

Innovation in Flood Resilience in Indonesia

Learning from a two-track innovation process

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Summary

In 2016 the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Indonesian Red Cross (Palang Merah Indonesia – PMI) together with their partner Zurich Insurance Indonesia (ZII) set out to find innovative ideas and initiatives related to flood resilience. It was the first such process in Indonesia.

Two approaches were used for discovering innovative ideas: The Innovation Challenge with a call for proposals and the 'Lead User' approach, a structured research approach that is commonly used in the private sector.

This case study report analyses and documents what can be learned from the application of these two approaches for identifying innovations. The report is based on a desk review and thirty-one interviews with the innovators and staff of the partners involved as well as participants and organisers of the innovation conference that took place in February 2017.

The innovation process aimed at creating opportunities for local innovators to engage with a broad range of actors to collaborate and to access support as well as to contribute to developing a network of innovators on floods resilience in Indonesia. Key features of the process were:

• Collaboration: A core group composed of ZII, the IFRC and PMI and further partners contributing to specific parts of the process.

• Two-track approach: The Challenge with an open call for the submission of innovations followed by a systematic criteria-based assessment. And the Lead User approach, a research-based process aiming at the identification of Lead Users, which develop solutions for their own need and earlier than others.

• Milestone event: Innovation conference in February 2017 with the final selection of the winners of the Challenge, the presentation of the innovations identified through the Lead User approach as well as various inputs and networking opportunities.

In addition, a next phase was planned to follow the above: the incubation of the preferred and most relevant ideas for their development and possible use. Main learning and recommendations

1. Do it - Initiating a formal process in order to discover innovations related to flood resilience in Indonesia is a valuable undertaking. Besides the identification of ideas and initiatives, the process opens opportunities for generating new insights into the topic, for creating or reinforcing networks and for establishing linkages beyond common sectors and institutional settings.

2. Do it with partners – Involve the 'right' partners and plan their engagement systematically. A good partner structure combines a core group of local actors that are representing a cross-section of the sector of concern with partners providing key capacities needed for organising an innovation process (e.g. experience in designing and in managing methods for discovering innovations, thorough project management).

3. Let the purpose guide you – Define clearly who is asking for innovations to be identified and for what purpose. Make explicit which actors are expected to use them and how this will benefit the main interest group (user and end-user benefit). Knowing well the user and end-user benefit will help you in tailoring all phases, from defining the scope of the challenge to determining which follow-up activities are needed once the innovations are identified.

4. Combine approaches – Consider combining different approaches and align the follow-up activities to the kind of innovation identified. The Challenge has found innovations that are in an earlier stage of development and thus require follow-up support in further developing the ideas. The solutions represented through Lead Users overall were more advanced and thus the follow-up support can address integration of the solutions into existing programmes or business models.

5. Wide versus narrow – Formulate the innovation topic and the scope of the process widely if the intention is 'not to miss any solution that is out there'. Formulate it narrowly if you look for a specific solution. If you formulate the scope widely, consider that you might receive a large number of submissions and a wide diversity of applications with mixed potentials. Chose narrow selection criteria and apply a rigid assessment of applications so that you balance the wide scope of the topic.

6. Flexible where needed and steady where possible – Apply rigid project management and at the same time remain flexible for process steps that are less predictable (e.g. follow-up to the submission of proposals). Ensure staff continuity and corresponding finances in order to navigate well through this multi-stakeholder and multi-step process.

7. Planning from the end and continuity – Define concrete activities and milestones for follow-up, uptake and integration right from the start. Allocate resources accordingly so that you avoid that attention and energy are largely concentrated on identifying innovations with other parts of the process receiving less attention and resources. If possible, plan for continuous efforts in screening the environment for new ideas so that you are contributing to a culture for innovation within an organisation.

Main Report

1. Introduction

In 2016 the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Indonesian Red Cross (Palang Merah Indonesia – PMI) together with their partner Zurich Insurance Indonesia (ZII) started the first initiative in Indonesia to identify innovative ideas and initiatives related to flood resilience.

The idea was to identify and to support local people who have developed innovative solutions on the theme of flood resilience and to connect them with major partners and other opportunities.¹

The initiative used a two-track approach for surfacing innovative ideas and initiatives. The first approach was an Innovation Challenge with a call for proposals and a jury for selecting the (cash) award winning ideas and prototypes. The second was the 'Lead User' approach, a structured research approach to identify innovation that is commonly used in the private sector but is not widespread in humanitarian assistance.

The Humanitarian Leadership Academy (the Academy) in collaboration with the IFRC has asked for a case study report with the aim to analyse and to document the learning from the innovation process and the application of two approaches for identifying innovations.

The case study is largely based on data from thirty-one interviews undertaken from May to August 2017 in person in Jakarta and by phone. Interviewees included innovators and staff of the partners involved as well as participants and organisers of the innovation conference that took place in February 2017.² A desk review complements the study.

According to the IFRC's World Disaster Report, globally floods (including waves and surges) are the most frequent trigger of natural disasters, followed by storms.³ Asia is the region with the highest number of flood disasters reported in the period 2006 to 2015.



Photo by Moritz Goeldner

Indonesia is continuously affected by many different kinds of natural disasters, ranging from floods and landslides, to volcano eruptions and earthquakes. Tornadoes are the most common natural disaster (around five hundred per year) followed by floods and landslides. Landslides caused the most deaths.4

The initiative to systematically identify and support innovation in flood resilience in Indonesia is linked to a programme that PMI in partnership with the IFRC and ZII implements in twenty-one communities in three river basins in Java since 2014.⁵ The principal programme components are preparedness, flood risk mitigation and advocacy for flood risk reduction.⁶ With the need for new solutions and innovations becoming imminent in this programme, the partners in 2016 launched the structured innovation process.

2. How it was done

In summer 2016 the partners agreed on their intention to create opportunities for local innovators to engage with a broad range of actors to collaborate and to access support as well as to contribute to developing a network of innovators on floods resilience in Indonesia.⁷ The idea was to support identified ideas and initiatives for example with grant funding, mentoring and partnership opportunities. Key features of the process were:

• Collaboration: A core group composed of ZII, the IFRC and PMI and further partners contributing to specific parts of the process.

