

Crowdsourcing for humanitarian programming: A new channel for beneficiaries feedback- A Research Perspective

Melanie Eckle

GIScience Research Group

Heidelberg University



GeOnG 2016 Round table 19.10.2016



“Is the data collected fitting what operations need for their monitoring?”

Humanitarian Organisations

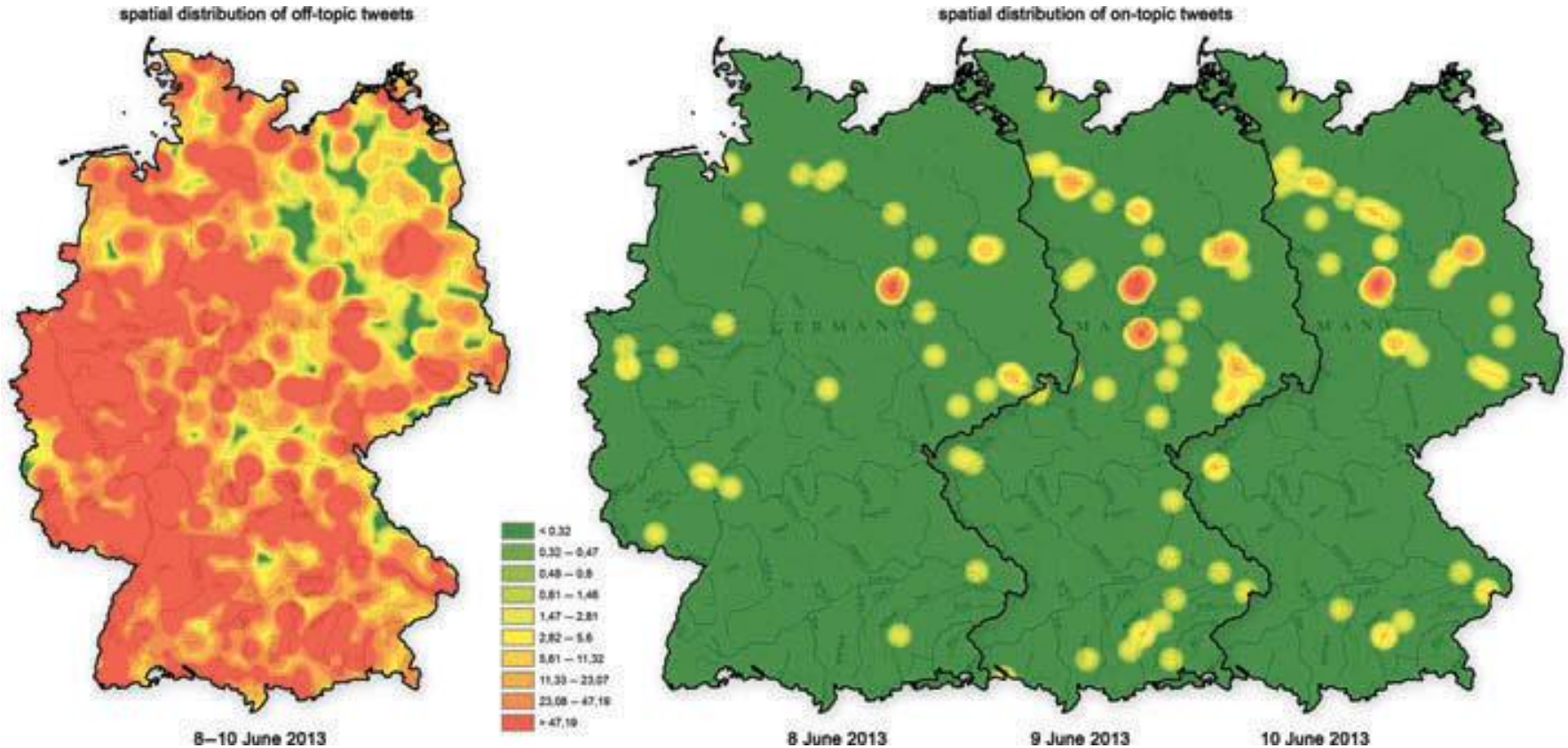
- ... Where?
- ... What?
- ... Who?
- ... What measurements?

