

The Role of Extension in a University's Response to a Natural Disaster

Abstract

In 2014, a mudslide devastated a small community in rural northwestern Washington State, taking 43 lives. The disaster created ripple effects that affected families, economies, transportation, and employment in neighboring communities. This article provides details of the state land-grant university's efforts to help affected communities recover. Aspects of this response readily replicable by other land-grant universities include outreach leadership provided by local/county-based Extension faculty; creation of a response team with depth and breadth of expertise and skills; engagement of campus-based colleges, colleagues, and students; and delivery of youth development programs in affected communities. Meaningful outcomes have been achieved, and the outreach continues.

Keywords: [disaster](#), [recovery](#), [economic development](#), [Extension](#)

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Introduction

On March 22, 2014, a mudslide along State Route 530 in Washington killed 43 people, destroyed 49 structures, and severed transportation and communication corridors (Lombardo et al., 2014) (Figure 1). As emergency response transitioned to long-term recovery, the Washington State University (WSU) SR 530 Mudslide Recovery Team was formed and tasked with coordinating WSU's outreach to affected communities. Team members mobilized university resources to help affected persons rebuild their lives and communities recover. The strength of this local and campus-based response was the depth and diversity of the team's membership. Extension-affiliated members of the team included student interns; administrators; researchers; and specialists in community and economic development, youth development, communication, emergency management, technology, agriculture, and natural resources. Team partners included elected leaders from affected communities, nonprofits, government agencies, campus-based colleges/departments/faculty/students, tribal officials, and area citizens. Given the potential for natural and human-origin disasters in every state, lessons learned from the SR 530 mudslide are applicable to the entire U.S. Extension system.

Figure 1.

Washington State Route 530 Mudslide, March 22, 2014



Photo courtesy M. J. Gaffney.

Literature Review

Extension Engagement with Disasters

Disaster response is usually addressed by local, state, and/or federal emergency responders. However, few organizations are as well positioned as Extension to assist affected communities with long-term disaster recovery. Recovery programming falls well within Extension's wheelhouse: swift response to local needs with research-based educational outreach and direct engagement, often accomplished through synergistic work with community partners. Given its embeddedness in communities, programming visibility, and existing partnerships, Extension can be a valued, trusted, and effective participant in community-based recovery efforts (Boteler, 2007; Cathey, Coreil, Schexnayder, & White, 2007). Moreover, citizens trust Extension as a credible source of locally relevant information and appreciate Extension's effective connections with other organizations (Eighmy, Hall, Sahr, Gebeke, & Hvidsten 2012).

Across the country, Extension disaster efforts often are facilitated by the Extension Disaster Education Network (EDEN). EDEN's mission is "to reduce the impact of disasters through research-based education," and EDEN is "a collaborative multi-state effort by Extension Services across the country to improve the delivery of services to citizens affected by disasters" (Extension Disaster Education Network, n.d., para. 1). Three SR 530 Mudslide Recovery Team members were EDEN delegates; they used EDEN resources and previous experience to guide other team members and community residents through the recovery process. The SR 530 Mudslide Recovery Team built on this foundation in innovative and replicable ways to address the aftermath of the SR 530 mudslide.

A Call for Specialists

Depending on the expertise of Extension professionals in a community, other Extension personnel may be needed to address specific postdisaster needs. For example, mental health issues are a common struggle for those who have experienced a disaster. Extension programming can promote a sense of normalcy, address various

educational needs in a safe environment, teach essential skills, and provide enjoyable distractions—all of which contribute to a sense of well-being. Routines such as schedules and classes are particularly important for children after a disaster and contribute to feelings of security (Evans & Wiens, 2004). In an article introducing the second edition of their publication *Triumph Over Tragedy: A Curriculum for Extension Professionals Responding to Disasters and Terrorism*, Wiens, Evans, Tsao, and Liss (2004) stated, "In the long-term, agents can collaborate with their communities to provide long-term recovery services, which may include financial counseling, training for teachers, and school, work, and church-based educational programs" ("Getting Involved," para. 2). Qualified campus-based Extension and/or college departmental faculty can conduct mental health awareness training for teachers and other community members. Extension specialists can address financial, food safety, water quality, or other issues relevant to affected communities' postdisaster needs. Many Extension professionals have expertise in volunteer management, which can be particularly valuable during postdisaster recovery. Evans and Wiens (2004) contended that such volunteering by affected residents can contribute to critical support of social networks and "maintain familiar elements in a community" (p. 197).