• Two-track approach: The Challenge with an open call for the submission of innovations followed by a systematic criteria-based assessment. And the Lead User approach, a research-based process aiming at the identification of Lead Users, which develop solutions for their own need and earlier than others

• Milestone event: Innovation conference in February 2017 with the final selection of the winners of the Challenge, the presentation of the innovations identified through the Lead User approach as well as various inputs and networking opportunities.

• Incubation of best ideas and financial support provided to innovators to take ideas forward with PMI.

- ¹-Short introductory film ² See full list of interviews in annex 1.
- ³World Disaster Report 2016, Table 5, page 236
- ⁴ In 2014 around 340 people died according to the government. ⁵ Zurich Insurance and the IFRC have entered into a multi-annual strategic alliance within the framework of Zurich's flood resilience program that aims to enhance flood resilience by finding innovative ways to increase the impact of community disaster risk reduction efforts on both a national and global level.
- ⁶ See the detailed list of programme components in annex 6.
- ⁷ See detailed list of all expected outcomes in annex 5.

Milestones of the process

July 2016	Drafting of Concept Note		
September 2016	Preparatory workshop		
October 2016	Kick-off workshop for Lead User approach		
October to mid-December 2016	Submission period for the challenge		
October 2016 to February 2017	Identification of Lead Users		
February 2017	"Flood Resilience Innovation Conference": Short-listed nine innovators identified through the call for proposals presented and pitched in front of a jury at a two-day even in Jakarta and the Lead Users were invited to showcase their ideas		

3. Key decisions made and learning from the experience

3.1 Collaboration and the question of who to involve

What happened

Flood resilience is a topic characterised by a multi-stakeholder environment. At the same time, in Indonesia there is no obvious expert group or clearly defined network applicable to the topic 'flood resilience'. There is no clearly distinguished public policy or research field. The topic rather concerns different groups and expert networks such as disaster response actors⁸, actors engaged for the protection of the environment, authorities in charge of infrastructure, and more. Consequently, the initiating partners of the innovation process could not connect to any existing forum, expert or advisory group.

The initiating partners involved partners who brought in various expertise and capacities needed for designing and organising an innovation process.⁹

Partner	Role
PMI – Indonesian Red Cross	Main partner with IFRC and ZII Mainly contributed to the challenge
IFRC country office and headquarter (inno- vation unit)	Main partner with lead function
Zurich Insurance branch and headquarter	Main partner with IFRC and PMI
PulseLab Indonesia	Supporting partner for the review of proposals and in advisory role for the challenge process
Hamburg University of Technology, Institute for Technology and Innovation Management	Partner responsible for the Lead User Approach, providing the concept and methodology as well as the implementation
ITB - Bandung Institute of Technology	Supporting partner for the review of proposals
Humanitarian Leadership Academy	Supporting partner for the review of proposals, pro- viding one judge for the panel and supporting the learning from the experience
Global Disaster Preparedness Centre	Supporting partner with HR support and financial contributions

Further partners took part with limited engagement or specifically defined roles in single process steps only. $^{\rm 10}$

When looking at the partner structure it becomes obvious that Jakarta-based actors in Indonesia and partners from European headquarters appear prominently. Except for PMI, there was no actor involved with a significant role in directly implementing flood resilience initiatives in local communities in Indonesia. Despite efforts made, the engagement of government actors mostly did not work as intended.

How it went

Involving supporting partners that helped in designing and organising key elements of the innovation process was indispensable. The initiating partners successfully involved partners who brought in various expertise and capacities needed for designing and organising the innovation process. ¹¹

Still, among the partners, mainly the small core group composed of IFRC, PMI and Zurich had the strong interest in the topic of flood resilience and thus in the results of the innovation process.

The international partners had the interest to promote new approaches in identifying innovations and saw the opportunity to gain experience in organising innovation processes in their global organisations. While these are well-justified interests, local actors with a similar strong interest in finding solutions for concrete problems at local level were missing. Furthermore, the process could not be linked to an already existing local interest group that is representing a cross-section of the sector.

Consequently the processes turned out to be driven by international partners, even if the intention was to run it locally.



⁸ In Indonesia there is good capacity in disaster response while here the programme partners focus on resilience and thus the intention is to prioritise prevention and preparedness over disaster response and rehabilitation.

⁹ See further details on the main partners in annex 4.

¹⁰ E.g. Care International and Philips Indonesia took part in one meeting and ANGIN contributed to the conference and the panel of judges.

¹¹ See further details on the main partners in annex 4.



What we recommend for next time

1. Invest in analysis of actors - At the beginning of the process invest in a systematic analysis of actors in order to identify those (local) actors with a strong interest in the topic and in finding new solutions and innovations relevant for the problem you intend to solve.

2. Identify users - In order to tailor the innovation process to particular needs of local actors, clearly define who is asking for innovations to be identified, for what purpose and with what level of urgency. Make explicit which actors are expected to use the innovations and how this will benefit the main interest group (user and end-user benefit). Knowing well the user and end-user benefit will help you in tailoring all phases, from defining the scope of the challenge to determining which specific follow-up is needed once the innovations are identified.

3. Engage main interest group right from the start - Engaging those actors from the beginning and involving them in key-decisions of the innovation process will ensure that the undertaking is driven locally and that the identified innovations are relevant.

4. Work with a core group - Working with a core group of actors in the process design phase and beyond proved to be useful for the stakeholder engagement. To improve the engagement of actors further it is recommended to compose the core group in a way that it represents a cross-section of the entire sector. This representative group can help in taking key decisions and can act as a sounding board throughout the process.

If there is no obvious group of actors identifiable, do a comprehensive analysis of stakeholders around the following questions that help in identifying the 'right' partners:

- Who has the power or the ability to support the identified innovations in flood resilience?
- Who has the resources (time, people, money)?
- Who has the expertise and (specific) information on the subject matter needed to shape the thematic scope?
 Who needs to be involved because they will be
- affected by or benefit from the outcome and can

speak of the consequences?

5. Include key capacities in the group - The group of partners should address the above-mentioned needs as well as providing key capacities, which are needed for organising an innovation process, such as:

• Thorough project management;

• Hands on experience in designing and in managing methods for surfacing innovations (e.g. challenge or Lead User approach);

• Social media expertise for the outreach;

• Experience in organising matchmaking/pitching events;

• Hands on experience in supporting start-ups, social business development and similar.

