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Performance of Early Warning Systems on Landslides in Central America

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We performed a reconnaissance about Early Warning Systems (EWS) on Landslides (EWSL) in the countries of Central America. The advance of the EWSL began in the 1990-ies and accelerated dramatically after the regional disaster provoked by Hurricane Mitch in 1998. In the last decade, Early Warning Systems were intensely promoted by national and international development programs aimed on disaster prevention. Early Warning on landslides is more complicated than for other geological phenomena. But, we found information on more than 30 EWSL in the region. In practice, for example in planning, implementation and evaluation of development projects, it is often not clearly defined what exactly is an Early Warning System. Only few of the systems can be classified as true EWSL that means 1) being directly and solely aimed at persons living in the well-defined areas of greatest risk and 2) focusing their work on saving lives before the phenomenon impacts.

There is little written information about the work of the EWSL after the initial phase. Even, there are no statistics whether they issued warnings, if the warnings were successful, how many people were evacuated, if there were few false alerts, etc.. Actually, we did not find a single report on a successful landslide warning issued by an EWSL. The lack of information is often due to the fact that communitarian EWSL are considered local structures and do not have a clearly defined position in the governmental hierarchy; there is little oversight and no qualified support and long-term support. The EWSL suffer from severe problems as lack of funding on the long term, low technical level, and insufficient support from central institutions. Often the EWSL are implemented by NGO′s with funding from international agencies, but leave the project alone after the initial phase.

In many cases, the hope of the local people to get some protection against the landslide hazard is not really fulfilled. There is one case, where an EWSL with a good technical base was installed in 2001 in an area with risk of lahars. The system was too complicated to be managed by the municipality or there was not sufficient training, and soon the system stopped working. In 2009, lahars were triggered by extreme rains and around 100 people died in the area previously covered by this EWSL.

We discuss the reasons for the poor performance of the projects developing EWSL in Central America and present proposals to make the more efficient and sustainable.

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