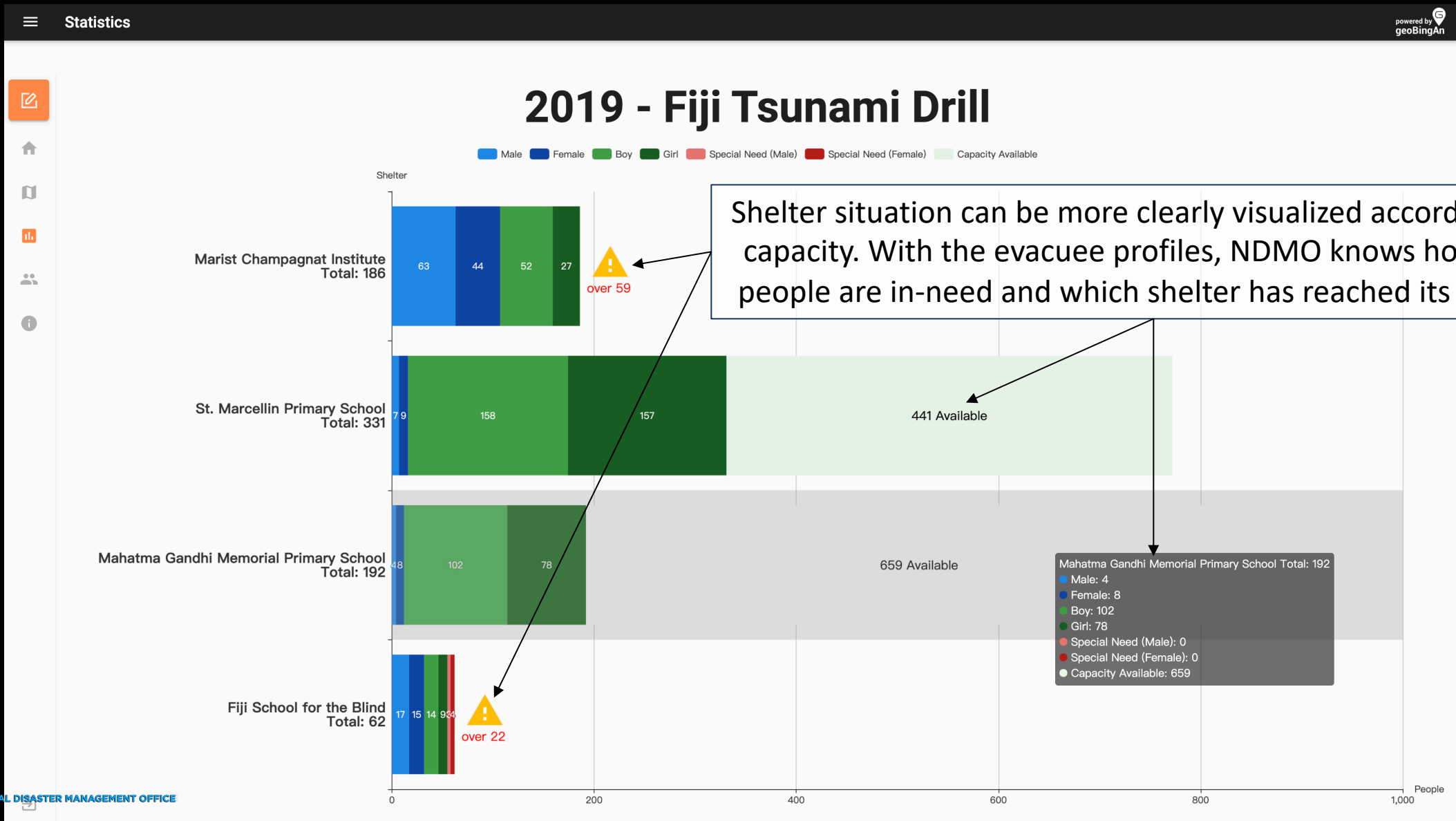
15 more reports available click to fetch X

Real-time shelter situation on map



Combining with digitalized evacuation map, geoBingAn presents real-time shelter situation including the profiles of evacuees

geoBingAn for National Emergency Operation Centre (NEOC) in World Tsunami Awareness Day (WTAD) 2019



geoBingAn (究平安) Smart City SDK

Connect Citizen and IoT Sensors for the City Level Data Science and Service Development



Remote Sensing



Field Survey & Validation



IoT & Crowdsourcing



Open Data with CitySDK



Urban Planning



geoBingAn EOC service platform is not just a GIS, it harmonizes with various survey and situation data for pre-disaster survey and drill practice, in-disaster response and coordination, and post-disaster assessment and validation. Those are the fundamentals for smart city with self-sustainability