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SUCCESS STORY

Damage Assessments for Response and Recovery in Nepal

USAID-supported damage assessment teams, trained and managed by NSET, played a key role in earthquake recovery efforts in Nepal.

Photo by Miles Price, USAID

An NSET earthquake damage assessment team.

Through damage mapping, NSET provides government agencies and other stakeholders with tools to identify seismically vulnerable areas.

Photo courtesy of NSET

A severely damaged structure identified for demolition.

Prior to the April 2015 earthquake in Nepal, USAID supported the National Society for Earthquake Technology (NSET) to prepare rapidly trained teams to assess and map earthquake damage throughout affected areas. Through early preparation, NSET was able to mobilize 400 damage inspectors and more than 450 volunteers shortly after the earthquake struck. From May to September 2015, NSET earthquake damage assessment teams surveyed more than 125,000 buildings in the five most-affected districts, providing critical information for effective response and recovery activities.

Led by engineers and other specialists with prior NSET training, teams of four or five inspectors fanned out to affected districts where new volunteers entered a short period of hands-on training, during which teams learned to use NSET's data collection technology. Following the hands-on training, NSET identified the strongest volunteers to lead the teams, which often sheltered in tents in rural areas where many of the most-affected communities were located. NSET issued each team a smartphone with an NSET-developed mobile data platform and standardized collection form, which ensured consistent data collection and allowed teams to upload data to a central server at NSET headquarters. For each structure assessed, the teams collected geographic location data and a photograph, in addition to information on damage and residents. Teams learned how to assess structures built of a variety of materials, including masonry, adobe, mud and brick, and concrete, for earthquake damage and how to determine the severity of structural damage based on a damage grade (DG) scale from DG-I to DG-V, with a DG-V designation indicating total collapse.

"Prior to leading a damage assessment team, I put more thought into buildings' architectural design qualities. Now, I realize that structural integrity is the most important aspect of construction."
– Aditi D., Architect

After the teams completed the damage assessments, NSET's Geographic Information System Division mapped the data according to a variety of indicators, allowing decision makers at the ward, municipal, and district levels to identify and prioritize reconstruction activities and households in need of assistance. NSET plans to offer the data to national-level authorities to strengthen ongoing reconstruction activities. In addition to sharing the information with the Government of Nepal, NSET is collaborating with academic experts and other stakeholders to use assessment information to conduct seismic vulnerability analyses and develop vulnerability maps that will assist stakeholders throughout affected districts to implement more effective earthquake preparation and disaster risk reduction activities.