Community Recovery Through Economic Recovery

Economic effects of a disaster can echo through a community for years. As noted by the Natural Hazards Research and Applications Information Center (2001), "recovery from disaster is fundamentally an economic proposition" (p. 5-2). This scenario is particularly true in rural communities, where "dollars are heavily recycled . . . [and] there may be significant changes in the local economy after a major disaster" (Evans & Wiens, 2004, p. 210). The disaster-related loss of rural businesses has a ripple effect on employees, residents, schools, and property values. Enhancing the economic vitality of a disaster-affected area is one of the major tenets of holistic disaster recovery (Natural Hazards Research and Applications Information Center, 2001).

Enduring Assistance

Disaster recovery occurs on a continuum (Figure 2). Following a disaster, attention to and support for affected communities eventually wane. Consequently, there is a phase of recovery—the disillusionment phase—wherein affected persons can become discouraged, angry, and bitter over loss of support (Evans & Wiens, 2004; Zunin & Myers, 2000). Already embedded in the community, Extension can continue outreach throughout all recovery stages. Extension educators can assure affected community members that they will receive ongoing support.

Figure 2.

Disaster Recovery Continuum



Adapted with permission from National Disaster Recovery Framework (2nd ed.), p. 5, by U.S. Department of Homeland Security, 2016

(https://www.fema.gov/media-library-data/1466014998123-4bec8550930f774269e0c5968b120ba2/National_Disaster_Recovery_Framework2nd.pdf).

Actions/Inputs

Initial WSU Response

Recognizing the need for Washington's land-grant university to respond to the mudslide disaster, WSU president Elson Floyd charged the Extension director in the affected county (Snohomish) with leadership of the institution's recovery team and provided some initial funding. President Floyd committed WSU to outreach in the affected area for a period of 5 years, a time frame designed to support communities through initial stages of recovery and beyond.

The Snohomish County Extension director partnered with the WSU director of emergency management, and these two leaders hand-selected a recovery team based on individuals' areas of expertise and community needs as conveyed by community leaders. The 15-member WSU SR 530 Mudslide Recovery Team was formed with faculty and staff from across the state, each contributing different skills and knowledge. The team members included the Snohomish County Extension office manager, community and economic development coordinator, 4-H youth development faculty member, and student intern program coordinator; the WSU Community and Economic Development Unit director; a WSU communication specialist; the regional WSU Extension livestock specialist; the director/project specialist of the WSU Metropolitan Center for Applied Research and Extension; the senior associate in the WSU Program for Digital Initiatives; and the associate director of the WSU Division of Governmental Studies and Services and that division's student intern. Extension staff and the interim chancellor of nearby WSU North Puget Sound at Everett also were part of the team.

The recovery team's approach to assisting affected communities was based on Emery and Flora's (2006) work and community capitals framework concepts. Application of the community capitals framework involves considering types of capital a community possesses and analyzing types of community capital from the perspective of holistic community change. Emery and Flora's work has served as the foundation for work of EDEN members and has been the topic of conference presentations and webinars focused specifically on its application in disaster recovery. Applying lessons learned from the SR 530 mudslide response, WSU Extension created the Extension Disaster Capacity Program (EDCP) to address the needs of eastern Washington communities affected by extensive wildfires in 2015. EDCP uses WSU Extension's engagement in the mudslide recovery effort and access to EDEN networks and resources, increasing the university's ability to contribute to long-term disaster recovery (Aitken, Gaffney, Sanders, Babine, & McDaniel, 2016).