CROWDSOURCING

- ... Where services?
- ... Who can support?

Beneficiaries

Data mining / Event detection



de Albuquerque et al. 2015

OpenFloodRiskMap

OFRM FIND CRITICAL OBJECTS ROUTING OWN OBJECT LISTS SETTINGS FLIWA LINK logged in as: eckle tenant: HD-Demonstrator log out admin

Find Critical Objects clear

No stored object query selected
Select stored object query

Selected object types clear

- hospital x
- police x
- kindergarten x

Add object type
Define search area

QUERY OBJECTS

Manage object queries

Results
clear
print view

Health Care

- hospital (9)
- St. Marien-Klinik (Frauenklinik), Edgar-von-Gierke-Straße, 2, way-111245137
- Klinik für Psychiatrie und psychotherapeutische Medizin, way-85397544
- St. Vincentius-Kliniken, way-157370171
- way-32027633
- Praxis, Alte Friedrichstraße 44, way-383595037
- Diakonissenkrankenhaus, node-29795328
- Klinik für Herzchirurgie, Franz-Lust-Straße, 30, way-28439934
- St. Vincentius-Kliniken, way-144452650
- Städtisches Klinikum, way-32027628

Government and Administration

- kindergarten (103)

Emergency Aid and Rescue Service

- police (18)

Routing clear

No stored routing selected
Selected stored routing

Starting point

- Kindergarten Heilig-Geist, Kastenvörstraße, 23a, way-27081587 remove

End points

- Unnamed point
Route duration: 5 Minuten
Route distance: 3.8 km
print view remove route

Add new end point

Search address

No address found.

Routing configuration (hide)

Avoid the following street types:

- Highway
- Tollway
- Unpaved road
- Ferry
- Fords

Fastest way

Maximum speed 130

Vehicle type:

Car Heavy vehicle

Define areas to avoid

Own Object Lists

Settings

FLIWA LINK

kindergarten x

OSM-object: way - 27081597

Tag-name	Tag-content
addr:house:23a	
building	yes
amenity	kindergarten
addr:city	Karlsruhe
addr:postcode	76189
name	Kindergarten Heilig-Geist
source:addr	Maps4BW, LGL, www.lgl-bw.de
addr:country	DE
addr:street	Kastenvörstraße