3.2 Identifying innovations: "The Challenge"

How it was done: The scope of the topic

The organisers of the challenge opted for a wide thematic scope ("flood resilience"). They formulated only a few specifications¹² and subthemes ¹³. However, the categories were only loosely applied in order to not miss any outstanding idea.

The selected theme "flood resilience" is a very complex topic. Sources of the problem are manifold. ¹⁴ Many ways exist in which flood resilience can be enhanced. For example, better risk assessments and communication of the risks can help people in making better choices and in taking mitigating measures. Improved preparedness and community planning can lessen the cost in human life. Investments in infrastructure can help disperse flood-waters and prevent secondary events like a dam breaking. Warning systems can help get people to safety, and much more.

The call for proposals resulted in sixty submissions. The submissions reflected a variety of innovations and ranged from rather typical proposals (early warning systems, infiltration wells, etc.) to more unconventional proposals, such as a rescue system called Tsunami Bubble Room or a ground particle generator to control rainfall. There were also many submissions that were just not relevant.

A few trends were identifiable: Environment and ecosystem were subthemes that received biggest number of submissions, followed by early warning systems.¹⁵ Water and sanitation was a subtheme that received the lowest number of submissions¹⁶ and there were only a few innovations related to awareness raising through education.

While the pre-selection showed these trends, the final selection of nine innovations for the pitching competition was very diverse covering all four subthemes, including one technical solution for early warning, one waste management scheme, two disaster education programmes, a rain water harvesting system, a flood protection device, an emergency kit, a system for an infiltration well and a water purification filter. ¹⁷

How it went

The wide scope of the call for proposals resulted in a variety of submissions with mixed potential and out of these, a range of innovations was identified for prizes and for follow-up.

Despite this approach resulting in a number of low quality and irrelevant submissions, those interviewed for this case study saw it as a useful scoping exercise, to find out who is working on flood resilience and what kind of solutions are proposed.

What we recommend for next time

1. Choose a wide scope for sensing what is out there - If the purpose of your innovation challenge is 'not to miss any solution that is out there', then keep the topic and scope that you're working on wide. Identifying a broad range of innovations will be useful for sensing what kind of solutions and what kind of innovators 'are out there'.

2. Choose a narrow scope for specific solutions - In contrast, formulate it narrowly if you look for a specific solution e.g. for a problem within one of your organisation's projects. Furthermore, narrow down the innovation topic and the scope if you want to avoid a large number of submissions and a wide diversity of applications with mixed potential resulting in a resource intensive reviewing process.

How it was done: The outreach campaign

The organisers of the challenge were aiming to achieve maximum outreach using a variety of networks (non-governmental-organisation, private sector, and government, and universities) and means (social media engagements, local media and national media, emails, phone calls, postings on web-pages of various institutions and networks). There were high expectations in the outreach via the network of PMI volunteers. The network comprises about 486,000 volunteers organised in chapters all over the country.

¹² E.g. only individuals or organisations that are based in Indonesia could apply and the organisers intended to prioritise innovations that had already been piloted in some form.

¹³ Subthemes: 1. Protecting livelihoods, 2. Environment and ecosystem, 3. Water and sanitation, and 4. Information and action - For details/guiding questions regarding the subthemes see annex 7.
 ¹⁴ They include various human factors (littering, building practice,

¹⁶ Only four submissions fell into the category Water and Sanitation.

etc.) and natural factors (e.g. high rainfall, global warming). ¹⁵ About 40% of the submissions that passed the first quality screening (48 in total) addressed environmental aspects (mainly garbage collection and infiltration wells). 25% dealt with early warning systems of some kind.

 $^{^{\}rm 17}$ For further details on the selected innovations and their classification, see annex 8.

How it went

While the call for submissions resulted in a good number of applications (sixty), interviewees of this case study on the whole were not very satisfied with the outreach. The short time period for the outreach was one of the reasons given in interviews (3 weeks only).

A significant number of submissions were of poor quality in terms of content and form.¹⁸ The higher quality submissions had often already participated in previous challenges and thus were not newly identified through the campaign. Few submissions came directly from community members affected by flood disasters or from people working closely with these communities. The majority of submissions came from young university students and researchers who often showed little knowledge of the context. Many of the young applicants in the case study focussed largely on the technical aspects of their proposal but showed sometimes little knowledge of the conditions required to apply their solution in reality and beyond its initial introduction. Submissions largely came from central Indonesia, while the intention was to attract innovations from all over the country.

What we recommend for next time

1. Take time for the outreach - The organisers of the challenge only had three weeks for the outreach campaign. It is recommended to allocate about three months for the outreach campaign so that you can mobilise your networks and reach out to all geographical areas and to all relevant actor groups.

2. Tap into local networks - Tap into very targeted and subject-related networks, in particular at local level, among those closer to the affected communities as well as among government actors. Involve these actors as soon as possible in the planning process (e.g. in the core group) so that they can contribute their contacts and can provide access to their networks right from the start.

3. Provide a format for submissions - In a call for submissions provide for a specific format for the submissions and apply a strict format with a limited number of pages for the submissions (e.g. max. three pages). Submissions in alternative formats (graphic or film) can be added in a second round of submissions after a short-list has been established.

What happened: Selection criteria

The selection process was organised in a four-step process:

- 1. Pre-screening
- 2. Formal review by three independent teams
- (PulseLab, ITB and Zurich)
- **3.** Final internal selection (IFRC)
- **4.** Pitching in front of a judge.

A set of six criteria was used for the desk-based assessment of the submissions: Novelty, viability, relevance, inclusiveness, partnerships and cost effectiveness.

How it went

Overall, the range of the criteria gave indistinct orientation, resulting in assessments with few commonalities or trends. ¹⁹ Most criteria were rather generic with inclusiveness being the sole criterion that was context/sector specific. ²⁰

While the criteria were open for interpretation, there were no opportunities to discuss and to weigh the criteria between the reviewers/judges. Using generic criteria overall was fine. However, combined with the diverse composition of the reviewing teams and the panel of judges, the choice of mainly generic criteria contributed to a less rigorous and less focussed selection of innovations.

The assessment process left room for individual interpretation and for assessments based on personal preferences and background. For example, assessors with a technical background favoured the technical/IT-based solutions, while others could not relate to the very detailed technical or scientific proposals and thus favoured more human-centred solutions (e.g. school education programmes).

