Risk Perception and Communication for the Tonga Distant Tsunami

January 15, 2022

The Hunga- Tonga- Hunga- Ha'apai (Tonga) volcano erupted triggering a tsunami forecasted to reach North America. Cascadia Hub researchers had an opportunity to investigate risk perception and communication among coastal emergency managers (EMs).

This research explores

1. How risk can be effectively communicated
2. How risk perceptions of 'distant' tsunami alerts and warnings affect EMs' willingness to issue emergency alerts

PC: Tonga Geological Services

Credit: Chelsea Thompson/Chemical Sciences Laboratory

21 EMs in the U.S. Pacific Northwest were interviewed, resulting in four key take-aways

1. EMs perceived the tsunami to be low-threat, but they disseminated a precautionary alert
2. EMs' decisions to take action were driven by anticipated community reactions
   1. Balanced notification vs. panic
   2. Balanced notification vs. alert fatigue
   3. Balanced notification vs. curiosity
3. EMs consider their communities' characteristics when selecting the appropriate mode(s) of communication
   1. Used multiple communication strategies
   2. Used targeted communications
4. The event created obstacles and facilitators for how EMs received information and made decisions
   1. Obstacle: Language of information received
   2. Obstacle: Period of uncertainty
   3. Facilitator: Time to make a decision

This study showed it is critical to have robust warning systems for distant tsunamis and better planning for effective communication. Rare events can slow down alerts and protective actions among coastal residents, and emergency managers need to understand these geological events to effectively communicate them to the public.

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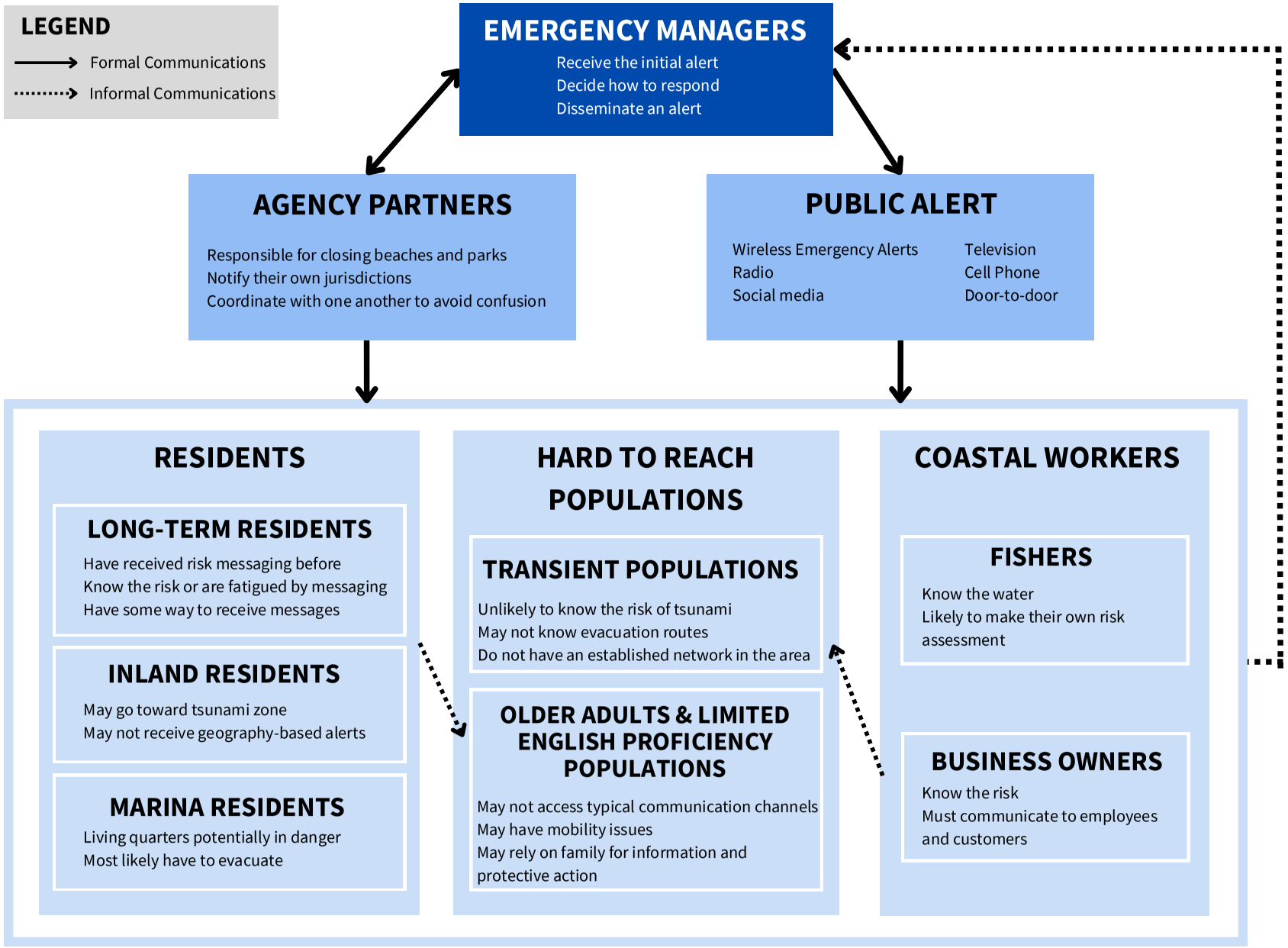

Participants described both formal (solid arrows) and informal (dotted arrows) communications regarding tsunami risk. Alerts were targeted towards agency partners, who may have a two-way dialogue with the EMs, and the public, who may contact EMs or those in their office to ask questions and gain clarification of the alert. The participants also described informal discussions among the public, such as hotel staff/owners to tourists or younger residents sharing information with older adults in their family.

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