ofrm.geog.uni-heidelberg.de



GeOnG 2016 Round table 19.10.2016

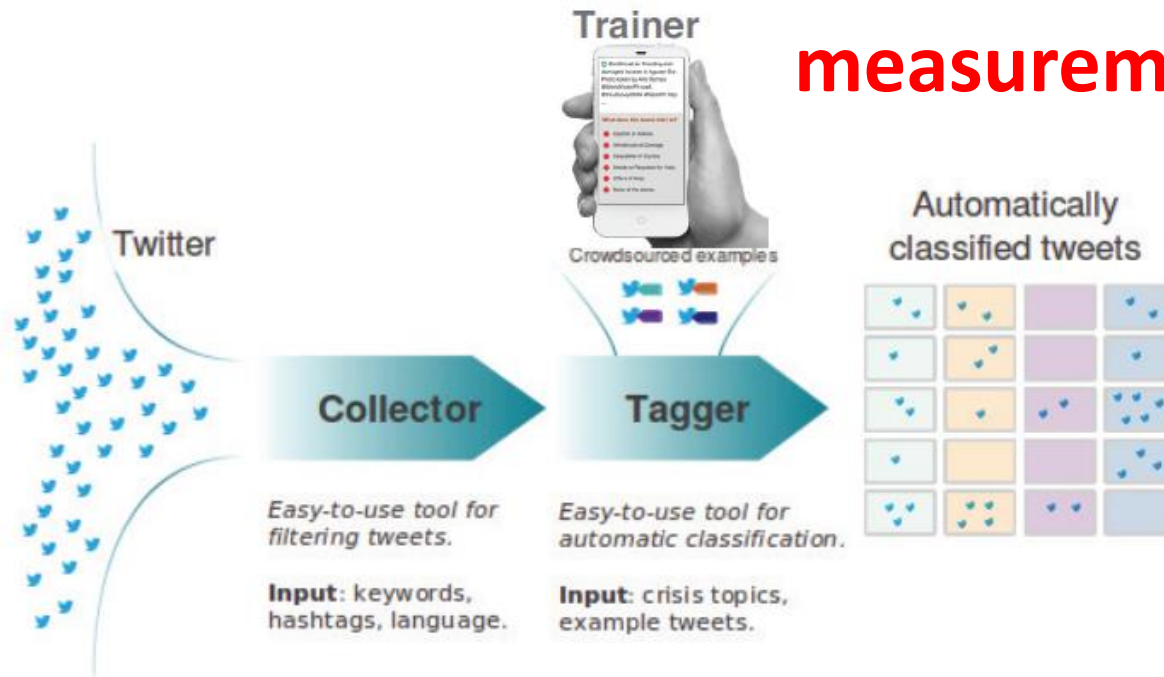


