

UPON #1/2023 (EN)

Talk with Nashin Mahtani from Yayasan PetaBencana (Indonesia)

Developing more equitable forms of climate adaptations through collective intelligence

Yayasan Peta Bencana (Disaster Map Foundation) is a South-East-Asian based NGO committed to enabling more equitable forms of climate adaptation. We aim to provide all residents with the most critical resource during disasters: open and verified information. The NGO developed PetaBencana.id, a free, web-based platform that produces real-time disaster maps using both crowd-sourced reporting and government agency validations. PetaBencana.id is powered by [CogniCity Open Source Software](https://CogniCity.com), a free and open-source software for community-led disaster response and recovery.

UPON: Welcome Nashin Mahtani, from Yayasan Peta Bencana. In our preliminary talk you told us how your understanding of architecture influenced your decision to work on an open-source tool. You spoke about traditional architecture, greenwashing and how software shapes the city. Can you please tell us more about that?

Nashin: I have come to understand architecture as the organization of people and materials in space, also through the structuring of habits, behaviors and protocols. Traditionally we did this in the form of built materials – bricks and city planning. But today, we can also do this through software, because the massive concentration of internet-connected devices have completely transformed the way all of us participate in the city: from the way we order food to the way we meet people or commute around our cities. We can understand the mobile phone as an urban interface because it shapes the way we interact with our cities and the ways in which it is possible to participate in the city; always encouraging certain forms of participation and deliberately excluding others.

There are about 6.3 billion smartphone users in the world today, which represents an incredible infrastructure for us to tap into for collective organization, yet we are still predominantly using this infrastructure for advertising. Our work is really trying to think about how we can leverage the networks which people are already using and direct them towards more collective and collaborative ways of participating in the city and living together.

UPON: In our first talk you also spoke about the gap between people affected by floods who have the possibility to move somewhere else, and people that don't have that possibility. How does Yayasan Peta Bencana address that gap and enable,

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as mentioned on the NGO's website, more equitable forms of climate adaptation?



Nashin: I think that gap is a result of a lot of different factors, some are very deeply rooted and structural issues. But one of the biggest gaps that exists is the unequal access to information. Especially in a disaster, information is the most important resource. Everybody needs information to make decisions about safety and response. But even in crisis contexts, tech companies and consultation firms continue to

propagate business model reliant on the gatekeeping of information. We see this evidently in the rush to build dashboards and control rooms for large agencies, all powered by proprietary tech and closed data. And so decision support tools become concentrated in the hands of a very small handful of people. Our organization addresses this gap by making this information freely available to everybody through an extremely data-light platform, and it allows more equitable forms of climate adaptation because it empowers every person to participate in disaster risk reduction and climate-adaptation efforts. **By providing decision support tools to the largest number of people, we can leverage our collective intelligence to coordinate on the scales we need to.**

In the immediate time after a disaster, before aid or government agencies arrive at the location of the disaster, the first response usually comes from our neighbors. We want to provide a tool that amplifies the ability for mutual aid. People are not victims, they are able to help each other. And if they have access to verified, accurate, and actionable information, the scale at which they can coordinate is really significant.

Another really important factor to consider besides who is able to make decisions, is also the type of information on which decisions are being made. In a time when there is a lot of talk about listening to “the science”, we have to question what qualifies as “science”. We know that colonialism and imperialism pushed a very narrow definition of who is considered “an expert” and a very narrow definition of “science”, which sought to delegitimize and eradicate all other diverse mechanisms of knowledge. But we also know that **the people living most closely with the disaster are the most knowledgeable, even if they are not deemed scientists in the sense of the word as it is most commonly used today. So, our platform enrolls local wisdom into disaster reporting.**

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The way we designed the reporting protocols for each disaster is actually rooted in local practices. In Indonesia, for example, communities learn to read the environment very closely based on animal behavior. By integrating local knowledge into our platform, we legitimize them as forms of knowledge that are equal and can stand alongside all of the other scientific methods. It is equally valid to report haze based on respiratory systems as it is to measure haze based on sensors that measure air quality by ppi, and it is equally valid to sense volcanic activity based on animal behavior as it is through seismographs.

There are multiple ways of reading the city and multiple sources of information on which decisions can be based. And it's not about substituting one with the other, but about finding ways to complement them so that we can move towards more equitable forms of adaptation that draw on diverse knowledge practices.



