Spatial and social behavioural analysis during and after the 2004 Chuetsu Earthquake. The Kawaguchi Village case of study

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Japan is a country with a high rate of number of earthquakes due to its geographical position and geomorphological constitution. Niigata prefecture, located on the Honshu Island on the coast of the Sea of Japan, has been struggled by a large number of earthquakes in this last decades. Even if the technology, in therms of anti-seismic constructions and natural disasters investigations, is in rapid development is not assuring yet a guarantee of safety. Especially in the rural areas were the technology is always slower to arrive. The aim of this study is to analyse spatially and psychologically the people behaviour during and immediately after an earthquake occurs. By understanding the level of preparedness and mapping their movements it will be possible to improve the actual situation by proposing more reliable solutions of emergency evacuation and emergency procedures.

The study area is the Village of Kawaguchi, located in the central part of the Niigata Prefecture. In 2004, one of the strongest earthquake (magnitude 6.8) of this century in Japan struck this area provoking large amount of damages such as houses (606 destroyed, 146 heavily damaged, 344 damaged), public administrations, schools and deaths (59 in total, 6 in Kawaguchi Village). This situation was due to the low amount of anti-seismic systems adopted in this area and to the geomorphological constitution of the soil, that produced a large number of landslides.

Understand how people behaved in these moments is capital to avoid future tragedies and improve the level of security in rural areas.