

Harnessing the Crowdsourcing Power of Social Media for Disaster Relief

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- Social media has recently played a critical role in natural disasters as an information propagator that can be leveraged for disaster relief. After the catastrophic Haiti earthquake on 12 January 2010, **people published numerous texts and photos about their personal experiences** during the earthquake via social media sites such as Twitter, Flickr, Facebook, and blogs, **and videos** were posted on YouTube.

Donations

- In just 48 hours after the Haitian earthquake, **the Red Cross received US\$8 million in donations directly from texts**, which exemplifies one benefit of the powerful propagation capability of social media sites.

Communication

- Survivors also use social media sites to **keep in touch** with the world after a disaster. The jammed mobile phone network in Japan caused by the recent tsunami and earthquake made it difficult for people to communicate with each other. In response, they used Twitter, Facebook, Skype, and local Japanese social networks to communicate and keep in touch with their loved ones.

Collecting Info

- crowdsourcing applications based on social media applications such as Twitter and Ushahidi offer a powerful capability for **collecting information from disaster scenes and visualizing data for relief decision making.**

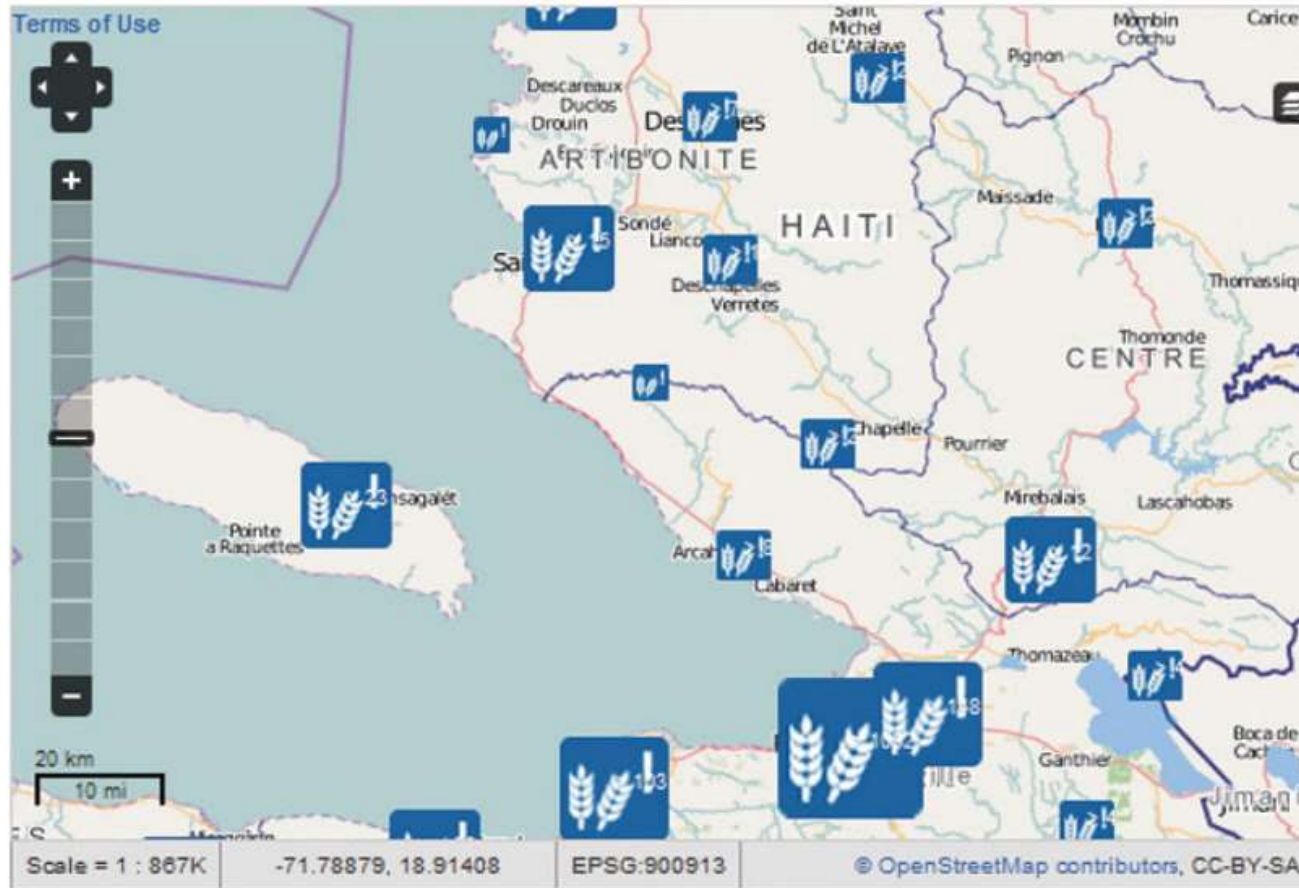
Advantages of Crowdsourcing for Disaster Relief

- First, crowdsourced data including user requests and status reports are collected almost **immediately** after a disaster using social media. Ushahidi Haiti was set up **two hours after the 12 January earthquake** by volunteers from Tufts University in Medford, Massachusetts. Soon after, organizations were able to borrow a short message service (SMS) short code phone number (Mission 4636) to send free SMS texts. News of this free emergency number was spread through local and national radio stations. As of 25 January, the Haiti crisis map had **more than 2,500 incident reports**, with more reports being added every day. The large amount of nearly real-time reports allows relief organizations to identify and respond to urgent cases in time.

- Second, crowdsourcing tools can collect data from emails, forms, tweets, and other unstructured methods and then do rudimentary analysis and summaries, such as by creating tag clouds, trends, and other filters. These can help **partition the data into bins** (such as most-frequently requested resources) and **requests into predetermined, most-urgent categories** (such as medical help, food, shelter, or people trapped). Relief agencies can then concentrate on the issues and events that are most important to the relief effort.

- Figure 1 illustrates the **food requests** on Ushahidi-Haiti, and Figure 2 shows the **most affected locations during the Japanese tsunami** based on the number of reports mapping on Ushahidi's crisis map. Using these maps, relief organizations can **coordinate resource distribution and make better decisions based on their analysis of crowdsourced data**. Fallback plans can be further developed for the top events or to cover the majority of events.

Figure 1



↓ TIMELINE OF EVENTS

-  ALL CATEGORIES
-  1. URGENCES | EMERGENCY
-  2. URGENCES LOGISTIQUES | VITAL LINES
 -  2C. EAU CONTAMINEE | CONTAMINATED WATER
 -  2B. PENURIE D'EAU | WATER SHORTAGE
 -  2F. SANS COURANT | POWER OUTAGE
 -  2D. REFUGE | SHELTER NEEDED
-  2A. PENURIE D'ALIMENTS | FOOD SHORTAGE

Figure 2



- Third, providers can include **geo-tag** information for messages sent from some platforms (such as Twitter) and devices (including handheld smart phones). Such crowdsourced data can **help relief organizations accurately locate specific requests for help.** Furthermore, visualizing this type of data on a crisis map offers a common disaster view and helps organizations intuitively ascertain the current status.

The End

- Thanks for your patience.

References:

- **Harnessing the Crowdsourcing Power of Social Media for Disaster Relief**, by **Huiji Gao** and **Geoffrey Barbier** (Arizona State University)
Rebecca Goolsby (US Office of Naval Research)