During the pitching sessions at the conference, the presentation style and the personality of the innovator naturally became decisive factors in the decision-making.

What we recommend for next time

1. Choose relevance as central criterion - Select relevance of the solutions to the problem and to the context as a central criterion in all phases of the process. The assessment of relevance requires knowledge of the context and of the subject matter, which has implications for the choice of partners, reviewers and panellists.

2. Add end user benefit and viability as further criteria - Based on the experience we had, you should always consider end user benefit and viability as further key-criteria. When replying to these criteria, applicants can show their knowledge of the context from the root causes of the problem to the understanding of what is required in order to implement

¹⁸ Applicants were allowed to submit in any format (written, videos, etc.). Submissions needed to identify a problem and give some background, then answer three questions: what is the idea/ solution and how it addresses the problem, and how to implement and sustain the idea.

 ¹⁹ For example, the three assessment teams did not select the final winner of the challenge as one of the top twenty proposals.
 ²⁰ Inclusiveness: Does the innovation address the needs of people vulnerable to flooding, especially women, children and people with disabilities?

the proposed solution in the long run.

3. Define narrow selection criteria - For a challenge approach, define narrow selection criteria and do a rigid assessment of applications. Work with a small number of criteria (e.g. three or four) and give review teams the opportunity to discuss their interpretation of the criteria and the weighing between them.

4. Combine generic criteria with case-specific criteria - Consider combining generic criteria (e.g. relevance, viability) with case-specific criteria (e.g. address the needs of people vulnerable to flooding) in order to focus and thus facilitate follow-up at an early stage of the process.

5. Pre-test the criteria - Consider pre-testing the criteria with those who are expected to take up or to support the innovations identified in the process as criteria might depend on the different potential users of the innovations (e.g. business partners versus non-governmental-organisations or government flood resilience programme partners).

6. Cluster innovations - Consider clustering the innovations in the course of the process (e.g. for reviewing by different teams or for organising the follow-up for certain groups of innovations or innovators together).

What happened: Review teams and judges

Volunteers from three partner organisations undertook the desk-based assessment for the first short-listing of proposals: PulseLab Indonesia, Meteorology Department of the Faculty of Earth Sciences and Technology of ITB and the Humanitarian Leadership Academy (London office). The panel of judges was composed of representatives from the IFRC, from the Humanitarian Leadership Academy (London office), and from a local investment agency.

How it went

Reviewers had a diverse background and those who were new to the topic of flood resilience and to the sector of disaster response and prevention were often left using their gut feeling or had to invest significant time in doing background research in order to gain at least some knowledge about the subject matter.

With sixty submissions in very diverse formats and length, the assessment process became rather challenging. The reviewers interviewed for this study stated that they hardly could do justice to the submissions, as there was too little time given and too short notice in advance. For efficiency reasons the reviewers worked in teams, meaning that in the end few reviewers had a complete overview of all submissions.

The organisers of the process had mixed views about the results coming from the desk-based as-

sessment. The decision was taken to consult among the main (international) partners in order to select the final list of innovations to be presented at the conference. The pressure coming from the public exposure at the conference contributed to this decision. Opening the assessment process in this way made the process subjective.

What we recommend for next time

1. Include panel members wit knowledge of the local context - Based on the experience we had, you should include at least some members of the selection panel and the review teams that have good knowledge of the context at community level. Likewise it is good to include further reviewers with diverse backgrounds so that you get fresh perspectives and support outside-the-box-thinking.

2. Choose few assessment criteria only - Less is more when it comes to the number of assessment criteria so, try to keep these to a maximum of three or four.

3. Keep it simple - Apply a simple grading range allowing for tangible assessments (e.g. from 1 to 8 rather than from 1 to 30 points).

4. Remain flexible in the process - Build in room and provisions for flexibility and for adaptations in the process when organising an open call for innovations so that you can react to unforeseen quantities and qualities of submissions.

3.3 Identifying Innovations: Lead User approach

The Lead User method is a systematic process to identify user innovators, originally designed to identify innovations for products or services in the private sector. The term 'Lead User' describes users who are ahead of the market. Usually, the Lead Users face a need that is common for all in their context or in a market place. However, Lead Users develop a solution to this need much earlier than others and they benefit from this solution themselves.

Originally PMI was designated to implement the Lead User approach with support from the researchers at Hamburg University of Technology. However, the extent of work required and the capacity available at PMI for this task did not match and PMI preferred to invest resources into the challenge and the innovation conference. The researchers ultimately took the lead role and implemented the bulk of the tasks with sporadic involvement of the members of the core group of organisers.

What happened: Scope and the identification of needs and trends

In a workshop in October 2016 the research team of Hamburg University of Technology together with

the main partners and with a few thematic experts set the scope for the project. The decision was to focus on river floods and to exclude solutions addressing coastal floods. Afterwards the researchers dived deeply into the topic in order to identify the underlying needs and trends in flood resilience in Indonesia.

They interviewed experts and undertook a thorough literature review. Over the course of four months, two researchers sent emails to 210 experts in the field of flood resilience. They received 116 responses, which led to 48 interviews and 68 email conversations with experts. In a meeting with the IFRC in Geneva the team finally selected the most relevant macro and micro drivers of floods in Indonesia based on the research findings:

Macro drivers

Climate change, urbanization, improper waste management and deforestation

Micro drivers

Sea level rise, change in rain patterns, land subsidence, drainage blocking, reduction in absorption capacity of soil

How it went

The background research based on scientific standards was resource intensive but beneficial in defining the scope of the search. Furthermore this step was essential to open up paths for identifying innovations that stakeholders, who were closely involved with the thematic field on a daily basis, were not likely to take. ²¹

What happened: Outreach or the search for the Lead Users

In order to identify Lead Users, the researchers applied three inter-linked approaches:

• Networking-based approach (pyramiding): When talking to one expert in the field of flood resilience, the expert was asked to recommend other experts in the subject matter, ultimately identifying Lead Users. This approach resulted in the identification of nine Lead Users.

• Survey: PMI conducted a survey within its network. The idea of the survey was to identify among the survey participants Lead Users or to get recommendations for follow-up contacts. The survey resulted in only one- follow-up conversation and no Lead User.

• Structured desk study resulting in the identification of eleven Lead Users.