Text based analysis

What?

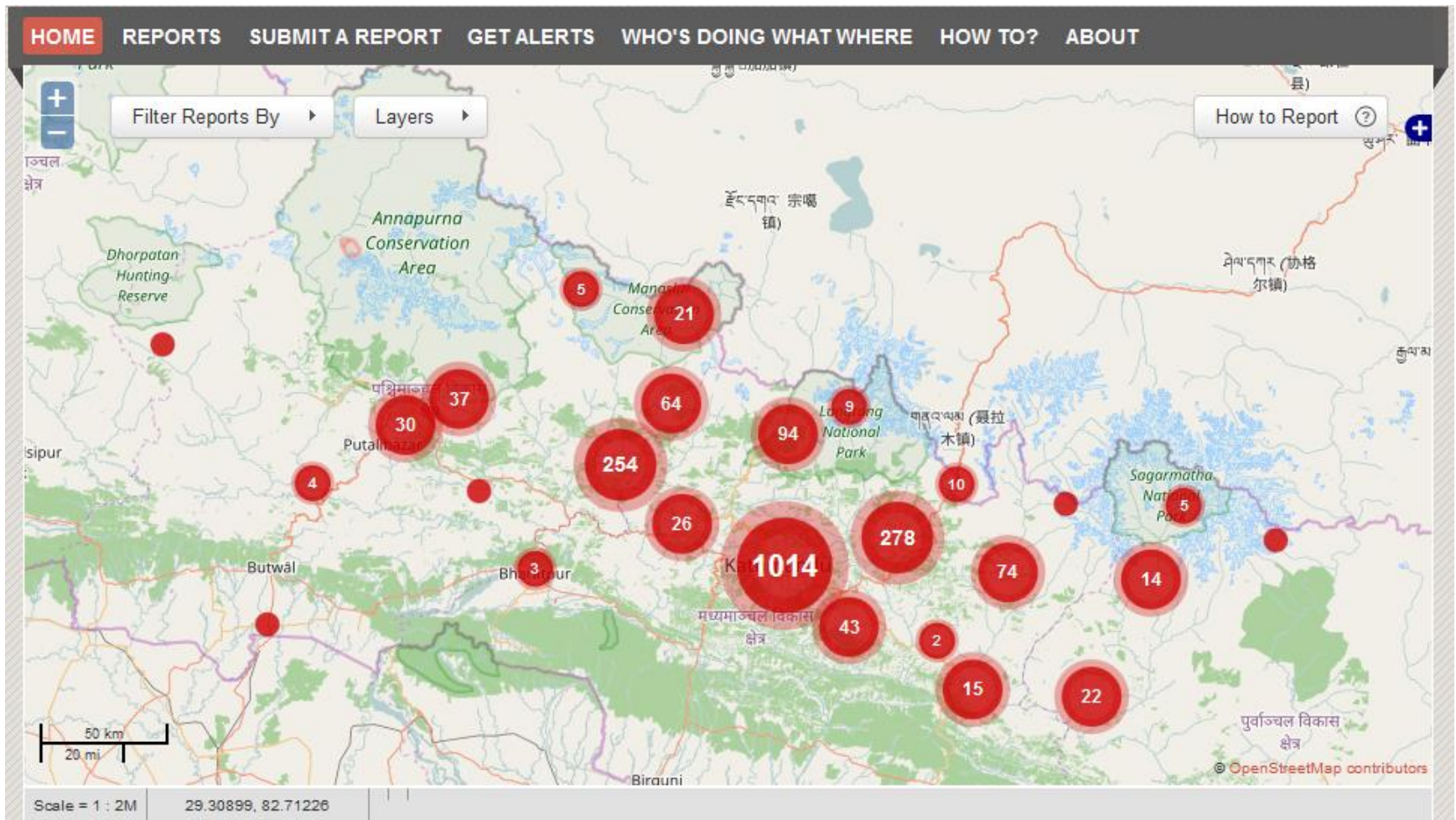
Who?

