

PROJECT SUMMARY

While these steps are being taken to integrate new communications mechanisms at the federal and state levels, many local communities across the country remain disconnected islands due to a lack of infrastructure linking them to key information sources such as those available online.

A lack of connectivity has the potential to restrict many rural residents from receiving vital and time-critical information necessary for a successful disaster response and recovery. As information seeking intensifies in disaster (Tierney, 2009), those who are without information access become more vulnerable and potentially less resilient in the face of risk and loss.

INTELLECTUAL MERIT

The proposed research—which addresses 1) hazard preparedness and emergency response in rural communities and 2) disaster recovery in rural communities DRRC emphasis areas—examines the following question: how does access to information affect the perception of collective efficacy, a measure of community level resilience 1, in rural communities across all phases of disaster? By addressing this question, we will critically evaluate the utility of the Internet to influence community resilience and assess information gathering, dissemination, and use relative to each of the four phases of disaster.

The research also examines multiple dimensions of rural community resiliency, including community resources, information and communication infrastructures, social capital, and community competence (Norris et al. 2008).

There is a clear need for this kind of research. A recent summary of the potential applications of emerging technologies to community resilience (Sutton, under review) points out that while many inferences can be made about the uses and benefits of ICTs and access to the Internet for community resilience, little is known about their individual applications and effect on community efficacy.



FIRE ALONG MOUNTAIN RANGE

Although there is a growing body of research supporting the fact that ICTs are being employed in disaster response (Guth and Alloway 2008; NRC 2003; NRC 2007; Starbird et al. 2010; Torrey et al. ND), little empirical attention has been given to their effectiveness to increase access to information, to support coping and social support, and to increase perceptions of collective efficacy, thereby promoting community resilience.

Furthermore, few studies have concentrated on rural populations of 50,000 persons or less with most of the attention directed at community resilience within larger urban contexts. Recent theoretical work on societal resiliency metrics has focused on population level measures (census tract or census block) such as social vulnerability, the built environment and infrastructure, natural systems and exposure, and hazards mitigation and planning (Cutter et al. 2008). Due to methodological issues, this approach devotes very limited attention to individual and community level perceptions, knowledge, and actions in response to hazards or disaster events.

DISASTER RESILIENT RURAL COMMUNITIES

RESEARCH PROJECT

BROADER IMPACTS

Recent investments in broadband infrastructure by the federal government are designed to increase connectivity and Internet access in rural areas. These multi-million dollar investments coupled with current interest in creating disaster resilient communities, makes it critical that the role of information access, most specifically via online sources, on rural community resilience is studied.

Outcomes of this research will include increased knowledge about the role of information access for community resilience leading to the development of recommendations on strategies to link information usage and access across all four phases of disaster for rural community resilience.

In addition, the U.S. government is making tremendous investments in rural communities through the American Recovery and Reinvestment Act (ARRA) to bring economic development and connect rural populations via communications infrastructures. Notably, more than \$7.2 billion will be dedicated to broadband projects. The first wave of broadband stimulus awards, announced in December 2009, includes \$183 million to bring broadband access to rural communities in 17 states. Increased broadband access among rural communities will benefit economic and community development, provides access to educational instruction, improve the environment, improve the quality of e-health care, and create opportunities to enhance public safety operations (California Broadband Taskforce 2008). Little is known, however, about the effect of information access and its ability to enhance community resilience among rural populations at risk of wildfires and other seasonal hazards.

And finally, due to the effects of climate change, many ecosystems are likely to be threatened. Major disturbances such as floods and droughts are likely to increase in number and intensity, causing forested landscapes to be at higher fire risk. The ecological impacts of wildfires as well as forest pests and diseases are expected to rise, with extended periods of high fire risk and large increases in area burned. With such growing threats, mountain communities will need to become more prepared through known structural and environmental mitigation measures. The incorporation of standard strategies for information dissemination and access may also become a standard mitigation measures leading to increased community resilience.

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