



Crowdsourcing risk and measuring resilience: Insights from the Zurich Flood Resilience Alliance

Ian McCallum (1), Wei Liu (1), Adriana Keating (1), Finn Laurien (1), Michael Szoenyi (2), and Reinhard Mechler (1)

(1) IIASA, Laxenburg, Austria, (2) Zurich Insurance Company, Zurich, Switzerland

The Zurich Flood Resilience Alliance, initiated and funded by Zurich Insurance, brings together NGO partners, academia and the private sector to help build flood resilience in communities across the globe. We highlight two innovative efforts of risk and resilience knowledge co-generation innovatively blending local knowledge with earth observation technology.

Risk data is sparse in many vulnerable regions and global expert-generated models are often too coarse in terms of resolution. Participatory Vulnerability Capacity Assessment is a widely used tool to collect local risk and resilience information, yet not linked to digitised information. Combining such community-based participatory mapping processes with internet-based collaborative techniques, our approach digitises maps on disaster risk and community resources where locations of rivers, houses, infrastructure and shelters are usually hand-drawn providing critical information used by local stakeholders. Such new digital community maps, uploaded and overlaid with satellite imagery or OpenStreetMap as taken forward with collaborators in Nepal, Peru and Mexico, are richer in content, more accurate, and easier to update and share than conventional approaches. Understanding what builds resilience is fundamental to informing action, yet few systematic and large-scale efforts have systematically measured resilience.

To this effect, the Alliance developed the Flood Resilience Measurement Framework for Communities (FRMC) to benchmark and track the underlying sources of resilience. The FRMC involves measuring a community's sources of resilience pre- and post-disaster, operationalised around 5 types of assets (human, natural, social, physical and financial) and their interactions. Resilience sources are qualitatively graded based on household surveys, community focus groups, expert informants, and other third-party sources. Sources are assessed by specially trained NGO experts embedded in communities, while data is collected globally via an integrated mobile and web-based system. Through an inclusive process and technology, the measurement framework and tool, rolled out globally in Latin America, Asia, Europe and the US to more than 100 communities, has helped communities and development partners make improved decisions on how to build resilience.