Landslide Risk Management in Remote Communities: Integrating Geoscience, Data Science, and Social Science in Local Context

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IRG 2018

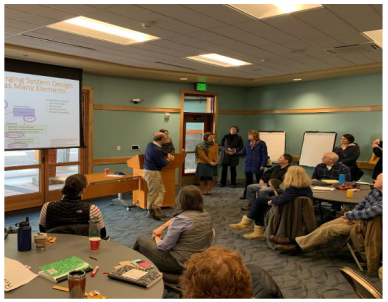
In 2015, landslides killed three people and destroyed property in Sitka, Alaska.

How can a small town have better landslide warning?

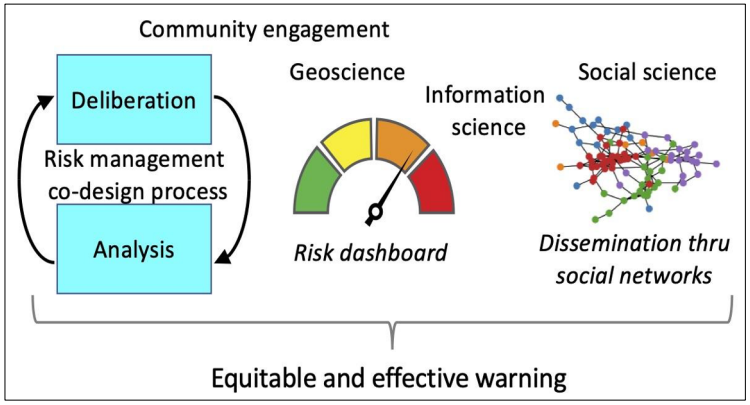
This project aims to provide Sitka effective and equitable landslide warning by:

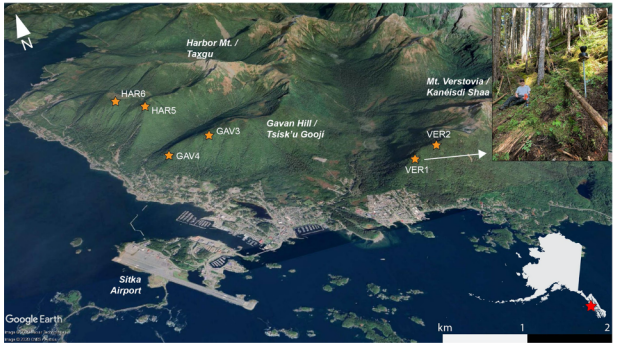
- Deploying a network of low-cost sensors to improve landslide prediction;
- Employing social network analysis to disseminate risk information to the entire community; and
- Co-designing warning system with community to best serve locally specific needs

PROGRESS TO DATE



Two co-design workshops and many other community outreach events





Moisture sensor network installed in hills above Sitka, along with citizen science rain gauges in town

PLANS

- Develop and deploy landslide risk dashboard:
  - Third generation moisture sensors
  - Predictive model of landslide
- Educate community on use of dashboard
- Make recommendations for addressing landslide insurance challenges

IMPACTS

- Provide sustainable landslide warning system for Sitka
- Transfer approaches to USGS for widespread dissemination

INTELLECTUAL MERIT

- Improve landslide prediction with data from networks of moisture sensors and rain gauges
- Enhance equitable and efficient access to risk information using social network analysis and influence maximization
- Extend participatory risk management processes to landslide warning and to small communities

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