Community-Centered Outreach Activities

A major strength of Extension's response was team members' commitment to addressing community needs identified and prioritized by local officials and citizens. The team held weekly teleconferences throughout 2014 for communicating and action planning. A full-time recovery project coordinator from the affected area was hired with county and state funds.

Using one of the university's strongest resources—its students—team members developed a summer internship program to place WSU undergraduates in affected communities. This program gave priority to applicants from affected communities, providing those students with opportunities to give back to their communities and supplying communities with interns already familiar with local people and culture. Twenty-six student interns worked on community-determined projects during the summers of 2014 and 2015, supported by funding from their WSU colleges. Two interns coordinated outreach from WSU's main campus in Pullman. Their efforts included a university-wide fund-raising banquet/auction that raised \$15,716. This fund-raiser supported three volunteer student service trips to the affected disaster area for two community work days in 2015 and an additional week of service in 2016.

Every year during spring break ("Week of Service"), WSU students can volunteer for various university-sponsored community service activities. For the March 2016 Week of Service in the mudslide area, 45 students and other volunteers completed nine locally determined projects, including painting one community's city hall, cleaning up area trails and parks, restoring wetlands, building river access steps, clearing trails, and supporting a high school science garden. From the 2014 mudslide event through the 2016 Week of Service, more than 50 WSU student volunteers, in addition to the summer interns, traveled to the affected area—many more than once—to work alongside members of 15 other organizations, donating over 1,318 hr of service work valued at over \$38,000 (Independent Sector, 2015).

Resident-Sensitive Youth Programming

While WSU Extension planned youth programming to implement through the summer internship program, it became clear that parents wanted to keep children close to home during the recovery process. Therefore, Extension personnel involved with 4-H youths focused on developing community-based outreach. A summer camp for students in kindergarten through grade 9 featuring robotics and nutrition education and a natural resources institute/workforce development program for high school students were both offered locally.

Depth and Breadth of Outreach

The recovery team broadened its scope well beyond the community-centered outreach activities described thus far. Team members wrote grant proposals and sought donations to fund outreach efforts. One Extension faculty recovery team member facilitated development of the SR 530 Landslide Commission Final Report, which demonstrated consensus by commission members on every issue the group addressed. The interim chancellor of WSU North Puget Sound at Everett facilitated discussions with mayors of affected towns to coordinate economic development activities. The communication specialist on the team created a WSU website focusing on the mudslide and wrote 20 mudslide-recovery press releases to keep the event in the public eye. Team members disseminated information about recovery efforts by writing articles for numerous publications and making presentations, including at EDEN events and community/economic development meetings.

Additionally, team members called on Extension and departmental faculty to address specific concerns. For example, a campus-based human development Extension specialist and other staff affiliated with the WSU Child and Family Research Unit (CAFRU) conducted monthly trainings for area teachers focusing on how to assist children after a disaster and address issues related to long-term recovery. CAFRU also assisted with information sharing among people in an affected community, disaster response agencies, and elected representatives; this work was acknowledged when the National Child Traumatic Stress Network was successfully reauthorized (Aitken

et al., 2016).

Faculty from WSU's Composite Materials and Engineering Center and the WSU Energy Program were brought in to work with the town and school district of one community regarding biofuel product development and use, which has the potential for economic development, including job creation and energy cost reduction. With assistance from WSU School of Design + Construction faculty and WSU's Rural Community Design Initiative, the recovery team facilitated a workshop with the Sauk-Suiattle Indian Tribe to plan a reservation expansion to mitigate flood risk.

Outcomes/Impacts

Short-Term Outcomes

Some outcomes of WSU's Extension-led outreach were evident almost immediately; others will take years to manifest their complete impact. In the short term, the community beautification efforts in which WSU students participated created immeasurable goodwill with residents, established trusting relationships, brightened neglected areas, and demonstrated to residents that people outside the area cared about them and could be relied on for support.