Finally, the researchers visited Indonesia for eleven days in order to meet and to interview five Lead Users and four thematic experts as well as to visit five flood prone villages.

How it went

In this case study the pyramiding search and the desk research led to a similar amount of Lead Users within the same timeframe. Both were significantly more effective than the survey.

What happened: The results

The researchers ultimately identified twenty-two innovations.²² Most of the innovations offered solutions for preventing floods and its effects (15). Others addressed preparedness (4), rehabilitation (3) and flood disaster response (2). Lead users largely had a high technical expertise and university degrees.²³ Except for one innovation, all are currently in use in one way or the other.

How it went

The final selection of Lead User innovations appears equally diverse in terms of themes and approaches as the solutions identified via the challenge. The most important difference in the results is the fact that overall the Lead User innovations are further developed and are already in use.²⁴ Some are replicated already and some have received a good degree of attention, by the government and in networks – some even beyond Indonesia. Some innovations have been in use for many years, with the extremes dating back to the year 2000.

Some of the Lead User solutions appear more sophisticated and more complex than the innovations identified in the challenge. The mangrove coin scheme, based on a web-based transaction system is one example in this regard. A clinical insurance based on garbage collection is another one. According to some interviewees, a high level of complexity hindered aspects for the uptake and integration into existing programmes and organisations.

Even if the approach is resource intensive²⁵, requires discipline and some endurance, it apparently is possible to identify innovations from abroad. The researchers successfully identified experts, networks and finally Lead Users and their innovations related to flood resilience.

²¹ See for example the innovations coming from outside Indonesia (e.g. the Heyerdahl Mangrove Coin from Thailand, which provides incentives for planting of a new mangrove seedling) or innovations identified via contacts from outside of Asia (e.g. the Black Soldier Fly- a fly that can break down organic waste in large quantities that was identified via contacts in Africa).
²² For a categorisation (products, apps, etc.) see annex 10.

²³ Seventeen out of twenty have a university degree, mostly in engineering (eight), medicine (two) and other, primarily technical studies. Three Lead Users obtained a PhD and one a professorship.
²⁴ This finding seems to be in line with a higher degree of seniority / expertise of the Lead Users compared to the innovators identified via the challenge. However, due to lack of data this aspect could not be assessed fully.

²⁵ The team comprised four researchers (two more senior and two more junior). They worked for four months, albeit not full-time (roughly 70%).

The two approaches used for identifying innovations in this case study both have their pros and cons. The challenge discovered innovations that are in an earlier stage of development and often presented by younger students. The solutions represented through Lead Users overall were more advanced. However, these findings most likely are case and context specific and thus difficult to generalise.

In hindsight, matching investors with the innovators identified through the challenge at the conference was less relevant than it would have been for matchmaking between investors and the Lead Users. The ideas identified via the challenge were less advanced and thus less ready for take up and potential investment than those identified with the Lead User approach (see also the below chapter on the follow-up).

What we recommend for next time

1. Let the purpose define the approach - Choose the approach according to what the innovation process is supposed to achieve. Consider an open call for innovations if you want to learn what kind of ideas for innovations exist in the sector. Consider the Lead User approach if you seek solutions that are already applied.

2. Combine different approaches - Based on the experience we had, you can consider combining both approaches and align the follow-up activities to the kind of innovation identified, e.g. pitching fits more for innovations that are already advanced.

3.4 The innovation conference

What happened: The conference

A milestone of the process was the two-day event with a mix of speeches, showcases and pitching sessions in front of a panel of judges. It took place in a hotel in Jakarta on 23rd and 24th February 2017. One focus of the event was on matchmaking between innovators and potential investors. Invitations were sent out to the Red Cross family, local universities, private sector companies (sometimes focussing on people in charge of corporate social responsibility) and investors, national and international chambers of commerce, non-governmental-organisations, embassies, national government agencies and the media. About one hundred participants attended.

How it went

The event largely fulfilled the purpose of networking around the theme of flood resilience. It brought some attention to the topic and also provided a good forum for innovators to showcase their innovations. The conference turned out to be the dominating event in the innovation process. Its conception and organisation absorbed a lot of energy and attention. It also put a lot of pressure on the core partners and resulted in stress and some tensions.

What we recommend for next time

1. Manage the process well - There is never enough time to prepare for such a large and complicated event as this. But one thing that can really help is having rigorous project management throughout the preparation and during the event as well as ensuring early planning and risk analysis is in place so that you can be as prepared as possible.

2. Go for a series of events - Rather than having a one-off matchmaking conference with very high expectations, consider a small series of events allowing for a variety of formats and audiences with various opportunities to follow-up.

3. Mobilise sufficient staff - Based on the experience we had, it is recommended to plan for two full-time working staff (one senior and one assistant) for a period of three months prior to the big public event.

4. Consider outsourcing of some of the activities -Consider outsourcing at least of some of the logistics and concentrate resources on key features of the event (e.g. designing matchmaking formats for the conference and preparation/coaching of the innovators for the pitching).

5. Pick a great venue - Book more unique venues, which, unlike traditional conference venues, do not have restrictions regarding the room set up and the event organisation. This will allow more flexibility for innovators to showcase their innovations and attendees to network with each other. The venue should have flexible meeting spaces and informal settings where participants can come together easily (e.g. coffee tables, sofas, etc.).

What happened: Follow-up to the event

During the six months after the event the following has happened:

• Arrangements for the grant making process and payment of the prize money²⁶, which the interviewed innovators used for example to develop new prototypes or for testing existing prototypes in new areas;

• Various contacts and exchanges among the participants of the conference e.g. between individual innovators and also between innovators and speakers;

²⁶ The prize money was promised to be transferred within a short period of time following the conference. The promise caused some challenges internally as the payment had to be arranged as a grant and required some preparation.

• Compilation and presentation of the selected submissions and the identified Lead User ideas for discussions with PMI;

• Mobilisation of additional resources at the IFRC to further support the uptake of the innovations in the coming months (recruitment of a consultant).

How it went

A lot of energy and effort went into identifying and selecting innovations and to presenting a good number of ideas and teams at the high-level conference. This achievement was worth celebrating, while at the same time the successful completion of this milestone in the process meant the start of another challenging phase: supporting the uptake of the innovations and their further development and integration. This phase had not been planned in advance and only progresses slowly. On top, the contract of one of the key persons ended shortly after the conference. Thus, for most of the interviewees the follow-up process was seen as the part of the overall initiative that most needed improvement.

