

Lessons learned from a citizen seismology experiment in Haiti

Fallou L.¹, Corbet A.², Nixon C.³, Hurbon L.³, Calais E.⁴

1-Euro-Mediterranean Seismological Centre, France, 2- Les Afriques dans le Monde, Sciences Po Bordeaux, France- 3. Faculté des Sciences Humaines et Sociales, Port-au-Prince, Haïti, 4. École Normale Supérieure, Université PSL, France

The 2010 earthquake and seismic risk culture in Haiti

On January 12th 2010, Haiti was hit by one of largest seismic disasters known to date. At the time a shortfall of preparedness could be found on both citizens and scientists side:

- **Lack of seismic sensors**
- **Lack of scientific knowledge**
- **Low seismic risk culture**

Picture of damaged building in Haiti (2010)



A paradigm shift...

"Seismic networks are not only composed of sensors, but also of the humans around them."

RaspberryShakes (RS) were used to:

- (1) **collect seismic data** and complement the national seismic network
- (2) **engage with the population** to understand their risk perception and the usage they could make of these tools

The S2RHAï project: a citizen seismology initiative

Building a citizen seismic network in Haiti through citizen-seismology:



Location map of S2RHAï seismic sensors

- Installation of 15 seismic sensors at volunteers' house or offices
- Creation of a [website](#) for seismic data visualization
- Translation of [LastQuake](#) app in Creole
- Creation of a WhatsApp group to gather the community and offer support for the volunteers

Research Methodology: In order to understand volunteers adoption and uses of the Raspberry shake we conducted **15 semi-directive sociological interviews.**

What Citizen-Seismologists say...

Pride and interest

RS hosts expressed pride and interest in being part of the network and actively contributing to science, risk reduction and their country's development.

"I'm taking part in the project to help science better understand natural hazards in Haiti. It's important to understand so that it doesn't happen again"

Empowerment

Some volunteers reported a form of empowerment as they could compensate for the deficiency of the state, which they generally distrust.

A need for support

RS hosts asked for support of 3 kinds:

- **technical**, to better handle the RS
- **scientific** to better understand earthquakes and data they collect,
- **pedagogical** to better communicate with their community. Indeed, few of them engaged in mediation activities or discussions with their community members. They feared that this would awaken the trauma caused by the earthquake of 12 January 2010.

« Of course some people see spirits in the Raspberry Shake. Haiti is a country of magic »

A bond between seismologists and citizens

Enhancing bonds for a more efficient and inclusive seismic network

Interviewing volunteers allowed us to list concrete actions to:

- improve the seismic information system,
- enrich the collaboration between citizens and seismologists and
- accompany hosts in their role as ambassadors to their community. project.



The August 24th 2021 M7.2 earthquake

- The citizen seismic network and location system functioned well. The earthquake was even recorded in the near field by a station 20 km from the fault.
- The WhatsApp group enabled RS hosts to share info about local damages and rumors. Scientists provided info about mechanisms and aftershock risk.