What
measurements?



Imran et al. 2014

Crisis maps – Quakemap Nepal



kathmandulivinglabs.org



GeOnG 2016 Round table 19.10.2016



QuakeMap – No report is left ‘unclosed’

On April 29, the following report was filed on QuakeMap:

Description

VDC of Dhading in desperate need for aid:

Tripureswor, Marpak, Gumdi, Salyankot, Satyadevi

As a result of earthquake on April 25th, 2015, many villagers in the above areas lost their homes and are homeless. They have been spending nights outdoor under poor weather condition and without proper shelters (lack of tents and necessary items to keep warm).

There is shortage of food and other daily supplies (tents, blanket, warm clothing, medical aid, etc).

Up till now, there is neither aid nor rescue team sent to these remote zones. They are in desperate needs for aid.

A person by name of Mr. Bishnu (+977-9741218813) may be contacted for further inquiry in regards to the current situation and the help that is needed. This individual is from the area.

Additional Data

Phone Number:	9741218813
Most Affected District:	Dhading
Location Accuracy - the report is from in this:	VDC

Fig – Report Filed on April 29

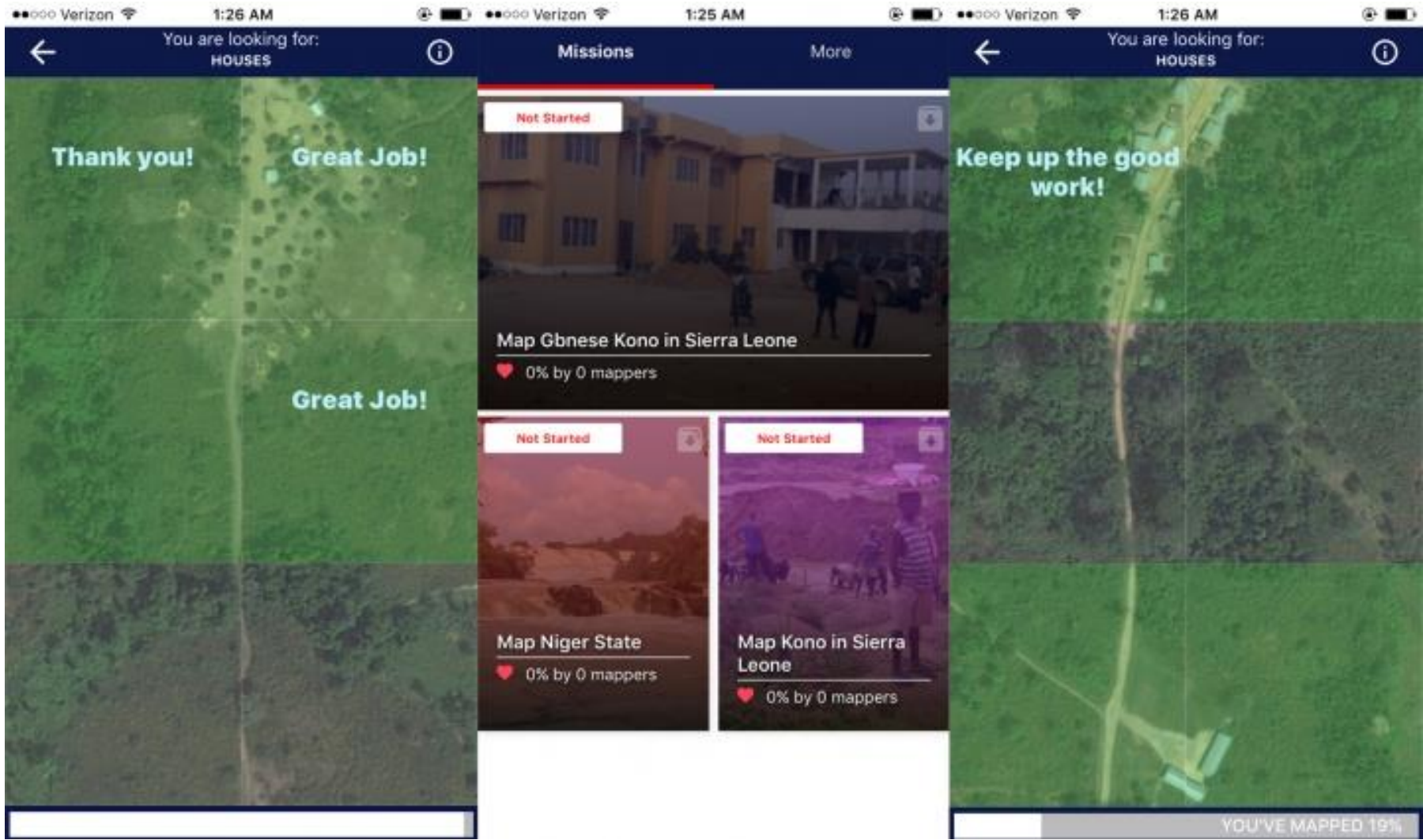
blog.kathmandulivinglabs.org

Open Research Questions

- What other needs on the side of the humanitarian organizations?
- How to ensure adequate participation and representativity?
- How to ensure trustworthiness of the crowdsourced data?