What we recommend for next time

1. Follow-up early - Based on the experience we had, it is strongly recommended to follow-up with innovators early after the event in order to keep the momentum.

2. Plan the details of follow-up - Include details of the follow-up phase with concrete milestones and activities into the planning and resourcing of the overall process so that this early follow-up is possible.

3. Change the setting - Organise follow-up meetings between the innovators and the potential investors in different settings so that you give continuous opportunities for matchmaking.

4. Make follow-up tailor-made - Be creative in the follow-up and make it tailor-made to the individual innovations and innovators so that you adapt to their various stages of advancement and type of innovator.

5. Look into the details - Give attention also to smaller (administrative) aspects of the follow-up in advance of the competition. This should avoid delays and technical hiccups that can create frustrations and ultimately might undermine the investments you made in establishing relationships.

3.5 Process design and management

What happened

For the core group -comprised of PMI, IFRC and Zurich- the process became very resource-inten-

sive. While some parts of the process were straight forward (e.g. the call for submissions, the logistical preparations for the conference), others are not. In particular the planning phase and the follow-up phase happened iteratively, and became a slow-moving process requiring patience and discipline.

On the whole, most of the responsibilities and tasks in the process remained with the core group, while other partners were contributing with a limited engagement and with little continuity throughout the process.²⁷ While PMI would be the more obvious partner for the lead role, the IFRC became the driving force, allocating more resources and shifting staff responsibilities in order to keep the process on track.

How it went

The partners of the Indonesian flood resilience innovation process willingly engaged without knowing each step and the expected results in advance. Continuing to push forward was essential. Commitment and institutional backup within the three organisations proved to be valuable to push through the preparations up to the conference.

While the focus was primarily on the identification of innovations, the follow-up phase was neglected. Process steps for identifying innovations were easier to plan and to organise than the follow-up, the take up of innovations and the integration into programming. Personnel changes following the conference affected the innovation process in the relationship management role.

What we recommend for next time

1. Go step by step - As it is unlikely that you will know each step and the expected results of the innovation process in advance, it is recommended to choose an iterative and more flexible approach when designing and managing the innovation process.

2. Manage the process - At the same time, so that you stay on track and within the planned time frame you should have a rigid project management in place for the more structured parts of the process (such as the call for submissions of innovations and the preparations for an innovation conference). Consider a private sector partner for the project management.

3. Ensure continuity - Ensure staff continuity and make corresponding finances available so that you navigate well through this multi-stakeholder and multi-step process.

²⁷ E.g. the research team at Hamburg University of Technology was very strongly engaged, but limited to the identification of innovations with the Lead User approach.



4. Closing remarks

Initiating a formal process in order to identify innovations related to flood resilience in Indonesia was a valuable undertaking. Besides the identification of solutions, ideas, products, applications and more, the process drew attention for the topic and for the partners involved.

The process opened opportunities for generating new insights into the topic, for creating or reinforcing networks and for establishing links beyond common sectors and institutional settings. Even if not all aspects of an innovation process are known or clear from the outset, it is recommended to have the courage to try the experience.

An innovation process related to this topic requires well-crafted collaboration. The composition of the actors involved essentially determines the relevance and the quality of the outcome. A good partner structure combines a core group of local actors that are representing a cross-section of the sector of concern with partners –local and internationalproviding key capacities needed for organising an innovation process.

The two approaches used for identifying innovations in this case study both have their pros and cons. The challenge discovered innovations that are in an earlier stage of development. The solutions identified through the Lead User approach were overall more advanced. Combining both approaches and aligning the follow-up activities to the kind of innovation identified certainly is possible.

The example from Indonesia has shown some great results. On top, the process has opened opportunities for generating new insights into the topic. It also has reinforced networks and has established new linkages of actors working on flood resilience in Indonesia.

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Annex 1 – List of people interviewed

Annex 1 – List	or people int	erviewed	DATE	PLACE
Tom Alcedo	American Red Cross	Country Representative	1.8.	Indonesia
Amri Avianto	-	Innovator Challenge, 2nd winner	2.8.	Indonesia
Lisa Carl	IFRC Geneva	IFRC Zurich partnership manager	8.6.	Skype
Ridwan S. Carman	PMI	Head of Emergency, Reco- very & Reconstruction Sub Division	3.8.	Indonesia
Nugroho Christanto	-	Innovator Lead User	2.8.	Indonesia
Nathan Cooper	IFRC Geneva	Senior Advisor, Innovation and Partnerships. GDPC	24.5. + 14.7.	Skype
Rubby Emir	Independent	Conference Facilitator	1.8.	Indonesia
Giorgio Ferrario	IFRC Indonesia	Country Cluster Support Team for Indonesia and Timor-Leste	5.7.	Skype
Mellyana Frederika	Pulse Lab Jakarta	Programme Specialist	3.8.	Indonesia
Moritz Goeldner	Hamburg University of Technology	Researcher	31.5. + 5.8.	Skype
Arafin Muhammed Hadi	PMI	Head of PMI DM	3.8.	Indonesia
Anisa Hasanah	-	Innovator Lead User	4.8.	Indonesia
Shaun Hazeldine	IFRC Geneva	Innovation Lead	14.6.	Skype
George Hodge	Pulse Lab Jakarta	Trade Portfolio Lead	14.6.	Indonesia
Rizaldi Ilyas	IFRC Indonesia	Programme Manager	1.8.	Indonesia
Fazil Irwan	Independent	Conference Designer	4.7.	Skype
Laura Jump	The Humanitarian Lea- dership Academy	Partnerships Director	4.7.	Skype
Aarathi Krishnan	IFRC	IFRC Innovation Coordina- tor, Asia Pacific	8.6.	Skype
Daniel Kruse	Hamburg University of Technology	Researcher	15.8.	Skype
David Nash	Zurich Insurance	Foundation Manager	4.7.	Skype
Melanie Ogle	IFRC	Disaster Mitigation Delegate	1.8.	Indonesia
Giulio Quaggiotto	Nesta	Tech advisor	5.7.	Skype
Surendra Regmi	IFRC	Delegate	15.6.	Skype
Yulistina Riyadi	Pulse Lab Jakarta	Research Associate	3.8.	Indonesia
Adi Saifullah	-	Innovator Challenge, 1st winner	2.8.	Indonesia
Sri Yusnita Sari	-	Innovator Challenge, 3rd winner	3.8.	Indonesia
Wirahadi Suryana	Zurich Insurance Indo- nesia	Director, Head of Corporate Lines	2.8.	Indonesia
Doni Suryantoro	Zurich Insurance Indo- nesia	Manager, Fire Protection, Risk Engineering Division	2.8.	Indonesia
Armi Susandi	Institut Teknologi Ban- dung	Reviewer for the challenge	1.8.	Indonesia
Arfik Triwahyudi	Zurich Insurance Indo- nesia	Project Coordinator, Community Flood Resilience Programme	2.8.	Indonesia
Parjono Unmus	-	Innovator Challenge	4.8.	Indonesia

