

## 22 | Participation

Environmental impact	3/3
Risk protection	3/3
Durability	3/3
Affordability	3/3

### Intro

In the context of flood risk management, participation promotes the interaction among the stakeholders that are responsible for and affected by the implementation of the mitigation measures. Stakeholder engagement allows the (public, private, and local) stakeholders to come together for a dialogue on the interventions before and after their implementation.

Mapping the risk is one of the first steps to know what strategies would be best adapted to respond to a flood event. Hazard maps can be prepared using global and local data to draw a model of the probable extent of potential floods. Risk assessments will highlight the assets in need of protection and help prioritize mitigation actions. The process can involve participatory mapping. After identifying the essential stakeholders, the project initiator should actively listen and document the diverse perspectives. Then, the stakeholders' ideas and wishes should become part of the overarching goal and a common agenda for flood risk mitigation (and its monitoring) in the refugee camp.

The present project on risk mitigation strategies also includes guidelines for participatory mapping including semi-guided interview templates and a proposal for organization of mapping workshops.

### Benefits and Risk

Participation permits the acknowledgment of different knowledge systems (*scientific, local, indigenous*) within a broader socio-political and cultural context (*Hofer and Kaufmann 2022; IPCC 2022b*). Local knowledge can help tackle natural hazard risks in humanitarian settlements based on two categories. First, it can support the observation and prediction of changes in the natural environment. Second, laws valuing the natural environment such as non-building zones on riverbanks or the prohibition of logging can enhance the overall respectful approach to natural ecosystems while mitigating natural hazards (*Hiwasaki 2017*).

### Good practice

#### Raising community awareness in Myanmar.

The awareness of cyclone impacts has been raised within the community of the Irrawadi Delta in Myanmar. While building storm shelters for village communities in the delta, the Swiss Development Cooperation (SDC) integrated a strong participatory approach and disaster risk reduction (DRR) component into the process. The goal was to strengthen the population's resilience, capacity for self-reliance, and self-protection. To ensure a comprehensive and participatory approach, SDC prepared participatory workshops on community hazard mapping, mock drill training, role-playing exercises (simulations), tree-planting awareness sessions (including mangroves), and education on shelter/WASH maintenance.



**Hiwasaki, Lisa: Local Knowledge for Disaster Risk Reduction Including Climate Change Adaptation.**  
With assistance of Ilan Kelman, Jessica Mercer, J. C. Gaillard.  
In: *The Routledge Handbook of Disaster Risk Reduction Including Climate Change Adaptation*, pp. 227–237.

**Hofer, Katrin; Kaufmann, David (2022)**  
*Actors, arenas and aims: A conceptual framework for public participation.* In *Planning Theory*, 147309522211395.  
DOI: 10.1177/14730952221139587.

**PCC: Climate Change 2022**  
*Impacts, Adaptation and Vulnerability. Summary for Policymakers.* In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.*

**Pötz, Hiltrud (2016)**  
*5 steps to stakeholder engagement and co-creation.*  
Available online at  
<https://www.urbangreenbluegrids.com/sponge/guide/>, checked on 11/2/2022. Poitz 2016 (Hill Town)

## Overview of Criteria

### Type of Intervention:

Non-structural.

### Scale of Intervention:

Shelter-Plot-Block, Settlement.

### Materials:

NA.

### Environmental Impact:

NA.

### Targeted Natural Hazard:

Pluvial Flood, Coastal/Riverine Flood.

### Targeted Vulnerable Assets:

Buildings, Transport.

### Strategy Type:

Reduce Casualties.

### Implementation Time:

Short (1 day - 1 month), Medium (1 month - 1 year).

### Effect Duration:

Medium - term (1 year to 10 years).

### Investment Costs:

Low.

### Maintenance Costs (yearly):

NA.



## **Flood Risk in Humanitarian Settlements: Compendium of Mitigation Measures**

**Spatial Development and Urban Policy, SPUR**

**ETH Zurich - Institute for Spatial and Landscape Development**

Bruna Rohling, David Kostenwein, Mona Gairing, David Kaufmann

**Geneva Technical Hub, co-convened by UNHCR and SDC**

Ammar Al-Mahdawi, Emilie Schmid, Eric Bardou

**External Experts**

Mrudhula Koshy, Diego Bermúdez, Jonathan Parkinson

**Layout and Drawings**

Santiago Beaumé, Paola Pabón

**Cite as**

Rohling, Brunna; Kostenwein, David; Gairing, Mona; Al-Mahdawi, Ammar; Schmid, Emilie; Bardou, Eric; Kaufmann, David (2023) Flood Risk in Humanitarian Settlements: Compendium of Mitigation Measures. Zürich: ETH Zürich, UNHCR. DOI: 10.3929/ethz-b-000645680

**ETH** zürich

**SPUR**  
Spatial Development and Urban Policy

