











The Zurich Flood Resilience Alliance Building resilience in Semarang, Indonesia

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- The Alliance / Where we work
- Review of Approach and Framework
- Timeline / Progress steps
- From Baseline to Resilience-Building
- Case Study: Application in Indonesia by Mercy Corps
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Zurich's flood resilience program is one of Zurich's key focus areas



- As insurers we know the impact floods have on people's lives and how much damage they can cause. Our mission is to help customers understand and protect themselves from flood
- The flood resilience alliance comprises of 5 organizations
- The program comprises a five-year commitment, and includes an investment of ca. USD 37.2 million by the Z Zurich Foundation from 2013-2018
- Together with our alliance partners we focus on pre-event floc mitigation, as opposed to post-event flood relief
- We at Zurich provide in-kind work time, skills and expertise





Our motivation to work on communitybased flood resilience



- Floods globally affect more people than any other natural hazard
- We find: 1\$ invested in prevention saves 5\$ in future losses
- But only 13% go into pre-event resilience & risk reduction, 87% go to post-event relief
- Communities feel impacts most immediately. This is the level where we can take concrete action

Our motivations:

- Demonstrate and measure resilience-building <u>impact</u> by our alliance working model, thus enhancing the <u>social return</u> on the Z Foundation's investment
- Create innovative resilience solutions by bringing in our skills & expertise and scale them beyond our alliance
- Creating <u>shared value</u> by benefitting communities, our NGO partners, public decision-makers and our customers
- Be a leader in the private sector's role to enhance pre-event mitigation over post-event relief











Alliance members and boundary partners











The Zurich Alliance Filling a Gap

A recent study (2014) by Thomas Winderl for UNDP reviewed all of the models that are publically available and concluded that:

"no general measurement framework for disaster resilience has been <u>empirically verified</u> yet."

Why Develop a framework and tool to measure (flood) resilience?

- Demonstrating impact on the ground
- Addressing the measurement gap by providing a consistent process
- Contributing to the evidence of what is resilience



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The Zurich Alliance Approach

A few definitions for our Resilience Measurement Framework

- Flood resilience looks at resilience to <u>a specific peril</u> i.e. floods
- Our focus it at the community level where the flood impacts are often most acutely felt.
- Community Flood resilience, then, is the ability of a community to pursue its social, ecological and economic development and growth objectives, while managing its flood risk over time, in a mutually reinforcing way.
 - In other words, if a flood-prone community has flood resilience, its development will not be derailed due to flooding.

A set of existing models and Zurich's Risk Engineering Approach led to our resilience measurement framework ZURICH[®]





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Steps to measure and build resilience



- Out of an initial phase, 75 communities have now completed baseline resilience measurements. Some organizations have added "external" communities for additional benefit
- All organizations are moving along baseline analysis to selecting and implementing resilience-building "solutions" or "interventions"
- Post-flood surveys are ready in case of flood some have been completed, some are underway: Two time-frames of resilience



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Picture: Practical Action Peru, Rio Rimac



Analyzing and interpreting results

Example of looking through themes lens – output from the tool





Analyzing and interpreting results

Example of potential insights from viewing Themes and 4Rs combined: While some good robustness has been built into the community, the community might benefit from focusing on building in some key redundancies or resourcefulness, particular in assets and livelihoods, life and health and the natural environment.

Themes / 4Rs	Rapidity	Redundancy	Resourcefulness	Robustness
Assets and Livelihoods		D	С	С
Education	В		В	В
Energy	В	С		А
Food	D			С
Governance	С		С	С
Life and Health	С	D	D	С
Natural environment		D	D	
Transport and Communication	С	С		С
Waste	D			С
Water	D	В		С



Using the results

- Number and Grade: Not the outcome! Use as a guide to what the data means. No absolutes, but relatives and part of a time trajectory.
- Grades provide insight into planning processes for appropriate actions.
- Results are not intended to replace intervention planning approaches. Not a decision-making process, but supports more-informed decisionmaking.
- Data can be viewed through a number of. Drill down into components.



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APPLICATION OF FRMT TO ENHANCE COMMUNITY-BASED FLOOD RESILIENCE IN SEMARANG CITY, CENTRAL JAVA, INDONESIA

Zurich Flood Resilience Program

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Context of FRMT Application by Mercy Corps Indonesia

- Applied in Semarang City, Indonesia; urban areas, 1.6 million citizens, the city already have an ad hoc multi-stakeholder forum on urban resilience & climate change adaptation.
- The way we use FRMT results considered works well in Semarang; developed areas, good level of engagement with the local government, and experience on multistakeholder partnership.