UPON: How is the software used by people, governments and aid associations, and how is it being adapted in other countries and contexts?

Nashin: The software is being used by a variety of different stakeholders. For example, residents check the map to organize the safety of their families, to minimize the loss of personal belongings, and to navigate safely. They also use the

platform to plan collective efforts for response such as the coordination of resources within and between local communities and emergency agencies, and setting up community kitchens. Government emergency management agencies monitor the map to understand and respond to resident needs as well. These agencies have told us that the platform is the fastest, most accurate source of information they have, because this information is coming directly from people on the ground who are experiencing the disaster. And so it saves them time and money because they can allocate their resources far more effectively based on what people actually need. It works similarly for the aid agencies and the first response teams.

In terms of how it is being adapted to different contexts, the software is free and open source, adaptable to the widest variety of contexts, hazards and languages. For example, in 2017 the Vietnamese Institute of Science implemented a pilot flood mapping platform in Vietnam, based on the code we published online. They also added technical components to the software that we hadn't yet. Because it is an open source tool, when they added those new components, we benefited from those additions too. That is one of the incredible strengths of open source tools; it allows us to leverage the strength of collective intelligence.

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In Hong Kong, for example, there is a platform called Breadline, developed by Dr. Daisy Tam, who adapted the software for food waste and logistics distribution. We are now working with them to draw from the lessons of logistics distribution in a non-emergency context, and bring it back to an emergency context for the disaster-mapping platforms in Indonesia and the Philippines. This type of lateral knowledge exchange is extremely enriching; it demonstrates far more collective and sustainable ways of addressing challenges as necessary alternatives to one-sided, cost-prohibitive, and inaccessible proprietary tech. **There are actually ways for us to meaningfully work together instead of everybody deploying their own tools in separate silos. To address the scale of challenges we have today, we need to work collectively.**

UPON: The next one is a more general question and quite broad, so we do not expect it to be answered exhaustively: How can, in your opinion, engaged citizens and governments develop more just forms of climate adaptation? What could be the next steps towards it?

Nashin: I think that, while there will always be friction between citizens and governments, no matter what country we are



looking at, there are some situations in which we can agree to work together. And one of those situations is the continuation of our civilization. The challenges that we are facing today are too big to be handled by one institution alone. I think it is really important to build a culture of civic co-management, where the public can participate in decision making in meaningful ways beyond these trivial forms of smart cities that have come to dominate so much of the conversation. We should leverage the unique intelligence, the collective intelligence of people in the city, celebrating the many different ways that we can adapt to the environment, and try to bring those together instead of ironing out all of the abnormalities and insisting that there is only one single way - whether it is geoengineering or all these big master plans. I think it is about listening to adaptive practices that already exist, practices that people are already configuring. And diversifying what we understand as expertise would be a great start.

UPON: I would like to ask you if you could tell us more about the training programs that you run. Could you tell us more about the training programs that you run?

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Nashin: We do a lot of training and socialization to raise awareness of our platform as a free tool that people can use to self-coordinate. In building a tool that allows everyone to participate, we also need to make sure that people feel eligible to participate. It goes back to this question of expertise in the sense that you do not have to be a scientist to participate. You are an expert simply by being a resident. Our strategy is always to use a very light hearted tone in order to encourage participation.

In addition to this, we also do a lot of training events with the widest variety of groups, including government agencies, communities who are living with the disasters themselves, as well as schools and universities. We built a youth program in 2021 which has been incredibly successful - we now have 400 youths across Indonesia and the Philippines acting as disaster risk reduction youth ambassadors. It is so amazing to see their self-initiated activities each month, spreading awareness in their communities. **They understand the risks of climate change and they spread awareness in very encouraging and empowering ways; not focusing on "the future is bleak" but rather directing attention to the ways in which we can come together and support each other through forms of mutual aid during disasters.**

UPON: Thank you so much, Nashin!

Hybrid Talk with Nashin Mahtani (Yayasan Peta Bencana, Indonesia), Lorene Blanche Goesele and Valeria Schwarz .
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UPON is a series of talks that reflects on urban practices from an inclusive, multilingual, context bound and feminist perspective. As a platform for reciprocal exchange and collective research about urban practices in an international context, UPON connects artists, urbanists and activists around the world.

UPON is curated and organised by Lorene Blanche Goesele (transformation architect and transdisciplinary artist) and Valeria Schwarz (artist, curator, art mediator and mother).

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