Science for Society: Building earthquake resilience with Haitian citizens

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Abstract

The OSMOSE project is a citizen seismology project in Haiti that aims to empower communities and enhance societal resilience to seismic events by creating a network of low-cost Rasberry Shake stations established in the homes of volunteer citizens. OSMOSE not only harnesses scientific data but also fosters community engagement and raises awareness about seismic risk among the general population. By involving citizens directly in the monitoring process, the project seeks to cultivate a culture of preparedness and collective responsibility, bridging the gap between scientific knowledge and local understanding.

Engaging Citizens for Effective Seismic Monitoring and Resilient Society

Educational outreach and participatory activities

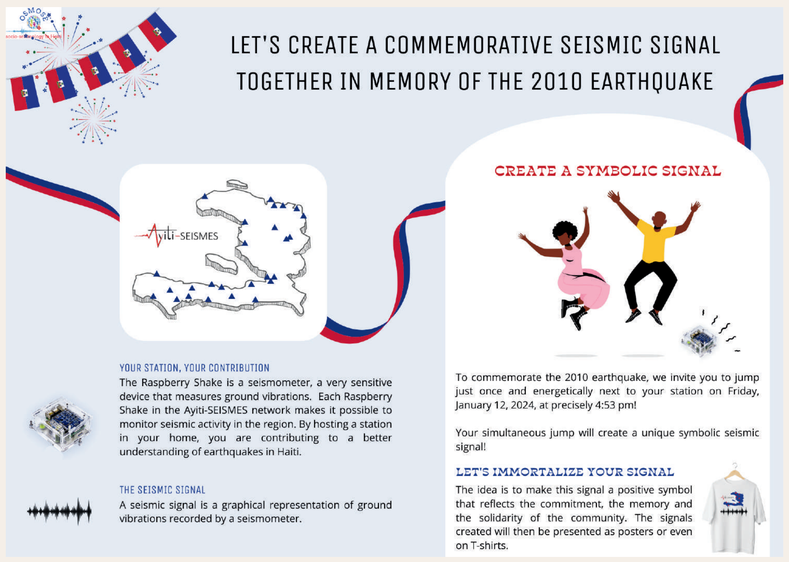
→ Empowering Haitian communities to take proactive measures in response to seismic threats

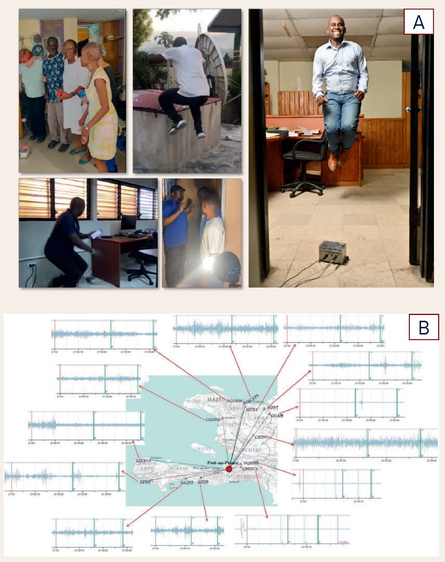
→ Safer society

Raspberry Shake station hosts

Data visualization website:
https://ayiti.unice.fr/ayiti-seismes/

ENGAGING CITIZENS IN SEISMIC MEMORY

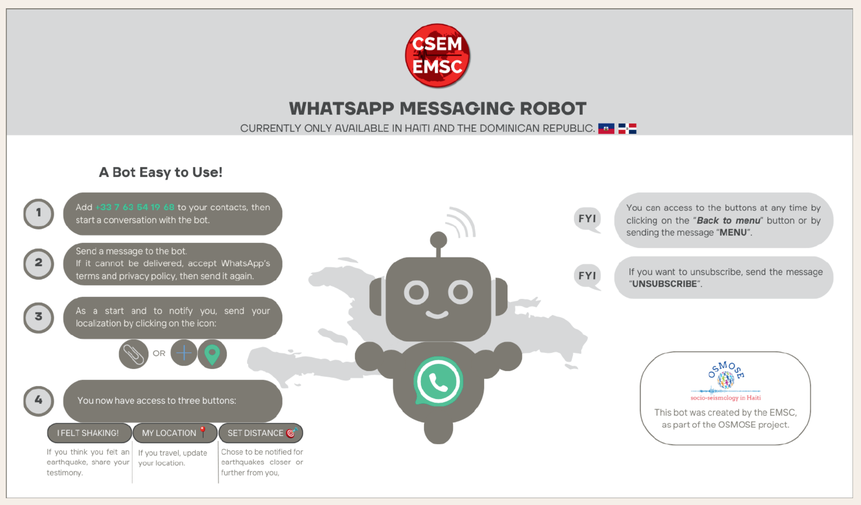




- **Coordinated Jump Event:** Raspberry Shake hosts across Haiti jumped near their seismometers, generating vibrations recorded by the seismic sensors (A)
- **Manual Data Processing:** Experts processed these data on the Ayiti-SEISMES platform, allowing the system to interpret them as a localized earthquake (B)
- **Commemorative Earthquake:** The system assigned a fictitious magnitude of 5 to this commemorative event

FROM LASTQUAKE APP TO WHATSAPP BOT

- **LastQuake app**: Effective, but limited usage in Haiti
- **WhatsApp Bot:** Leveraging Haiti's most popular messaging platform
  High costs limit further development



LastQuake WhatsApp Bot User Guide

Bot Sent Message

IMMERSIVE EARTHQUAKE TRAINING FOR REAL-WORLD PREPAREDNESS

- **Seismic Event Simulation:** Allows participants to practice actions before, during, and after an earthquake in a safe, controlled environment
- **Realistic Effects:** Includes falling objects and sounds to enhance immersion and make the experience more lifelike.
- **Hands-On Learning:** Provides a practical way for users to prepare for real-life seismic threats

Scene created by students of the École Supérieure d'Infotronique in Haiti

Game parameters

Conclusion

The OSMOSE project demonstrates that low-cost Raspberry Shake stations effectively complement conventional seismic networks, enhancing seismic monitoring coverage in Haiti.

There is a strong demand for earthquake-related information among citizens, coupled with a sense of pride in participating in the scientific project.

Community engagement is crucial not only for data collection but also for fostering a sense of ownership and empowerment.

Meaningful citizen engagement remains challenging in Haiti due to socioeconomic disparities and political instability.

The activities implemented aim to keep Haitian citizens motivated despite difficulties, emphasizing that sustained community engagement is key to the project's long-term success and impact.

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