A humanitarian preparedness toolbox: estimating flood affected figures and exposure of livelihoods to future floods events, using freely available datasets.

Paolo Paron, Craig von Hagen, Stefano Peppino Disperati, Budi Hermansyah, Imra Shaheen, Qasim Jan, Andrea Berloffa, Ruby Khan, and Alam Fakhre

UNESCO-IHE, –, Water Science & Engineering, Delft, Netherlands (p.paron@unesco-ihe.org)

Pakistan is highly disaster-prone, with three major flood disasters occurred in the past three years, yet major losses are not inevitable. Farming-based families still struggling to recover from 2010 and 2011 floods have again faced another bad monsoon season in 2012. Meanwhile, the likelihood of yet more natural disasters in the future is high as the phenomenon of climate change is increasing the prevalence of extreme weather conditions. Even with less rainfall, the risk of flooding this year remains high, while many villages have not fully recovered from the 2011-2012 floods. It is of utmost importance to support the most vulnerable rural communities to recover their flood-affected livelihoods. In the meantime, prioritizing disaster preparedness through flood hazard and population mapping is crucial to ensure that realistic contingency plans are in place to deliver an effective and timely response and reduce the impact of floods before they strike.

To increase preparedness in future floods, an integrated approach that builds the resilience of flood affected community and enhances emergency preparedness based on reliable data is critical.

We present here the innovative methodology developed for estimating population and livelihood that could potentially be affected by a future flood scenario, as well as a methodology for knowing where these people are located, along with an overview of their livelihood pattern. This project has used only freely available dataset, due to the urgency of providing a toolbox to the humanitarian community and the absence of readily available detailed information on natural hazards and exposure in Pakistan. The estimated figures resulting from this project, would provide the Food Security stakeholders with adequate information and data for programming a tailored response in case of floods during future monsoon season.

For the purpose of preparedness, understanding the risks, and its potential magnitude, is crucial to provide decision makers with timely information that can serve as a baseline to inform assessments, data analysis and programming of response. Having an estimate of the potentially affected people and agricultural areas before a disaster occurs, can contribute to an organized, appropriate, more timely and targeted response. We also developed a web-based mapping tool to allow remote access to relevant real-time data and scenarios.

By combining maps of land cover, crop zones, flood hazard and population, this project has provided essential geographic orientation for food security preparedness analysis, and is essential for the following reasons:

i. It provides the basis for quantifying population at risk of food insecurity before a disaster occurs;

ii. It provides a stratification for any post-disaster assessment;

iii. Combined with a FS&L (Food Security and Livelihood Assessment), it helps to inform the Food Security response analyses and assistance targeting;

iv. It complements and inform the district-based HLV (Hazard Livelihood and Vulnerability baseline and contingency plans) with data and analyses at country and provincial level linked with agriculture seasonal calendars, main key production cycles, and seasonal hazards;

v. It provides inputs to any future activities under the Integrated Phase Classification (IPC) project.