Trustworthiness of crowdsourced data

- Agreement
- Experience
- Motivation
- Recognition
- Data quality



msf.org



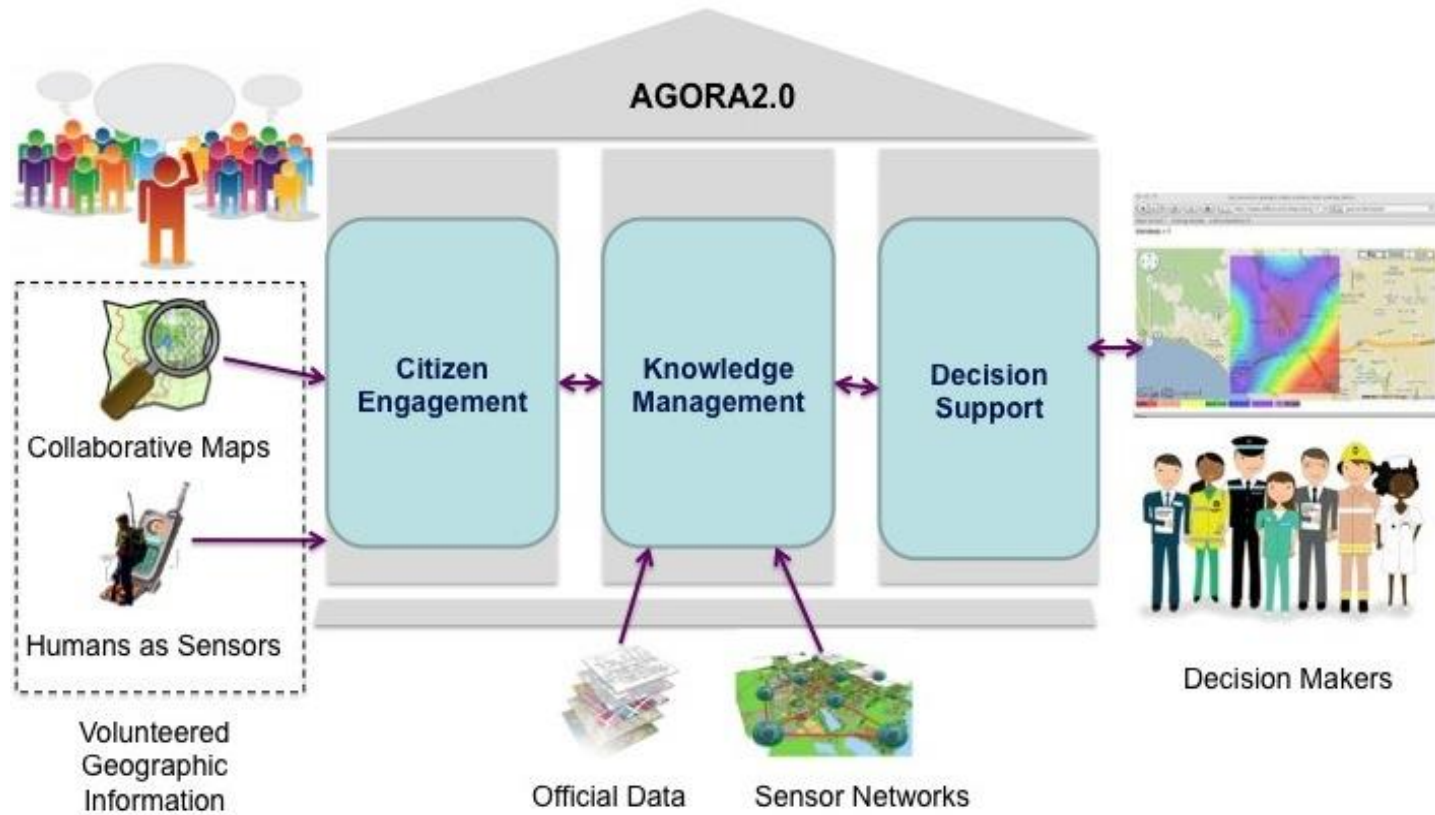
GeOnG 2016 Round table 19.10.2016



Trustworthiness of crowdsourced data

- Agreement
- Experience
- Motivation
- Recognition
- Data quality

What link between this new source of data and "traditional" methods of assessments?



agora.icmc.usp.br

Open Research Questions

- Are these metrics enough to ensure a certain level of trustworthiness in a disaster scenario?
- What other metrics could be useful?

References

- de Albuquerque, J.P., B. Herfort, A. Brenning and A. Zipf (2015): A Geographic Approach for Combining Social Media and Authoritative Data towards Improving Information Extraction for Disaster Management: A Study on the Twitter usage in the River Elbe Flood of June 2013. International Journal of Geographical Information Science, volume and issue pending, pp. pending. Taylor & Francis. DOI: 10.1080/13658816.2014.996567.
- Eckle, M., Herfort, B., de Albuquerque, J.P., Leiner, R., Wolff, R., Jacobs, C. and A. Zipf (2016): Leveraging OpenStreetMap to support flood risk management in municipalities: A prototype decision support system. 13th International Conference on Information Systems for Crisis Response and Management. ISCRAM 2016. Rio de Janeiro, Brazil.
- Herfort, B., Eckle, M. and J.P. de Albuquerque (2016): Being specific about geographic information crowdsourcing: a typology and analysis of the Missing Maps project in South Kivu. 13th International Conference on Information Systems for Crisis Response and Management. ISCRAM 2016. Rio de Janeiro, Brazil.
- Horita, F. E. A., Fava, M. C., Mendiondo, E. M., Rotava, J., Souza, V. C., Ueyama, J. and J.P. Albuquerque (2014). AGORA-GeoDash: A Geosensor Dashboard for Real-time Flood Risk Monitoring. In 11th International ISCRAM Conference – University Park, Pennsylvania, USA.
- Imran, M., Castillo, C., Diaz, F. and S. Vieweg (2014): Processing Social Media Messages in Mass Emergency: A Survey. ACM Computing Surveys. 47, 4, Article 67, 38 pages. DOI=10.1145/2771588 <http://doi.acm.org/10.1145/2771588>