Annex 2 - Intended users of the case studies

Primary users are the main partners involved in the process

IFRC

Innovation and Partnerships Global Disaster Preparedness Center Country Cluster Support Team in Indonesia and Timor-Leste

PMI Disaster Management

The Academy Partnerships unit

TUHH Hamburg University of Technology

Zurich Insurance

Z Zurich Foundation

Secondary users are other partners and the general public – in particular actors who plan undertaking similar innovation processes

Indonesian partners such as Pulse Lab Jakarta Venture capitalists, donors Actors who plan undertaking similar innovation processes The wider humanitarian community

Annex 3 – Questions guiding the case study

Main questions

What were the successes of the two processes? What worked? What did not work?

What were the particular strengths of each approach? How did they work in comparison?

What are the areas that could need improvement in future processes?

Further questions Study area "two alternative approaches"

What were strengths and weaknesses of the two approaches?

Are there differences in the innovations identified with the two different approaches? If yes, why? What were contributing factors? How successfully did the two approaches address the particular innovation challenges in the given context (flood resilience in Indonesia)?

Study area "local ownership"

How did the two approaches work in terms of local ownership?

Did the process involve the "right" local actors? How did the engagement of the various local and international actors work?

What was the benefit for the various local actors?

To what extent did the two approaches support local solutions addressed by local actors?

Study area "partnerships"

Which partners were involved in the initiative and for what purpose?

What roles did the partners play and how successfully did the two approaches involve the partners in the processes?

Study area "continuity"

What happened after the main event? How did the process keep the momentum and support going?

Study area "learning for future processes" What is the learning for future processes?

What are recommendations for future similar initiatives?



Annex 4 – Main partners' backgrounds



Palang Merah Indonesia (PMI) is the Red Cross national society of Indonesia. Its mandate comprises disaster management, disaster preparedness and risk reduction, social and health programs, a nation-wide blood donation service, volunteer and youth development, and dissemination of International Humanitarian Law. PMI is member of International Red Cross and Red Crescent Societies. PMI is the implementing partner for the Indonesian part of the Zurich financed flood resilience program that aims to enhance flood resilience by finding innovative ways to increase the impact of community disaster risk reduction efforts.



Global Disaster Preparedness Center (GDPC) is a reference center to support innovation and learning in disaster preparedness. The American Red Cross and the International Federation Red Cross and Red Crescent Societies (IFRC) have established the GDPC. It is one of 12 reference centers in the international Red Cross Red Crescent network and aims to enhance disaster management–namely preparedness–capacities of Red Cross and Red Crescent national societies through a service-oriented and demand-driven approach to building community resilience.

www.preparecenter.org



Zurich Insurance Group (Zurich) is a multi-line insurance provider with a global network of subsidiaries and offices in Europe, North America, Latin America, Asia-Pacific as well the Middle East. Zurich offers general insurance and life insurance products and services for individuals, small businesses, midsized and large companies as well as multinational corporations. Zurich employs about 60.000 in more than 170 countries. The Group is headquartered in Zurich, Switzerland, where it was founded in 1872.

Zurich has entered into a multi-year alliance with the IFRC, the International Institute for Applied Systems Analysis (IIASA) in Austria, the Wharton Business School's Risk Management and Decision Processes Center (Wharton) in the U.S. and the international development non-governmental organization Practical Action. The alliance brings an interdisciplinary approach to flood research, community-based programs and risk expertise with

www.pmi.or.id



International Federation of Red Cross and Red Crescent Societies (IFRC) is an international humanitarian network with 190 member National Societies. The IFRC is active before, during and after disasters and health emergencies with a particular focus on vulnerable people. Its actions follow the principles of humanity, impartiality, neutrality and independence. The IFRC has its secretariat in Geneva. It has five regional offices and numerous country and multi-country cluster offices around the world (including in Indonesia).

The IFRC is a partner of the Zurich financed flood resilience program that aims to enhance flood resilience by finding innovative ways to increase the impact of community disaster risk reduction efforts at global and at national level.

www.ifrc.org

the aim of creating a comprehensive that will help to promote community flood resilience. It seeks to improve the public dialogue around flood resilience, while measuring the success of our efforts and demonstrating the benefits of pre-event risk reduction, as opposed to post-event disaster relief.

www.zurich.com



The Institut Teknologi Bandung (ITB) or Bandung Institute of Technology is a state university located in Bandung, the capital of Indonesia's West Java province. The university offers mainly programmes related to engineering and informatics. It is the oldest technology-oriented university in Indonesia. Within the flood alliance programme ITB has signed an agreement to develop and install the Flood Early Warning Early Action System (FEWEAS) for one of the programme areas (the Bengawan Solo watershed area).

www.itb.ac.id



Institute for Technology and Innovation Management at Hamburg University of Technology (TUHH) was founded in 1998. The members of the institute teach in various fields of business administration and undertake research in the field of Technology and Innovation Management. The institute develops and later transfers knowledge, mostly in close cooperation with companies and institutions.

www.tuhh.de/tim



The Humanitarian Leadership Academy is a global learning initiative set up to facilitate partnerships and collaborative opportunities to enable people to prepare for and respond to crises in their own countries. The academy is working with local, national, regional and global organisations, communities and individuals to develop learning resources and tools. By supporting people at the grassroots level, the academy aims at enabling them to be better prepared for a disaster, respond quicker and to have increased resilience after a crisis.

www.humanitarianleadershipacademy.org

Annex 5 - Expected Outcomes of the innovation process according to the Concept Note for Development – dated 1st July 2016

• Create a locally-led and managed mechanism to provide a diversity of opportunities for local innovators to engage with, collaborate and exchange learning with the Red Cross, academia, private sector, philanthropy, venture capitalists, hobbyists, young people, social enterprises, think tanks, and other potential supporters.

