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Emergency preparedness activities during an ongoing seismic swarm: the experience of the 2011-2012 Pollino (Southern Italy) sequence

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Facing natural disasters effects can be a very difficult task lacking suitable activities and tools to preventively prepare the involved community (people, authorities, professionals, . . .) to the expected events. Therefore, a suite of preventive actions should be carried out to mitigate natural risks, in particular working to reduce the territorial vulnerability with respect to the specific natural hazard at hand, and to increase people response capacity. In fact, building social capacity helps to increase the risk perception and the people capacity to adapt to and cope with natural hazards.

Since October 2011 a seismic swarm is affecting the Pollino mountain range, Southern Italy. At present the sequence is still ongoing, with more than 500 events with M>1, at least 40 well perceived by the population and a maximum magnitude at 3.6. The area mainly affected by the seismic sequence includes 12 villages, with a total population of about 50.000 inhabitants and, according to the current seismic hazard map it has high seismicity level. Such area was hit by a magnitude Ml=5.7 event in 1998 that produced macroseismic intensity not higher that VII-VIII degree of MCS scale and caused one dead, some injured and widespread damage in at least six municipalities.

During the sequence, the National Department of Civil Protection (DPC) and the Civil Protection of Basilicata Region decided to put in action some measures aimed at verifying and enhancing emergency preparedness. These actions have been carried out with a constant and fruitful collaboration among the main stakeholders involved (scientific community, local and national governmental agencies, civil protection volunteers, etc) trough the following main activities:

1. collaboration between scientific community and the local and national offices of Civil Protection especially in the relationship with local authorities (e.g. mayors, which are civil protection authorities in their municipality);
2. interaction between DPC, Italian Institute of Geophysics and Vulcanology (INGV) in order to transfer information to the population to enhance self-protection capability and decrease its state of worry (“what to do” in case of an earthquake);
3. review of local plans of emergency, where available, using ad hoc inspection forms to collect data for verifying and updating the emergency plan content and requirements.

Specifically, in order to prepare seismic scenarios of building damage and effects on population for emergency planning and civil defense drills to be organized, two more activities have been carried out:

4. collection of current vulnerability data on the building stock and the strategic infrastructures located in the area;
5. accurate survey of data on post earthquake retrofitting and microzonation actions carried out after the 1998 Pollino earthquake that struck the same involved villages.

In some cases, as a consequence of the position of the involved area, the activities were carried out also in collaboration with Calabria Region authorities.

Several points have arisen in carrying out the activities, mostly due to the interaction between risk governance and risk perception in the pre-event emergency management. At the abstract submission date the seismic sequence, and thus the activities here described, are still ongoing. Therefore, analysis and discussion of pro’s and con’s of the actions taken are currently in progress on a week-by-week basis.