Financial Support and Economic Development

The campuswide response brokered by Extension at the request of university leadership resulted in an impressive depth and breadth of economic response to affected communities. To date, \$1,436,883 in external funding has been contributed to support community recovery. Of that, \$514,600 was awarded to WSU for recovery-related programming from diverse sources such as American Red Cross, U.S. Substance Abuse and Mental Health Services Administration, local service organizations, the SR 530 Landslide Commission, and the Sauk-Suiattle Indian Tribe. The balance was awarded to municipalities, agencies, and organizations in the mudslide area and came from sources such as the U.S. Economic Development Administration and State Department of Transportation. Of that funding, \$61,100 was designated for the Glacier Peak Institute, which began as a WSU-Snohomish County Extension/4-H natural resources science, technology, engineering, and math pilot project and has become an independent nonprofit organization. WSU contributed \$300,094 in internal funding or in-kind support to the recovery efforts, with \$145,094 from Extension and \$155,000 from WSU colleges, campuses, and Office of the President (Aitken et al., 2016).

The combined affected communities of Darrington/Arlington were among eight national finalists competing for a \$10 million America's Best Communities grand prize for community revitalization in 2016. Although the communities did not win the grand prize, they received \$150,000 for winning at the state and regional levels. Three recovery team members supported the communities' application process.

Thanks to improved intercommunity communication and cohesion, a comprehensive economic redevelopment plan for the affected region is in place, supported by a \$150,000 federal economic development grant. With strong connections to businesses and economic development organizations, WSU Extension and WSU North Puget Sound at Everett are now invited members of the Stillaguamish Valley Economic Redevelopment Advisory Council and its leadership committee. Community leaders have become familiar with one another's efforts and share understanding of and support for area-wide recovery plans and priorities. Economic development partnerships in the area are more numerous and involve more entities than ever.

Effectiveness and Success of Extension-Placed Interns

Interns made significant contributions to the communities they served. Their development of a website and a Facebook page improved communication throughout the area, supplementing the existing roadside reader board method. Tourism has increased beyond postdisaster expectations due to interns' assistance with event planning and social media management. A video created by a 2014 summer intern about the disaster won the Society of Professional Journalists Region 10 Mark of Excellence Award. One intern completed a water source inventory for Snohomish County, achieving a decade-long planning goal for the county.

Moreover, the summer interns gained in-depth knowledge through hands-on service focusing on disaster effects and assisting communities with long-term recovery. They also learned firsthand how a state's land-grant university can address multiple community needs (Sterner, Kantor, Moulton, Gaffney, & McDaniel, 2015). Some interns credited their summer experience with changing or focusing their career objectives or affecting their lives in other ways, as evidenced by the following comment:

"I cannot express . . . the feelings of accomplishment and pride I have gained through this experience. To be able to dedicate my entire summer to this community was humbling . . . I saw a community in pain turn into a community of pride and resilience. . . . This community may be shaken up and struggling but they are not giving up." Colby Cavanaugh, 2014 WSU SR 530 Mudslide Recovery Team intern

Extension Outreach to Tribal Members

WSU Extension's outreach to the area resulted in new relationships with the Sauk-Suiattle tribe. Team members connected with tribal members at the Northwest Tribal Emergency Management Council conference and scheduled a site visit to the reservation with the tribal telecommunications provider. This action led to continued Extension outreach to the tribe related to broadband access, emergency management, and a community engagement effort to help the tribe expand beyond an area frequently prone to threats of flooding, glaciers, lahars, and wildfires. This is an example of mobilization of university resources, brokered by Extension faculty and staff responding to local needs and soliciting assistance from campus-based colleagues—in this instance, WSU School of Design + Construction faculty and students.

Recognition of Extension's Leadership Role

Several recommendations included in the SR 530 Landslide Commission Final Report facilitated by the recovery team member have been incorporated into new approaches to disaster planning and response by the Washington legislature. (The report can be accessed at www.governor.wa.gov/sites/default/files/documents/SR530LC_Final_Report.pdf.)

