



## Measuring flood resilience: A Typology of Community Flood Resilience

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### Abstract:

There is an urgent need to better understand the benefits and costs of investments into building resilience, and the decision-making processes that determine them. To tackle this challenge the Zurich Flood Resilience Alliance (ZFRA) developed a holistic approach for measuring flood resilience at the community level across the globe. The framework and associated data management tool builds on the five capitals (5Cs) of the Sustainable Livelihoods Frameworks, and the four properties of a resilient system (4Rs). Over 2 years five NGOs collected baseline, endline, and outcome measures (if a flood occurred) in 118 communities in 9 countries, with more than 6700 direct engagements of households, discussion groups and key informants. It is estimated that more than 200.000 people have been positively affected by enhanced knowledge generated through the Flood Resilience Measurement Tool. As a key result, this paper identifies general dynamics and inter-dependencies between flood resilience indicators, which will help to build more consistent and reliable indicators for measuring flood resilience. The results identify different community clusters in terms of baseline flood resilience grades and general community characteristics, which indicates that flood resilience has common patterns across the world. The quantitative results also proved to be a powerful tool for decision-support and advocacy. With regard to disaster resilience practice, we find that the process of implementing the FRMC tool facilitated in-depth discussions about communities and flood resilience, and that this had a capacity building effect within user organizations.

A general conclusion is the increasing relevance of baseline studies for any decision-making process to inform policy-makers at different levels. We glean learnings about the communities from the baseline data, which will be critical when we proceed to test the post event and endline data.

### Biography:

Finn Laurien joined the Risk and Resilience (RISK) Program as a Researcher in 2016. His current scientific interests include the analysis and modelling of driving factors of resilience, compound risks and sustainable transformation. His recent



research projects include the measurement of resilience indicators in the Zurich Flood Resilience Alliance, and the assessment of compound risks due to climate and disaster risks. At IIASA, he works on developing resilience typologies and community adaptation pathways towards a more resilient and sustainable development. He has experience in quantitative and qualitative methods and contributed to the interdisciplinary collaborations between scientists and practitioner at national regional and regional scales. Furthermore, Dr. Laurien is interested in the broader topic of monitoring and evaluating sustainability processes with financial and non-financial performance indicators.

### Publication of speakers:

- Finn Laurien et al; Standardized disaster and climate resilience grading: A global scale empirical analysis of community flood resilience, Jan 2020
- Finn Laurien et al; Flood resilience measurement for communities: data for science and practice, Jan 2019
- Finn Laurien et al; Lessons Learned from Measuring Flood Resilience, Oct 2015
- Finn Laurien et al; First insights from the Flood Resilience Measurement Tool: A large-scale community flood resilience analysis, Nov 2016
- Finn Laurien et al; Evidence from Measuring Community Flood Resilience in Asia, Nov 2019

[2nd Edition of Challenges in Global Climate Change and Oceanography, Nov 17, 2021; Paris, France.](#)

**Citation:** Finn Laurien; Analysis of extreme summer temperatures in Saudi Arabia and the association with large-scale atmospheric circulation; Euro Climate Change 2021; November 17; Paris, France.