ZURICH FLOOD RESILIENCE PROJECT

Context of Semarang City

- With 21 rivers criss-crossing its topography, 34% lying in coastal or low lying areas and 66% in the hills, Semarang is particularly vulnerable to floods.
- Urban migration; >population,
 >drainage problems, >solid waste,
 >built areas and so on.
- The effects of climate change; SLR, high waves, more intense rainfall.
- + Opportunity to replicate successful approach of DRM project in Beringin River.



ZURICH FLOOD RESILIENCE PROJECT

Project Area



Measurement: How much resources needed for baseline data collection?

- 16 communities, completed in total of 6 months
- We trained 3 MCI staff, and 12 lead researchers and enumerators.
- The grading process takes 3-5 days for each communities (total of two months). The grading process were done by MCI staff, and reps from LG and local NGO/community facilitators.



ZURICH FLOOD RESILIENCE PROJECT - INDONESIA

Additional tasks required to accompany the FRMT process

- Stakeholder Mapping; to understand the governance and social cohesion in the community level, identify local champions and vulnerable groups, identify existing social networks and whether it works effectively.
- Acquire administrative maps from local government
- Participatory planning process;
- Business as usual; engagement with the Semarang City Climate Change Resilience Team; involve them in the process, explore interest and potential long term use of FRMT.



ZURICH FLOOD RESILIENCE PROJECT

Using FRMT Results to Support Decision Making

- Community Based Disaster Risk Management (CBDRM) Plan.
- 2. Select and design interventions
- 3. Leverage Funding from Local Government Budget (and other external funding)
- 4. Create an advocacy plan for DRM





Using FRMT Results for Community Based Disaster Risk Management (CBDRM) Plan



1. USING FRMT RESULTS FOR CBDRM PLAN Results of FRMT - Example

Communties > Scoring



Capital		
Financial	43	
Human	50	
Natural	11	
Physical	60	
Social	35	





1. USING FRMT RESULTS FOR CBDRM PLAN

Results of FRMT - Example



 Although this tells what themes are weak, it doesn't really tell communities the reasons.





1. USING FRMT RESULTS FOR CBDRM PLAN

Results of FRMT - Example

	A	В	C	DE
18	τ,	Resilience Source Name	Grade	Average of Score
19	Assets and Livelihoods	Basin Level Flood Controls	С	33
20		Conservation management plan	С	33
21		Flood exposure management knowledge	С	33
22		Flood exposure perception	В	66
23		Flood vulnerability perception and management knowledge	В	66
24		Flood Water Control Knowledge	В	66
25		Individual (HH) Flood Vulnerability Management	С	33
26		Mutual assistance systems and safety nets	D	0
27		National legislation recognises habitat restoration	С	33
28		Non-erosive flood recovery knowledge	В	66
29		Social norms and security of assets	С	33
30		Understanding of future flood risk	С	33
31		Communal Flood Protection (Flood controls)	С	33
32	Assets and Livelihoods Total			41
33				
34	Education	Inter) National Disaster Response budget	D	0
35		Access to school facilities	A	100
36		Educational attainment	В	66
37		Functioning and equitable education system	С	33
38		Strategy to maintain or quickly resume schooling interrupted by flooding	D	0
39		Value of education	A	100
40	Education Total			50
41				
42	Energy	Appropriate and equitable access to energy	A	100
43		Energy sources	D	0
44		Strategy to maintain or quickly resume local energy supply in the event	С	33
45	Energy Total			44
46				
47	■ Food	Food security	В	66
48		Functioning and equitable food supply systems	A	100
49		Strategy to maintain or quickly resume provision of local food supplies i	С	33
50	Food Total			66
51				
52	Governance	Community representative bodies/structures for flood management of	D	0
53		Coordination mechanism across communities		33
54		Culture for community information sharing	В	66
55		Flood regulation and local enforcement	С	33
56		Government policies & planning and mainstreaming of flood risk	С	33
	Start Capi	tal Theme 4R DRM Context (+)		

Ready

And showing them all of them, can be too much, and too technical.



What information from FRMT are useful for this process?

- List of Source of Resilience with C & D Score to understand what is their weaknesses for different types of themes.
- Rationale why it's weak.
- The complete results of 88 sources of resilience are displayed in the CBDRM Plan, based on grades.