A community-based ripple map evaluation exercise was very powerful, accommodating input from participants and stakeholders and documenting all efforts and outcomes attributable to WSU Extension recovery outreach. At the culmination of the first summer internship program, student interns participated in a ripple mapping exercise conducted by WSU Extension personnel, two of whom were recovery team members. Ripple mapping helps participants connect and attribute widespread outcomes to particular outreach efforts; identifies short-term, medium-term, and long-term outcomes; acknowledges the value of social capital development; and inspires participants to keep moving forward with enthusiasm to achieve their collective goals (Kollock, Flage, Chazdon,

Paine, & Higgins, 2012).

Due to the outputs and impacts described above, the WSU SR 530 Mudslide Recovery Team received national teamwork awards in 2015 from the National Association of Extension 4-H Agents and the National Association of Community Development Extension Professionals.

Recommendations

On the basis of their experiences and reflections, WSU SR 530 Mudslide Recovery Team members compiled a list of lessons learned. Although many of the activities listed below are routine work for some Extension professionals, the severity of the impact of Washington SR 530 mudslide compelled WSU Extension to be innovative in how services were delivered, expand services as needed, and assess communities' needs so that gaps could be addressed with utmost sensitivity for a fragile population striving for recovery. We share these recommendations with the hope that in the event of disasters in other states, Extension faculty will mobilize resources of their land-grant universities similarly to achieve comprehensive community recovery efforts.

- Seek financial support for recovery assistance efforts from all sources.
- "Go deep" within Extension and the university to meet community needs, increase citizens' access to university experts and specialists, and conduct outreach; solicit support from all units, departments, colleges, and centers.
- Establish and support a recovery outreach team with diverse experience and expertise.
- Ensure early and visible successes (e.g., community beautification) to boost morale and provide hope.
- Mobilize existing Extension volunteer bases to provide boots-on-the-ground assistance, if possible.
- Increase "routine" programming to increase Extension's presence and provide a sense of normalcy.
- Focus on recovery, not response.
- Consider Extension roles in disaster preparation.
- Develop innovative ways to address physical and emotional needs.
- Be flexible; conditions and actions will evolve over time.
- Focus on meeting community needs as defined by the community.
- Facilitate public meetings in the community to identify and reach consensus on recovery priorities.
- Serve as a convener when a disaster becomes a catalyst for multiple resources and initiatives, helping focus resources for longer term impact.
- Engage with elected and public officials, and specify response capacity; contributions generate long-term goodwill.

- Use existing community connections and partnerships, and coordinate development of effective teams tasked with specific outcome-based activities.
- Foster long-term relationships between Extension and residents: Stay in the community, meet community members on their terms, and plan on long-term engagement with affected communities.
- Engage in public relations outreach to keep activities and needs in the public eye.
- Provide youth programming in the community instead of transporting youths to take part in programming elsewhere.
- Address all aspects of Extension outreach: agriculture, community and economic development, family and consumer sciences, natural resources, and youth development.
- Use recovery outreach as an opportunity to ensure that community members are aware of other Extension and university services and programs.
- If requested, identify a fiscal agent for public donations; community development foundations are very useful for this task.
- Leverage donations and fund-raisers when applying for grants.
- Plan ahead, track activities, and evaluate components of the project for possible scholarship opportunities that may help others learn from your experiences.

Conclusions

All states in the United States are subject to various natural disasters, including wildfires, earthquakes, hurricanes/tornadoes/high wind, snow/ice storms, flooding, mudslides, hail, high heat/drought, volcanoes, and/or tsunamis. Extension's engagement in disaster preparedness and recovery benefits communities because no other entity has the geographic distribution, access to research-based practices, local credibility, capacity, and mission to address the depth and breadth of community needs after such events. Additionally, the goodwill and relationships forged during such trials facilitate Extension programming in an area long after recovery is complete.

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