- Facilitate opportunities for local innovators to access supports such as sponsors, mentors, judges, co-creators, prize providers, incubators or solution implementers.
- Document and learn from successful innovations and share that information with actors inside and outside of Indonesia.
- Inject new thinking and out of the box collaboration into the work of the Red Cross and Red Crescent Movement and partners.
- Develop clear methodologies in which to support solutions to be implemented and/or scaled, whichever is most appropriate.
- Provide a contribution to developing the network of innovators on floods resilience in Indonesia

Annex 6 - Zurich Programme

Since 2014, a flood resilience project has been implemented in Indonesia along three river basins – Bengawan Solo, Ciliwung and Citarum. It is a part of the Zurich IFRC Flood Resilience Alliance, a five-year commitment to enhance community flood resilience and risk reduction in some most vulnerable countries. The partnership sits within the wider Zurich Global Flood Resilience Alliance; a cross sector collaboration, which brings a diversity of skills and expertise to enhance community flood resilience solutions.

In Indonesia the project is implemented by Palang Merah Indonesia (PMI) in partnership with International Federation of Red Cross and Red Crescent Societies (IFRC) and ZII. The will be completed by the end of 2017.

The main programme components are:

- Preparing communities and building their capacity to respond to potential floods;
- Developing community level interventions to reduce the exposure to flood risk and mitigate likely impact of the disaster in future;
- Advocating to local and national actors as well as government agencies about the need for flood risk reduction initiatives at all levels and share solutions and lessons learned.

Annex 7 - Sub-questions for subthemes of the challenge

Protecting livelihoods - What can be done to reduce the effects of flooding of people's livelihoods? How can we better prevent such economic disruptions to people's lives?

Environment and ecosystem - How can we better protect our natural environment in a way that improves resilience to flooding?

Water and sanitation - How can we better ensure access to safe water, sanitation and hygiene before, during and after flooding?

Information and action - How can we better enable people to act on the information provided about a flood? Are there innovative ways people are building resilience to floods that other people should be aware of?

Annex 8 - Further classifications of the selected innovations and innovators

• Four innovations address prevention and five address preparedness

• Most innovators were university students and submitted in teams as it was requested. Among the innovators is one high school student.

• While there is not always information in the proposal about the current stage of the innovation, five of the selected ideas exist as prototypes. One of the educational programmes is already applied in practice.

***TABLE IN THE NEXT PAGE**

Category	DRC Cycle phase	Individual vs. team	Current stage	Initiation year
#7 Infrastructure	Prevention	Individual	Not clear from proposal	No info
#18 Web platform	Prevention (waste management)	Team from university	Prototype	2015
#29 Product	Preparedness	Team of students	Idea	2015
#32 Education	Preparedness	Team of young volunteers	Prototype running in two areas	2016
#37 Product	Preparedness	Team from univer- sity + partners	Prototype	2016
#38 Product	Prevention (early warning)	Individual	Prototype	No info
#42 Product	Preparedness	Team	Idea	No info
#50 Product	Prevention	Team from university	Not clear from proposal	No info
#58 Education (product)	Preparedness	Team of students	Prototype	No info

Annex 9 - Details of review and selection process

1. Six criteria given in the call for submissions:

• Novelty – Is the innovation new? Or does it build on existing solutions or approaches in a novel and unique way?

• Relevance – Does the innovation address a specific problem within a local context?

• Inclusiveness – Does the innovation address the needs of people vulnerable to flooding, especially women, children and people with disabilities?

• Viability – Does the proposed innovation demonstrate feasibility and sustainability? Has it been prototyped?

• Partnerships – Are at least two individuals and/or organizations with complementary expertise submitting the proposal?

• Cost effectiveness – How cost effective and scalable is the innovation?

2. Pre-screening of all proposals leading to the elimination of about half of the submissions that did not fulfil a minimum quality standard.

3. Formal review of the remaining sixty proposals by three teams leading to fifteen short-listed candidates:

• Review team 1: Volunteers from PulseLab Indonesia

• Review team 2: Researchers from the Meteorology Department of the Faculty of Earth Sciences and Technology of ITB

• Review team 3: Staff from London HQ of the Humanitarian Leadership Academy

4. Red Cross internal final review resulting in a short list of nine innovations to be presented at the conference.

5. Pitching at the conference in front of a panel of four judges:

• Head of IFRC Country Cluster Support Team and Representative to ASEAN

• Partnerships Director, Humanitarian Leadership Academy

• Director of the Angel Investment Network Indonesia (ANGIN)

Annex 10 – Categorisation of Lead Users identified

The researchers identified twenty-two innovations. Most of the innovations offered solutions for preventing floods and its effects (15). Others addressed preparedness (4), rehabilitation (3) and flood disaster response (2).

They grouped them in seven categories:

- nature-based solutions (5),
- tangible products (4),
- community-based solutions (4),
- apps and software (3),
- educational solutions (1),
- service- and business-model innovations (3) as well as

• indigenous (so-called grassroot) solutions (5). The innovations are exploited:

- by the individual Lead User (8),
- by a non-governmental-organisation (5) or
- by a for-profit-company (3).

Two innovations were developed and are still implemented by a community of people. One innovation was developed within a university and one by a local government.

Annex 11 – About the author



For the past fifteen years Ralf has worked in twenty-five different crises-affected countries around the globe with the intention of further improving the relevance and the quality of the international response to natural- and man-made disasters.

With a background in international humanitarian action, Ralf became specialised in systematically analysing aid interventions. He combines his listening skills with his systematic way of working and writing. Ralf has written numerous studies, reports and articles and regularly contributes to a blog about humanitarian aid.

Ralf is trained in change management with a focus on facilitating innovation and prototyping. Ralf has recently been nominated for the jury of the German Agro Action Innovation Factory. Furthermore, Ralf has initiated ReflACTION, an innovative platform for individuals with a heartfelt interest in the emerging future of international response to crises.

Based in Belgium, Ralf runs a small non-for-profit organisation called MomoLogue.