How FRMT Results Fits into Community Action Planning Process





Findings from Using the Tools for CBDRM

- Results of FRMT are useful to inform the intervention designs. (to be used with other information from stakeholder mapping, community engagement process, etc.)
- For communities, the rationale is more important than the score.
- Although the sources are scored C and D, not all of them are considered urgent and important or relevant by the communities. (Ultimately, the community gets to say about their real needs and have more ownership in doing this actions)



Using FRMT Results to Select and Design Interventions



From results to implementation.



2. USING FRMT RESULTS TO DESIGN INTERVENTIONS

Designing action by communities, within the CBDRM process





Criteria Used to Detail and Prioritize Actions (by communities)

Criteria: (1)Feasible and (2) Community Participation

The community decides whether actions is feasible by considering:

- 1. Whether the actions can address their problems and in what aspect.
- 2. Duration of actions
- 3. Sources of funding
- 4. Who will be responsible in coordinating the actions
- 5. Size/scope of the locations (and where)
- 6. Whether it needs specific skills/expertise
- 7. Risks that might happen in doing this actions.





Example of Criteria Used to Decide which Actions to be Funded (by MCI)

Principle Criteria: Do-No-Harm--Does not have the potential to negatively impact on other sources of resilience, target communities, the environment, infrastructure etc.

Primary Criteria:

- 1. Improves sources of resilience. Score 2 if the action can improve more than one source. Score 1 if the action can only improve one source.
- 2. Provides collective instead of individual benefits.
- 3. Get affected from flooding/innundation for the last three years
- 4. Not funded by the City Budget.
- 5. Feasible. The community matrices will be re-assessed by MCI, IUCCE, and the Semarang City Government.
- 6. Ensures community participation. The community must state their commitment to participate in the project.
- 7. Replicable.
- 8. Achievable and tangible in less than 12 months.
- 9. Innovative.





Example of Criteria Used to Select the Interventions for Funding

Secondary Criteria:

- 1. Provides benefits for more than one community thereby allowing for collaboration and economies of scale across communities.
- 2. Pays attention to a wide range of gender group needs. The action benefits and involves men, women, the elderly, children, teenagers, and people with disabilities. These groups are not solely acting as beneficiaries, but are considered active agents of change.
- 3. Complements or strengthens other community actions funded by CFRMP
- 4. Provides economic benefits for the target communities.
- 5. Has the potential to be continued independently by the communities, for example through in-kind support or community co-financing.





Findings from Using the Tools

FRMT Results are helpful to confirm our assumptions

Initial assumptions : Establishment of Disaster Community Groups and strengthen their capacity, Solid Waste Management, and Vegetation to prevent erosion/reduce run off Confirmed : Establishment Disaster Community Groups (structure, knowledge and social networks), Solid Waste Management, and Flood Information

 Many of the sources of resilience are straightforward, such as first aid training, availability of community groups that can coordinate on DRM and therefore easily informing the intervention design.



Using FRMT Results to Leverage Funding from Local Government Budget (and other external funding)

3. USING FRMT RESULTS TO LEVERAGE FUNDING FROM LOCAL GOVERNMENT BUDGET



Bridging CBDRM to Implementation.

Finalized CBDRM

Matrix of Action Descriptions vs Relevant Agencies Involvement CBDRM shared to communities and acknowledged by Village Level Official Govt, City Local Development Planning Agency and City Disaster Management Board

Communities used the information in CBDRM to proposed funding through *Musrenbang* Opportunity to be funded next year

Local Development and Planning Agency invites all relevant Gov't Agencies to check whether there's an opportunity to implement the actions by City Budget

Actions funded in the same year



Using FRMT Results to Create an advocacy plan for DRM





Understanding Community Needs Collectively for Advocacy Purposes







Overall findings from FRMT

- It is important to contextualize the results of FRMT and ensure the findings are communicated in the right language to the right audience.
- It is important to integrate the FRMT process to other existing programs/initiatives (internally within the organization and externally incl. local development planning process).
- The FRMT process should not be treated as a stand alone tool, but integrated to our program cycle (informing the decision making process) in many stages.
- The FRMT doesn't tell you what decisions needs to be made, but help to guide decisions that enable us to invest on the right resilience building actions.
- The FRMT helps us to record a comprehensive information in one place and open up opportunities for further analysis.





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Implementing the Zurich Alliance flood resilience measurement tool with Plan International Nepal



Fishermen on the Kosi river in front of an Indian building site, Nepal

Testing the new flood resilience measurement tool with our NGO-partner Plan International in Nepal has surprising effects

The non-governmental organization Plan International is one of five additional organizations the Zurich Flood Resilience Alliance is working with to apply and test our recently developed flood resilience measurement framework and tool. Our effort aims to demonstrate that flood resilience can actually be measured at community level in contexts ranging from the United States to Afghanistan to Timor Leste and Nepal, and that practical action can then be taken to tackle the issues highlighted by the tool and therefore strengthening the resilience of the communities to flooding. In Nepal, Plan International, is mostly working with and through children, giving our approach a new spin. Since bringing the partners who use this tool all together in Zurich for a training workshop, they have all made big progress in their country programs. Here, Isabel Sommer, Program Manager for Plan International Switzerland, explains some of the surprising effects the tool has had, returning from a field visit to Kathmandu and the project communities in the Kosi River Basin in the eastern lowlands, the Terai of Nepal.

From information collection to two-way communication

The measurement tool requires information on the five capitals of sustainable livelihoods that can be collected through different methods, one of which are household interviews. The discussion with householders directly is always an important information source, but in shorter, 'standard interviews' rarely a lot of interaction develops.

"There is a lot of information we need to collect in household interviews. We were afraid this would take up too much of people's time, but in fact they appreciated that we took the time to ask about their experiences."

But this time, the type and level of detail of the questions really spawned the interest of many people interviewed. They started realizing that resilience means more than 'holding back the river', as a community member put it.

In fact, they got so culicus they started to adk very relevant que tions on their own, learning about the concept of resilience and how risk reduction before a disaster strike could apply to them. It was both educational for the community inhabitants as well as for our field-workers who conducted the interviews, said label.

Educational effects and positive but unexpected consequences

Working with the tool was highly educational for the entire Plan International team dealing with the project. A recent visit by Isabel to the team in Nepal highlighted that measuring resilience not only brings a new approach to existing programs, it is also a learning experience for Plan International employees and beneficiaries. Being exposed to the questions coming back from the interviewees, and having the intense discussions with them, allowed the fieldworkers to reflect more deeply on the concept of resilience and what it means for them. We believe this is a critical step in finding new, innovative ways to then take action on the tool's results and design resilience-building solutions. The fieldworkers realized that even during the interviews, knowledge was transferred to the communities: 'Because we asked so many questions on the different sources of resilience, people realized that all these areas are important for making their lives safer.' A very important point for lsabel is an inclusive approach: 'For us as a child rights organization it is extremely important to make children's voices heard and their needs considered. I taked to Bina Mazhi, who is 16 years old and a child representative of the Local Disaster Management Committee (LDMC). She told me she wanted to become a member so she could better raise children's issues like making sure their way to school is safe at all times. For Bina, continued education is one of the most important issues."



Itabel Sommer, Plan International Switzerland, meeting with child representatives of LDMC in Letang, Nepal



Overview in numbers

- 75+ communities in 12 programs
- Roughly 600'000 data points when endlines complete
- Used both as decision-support for resilience building interventions and for verification of resilience impact («outcomes of resilience»)
- Large data base to support the scientific validation process
- Iterate and improve with «Next Gen» tool in 2018+



Key learnings

- Work with and through partners. Learn from each other. "Peer group" events.
- Process is tough and time-consuming. But it works, and works well.
- Depth of interviews is time-consuming but establishes trust and grabs the attention of the interviewee. Fosters a discussion.
- Taking time to analyze before implementation is key. "This is almost doing programs the other way round and the way it should be."
- *"The process is almost as valuable as the data and results. It brings people together to think consistently about resilience."* It helps think and creates discussions beyond BAU across the full resilience spectrum.



Key learnings (cont'd)

 FRMT is meant to be scaled, and can be. Many organizations have already leveraged this into other programs, or wider contexts (Afghanistan Resilience Consortium; M-RED program etc).

- Good indications that this approach is
 - Creating discussions beyond the community scale.
 - Attracting further funding / budget provisions, achieving our high-level goal:

Shift the needle from post-event relief and recovery spending into pre-event resilience and risk reduction investments.













- Videos explaining the approach in detail: <u>https://www.zurich.com/en/corporate-responsibility/flood-resilience/measuring-flood-resilience</u>
- Four-pager explaining the approach in text and illustrations: <u>https://www.zurich.com/_/media/dbe/corporate/docs/corporate-responsibility/zurich-flood-resilience-measurement-paper-feb-2016.pdf?la=en</u>
- The Alliance webpage: <u>http://floodalliance.net/</u>













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