

Building resilient communities

Promoting people participation to address disaster risk

A toolkit for communities, citizen groups, and local government units



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Building resilient communities: Promoting people participation to address disaster risk

A toolkit for communities, citizen groups, and local government units

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Super Typhoon Rai aftermath in Surigao Province,
Mindanao Island. Houses have been damaged
after Super Typhoon Rai made its landfall in
Surigao, province of Mindanao, South of the
Philippines.

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Table of contents

Introduction	6
Overview	6
Worsening climate crisis	8
People participation: toward climate solutions and climate resilient development	9
Bearing witness	10
Greenpeace's work in helping build resilient communities	10
About this toolkit	12
Why this toolkit	12
Methodology	13
Scope and limitations	13
Perspective: the political economy of DRR	14
Building resilient communities: proactive approach	16
A. Disaster risk assessment	17
B. DRR action plans / CCA plan	17
Ideas for action	18
1 Addressing the capacities of the element at risk:	
Individual survivability providing for basic needs before, during, and after the hazard	22
A. FOOD - just and resilient food systems	22
1: Community-supported agriculture: a sustainable, people-powered local food system	23
2: Together we stand: Pasig youth community pantry	27
B. SHELTER - sustainable housing or shelter during and after the hazard	29
3: Embracing bamboo-based starter home models:	
Negros Oriental's shelter for resilience	30
4: Alternative temporary shelters: a menu of options	34
5: Guiuan: climate resilience through homeowner-driven on-site house reconstruction	38

Table of contents

2. Addressing the capacities of the element at risk: systems and structures that help individual elements at risk to survive before and during the hazard and to bounce back.	42
A. INCLUSIVE MOBILITY - moving people and goods	42
6: Moving as one: inclusion and mobility in public transport	43
B. PLANNING WITH THE PEOPLE	46
7: Dig deep Potrero: from “Ondoy” to contingency planning	47
C. COMMUNITY-MANAGED DRR INITIATIVES	49
8: Gender-responsive evacuation centers for island and upland communities	50
9: Disaster busters: risk communication interactive learning	53
10: Collective planning: nature-based solutions in mitigating flood disaster risks	56
11: San Juan City DRRMO tools for visibility and accountability	60
Synthesis	64
Stories vis-à-vis the design flow of building resilient communities	64
Broadening action and center of gravity	66
Ways forward	69
1. Understanding the role of key players	69
2. The need for adequate planning and action	70
3. Localization: coordination and convergence of service	71
4. Sustaining movements toward community resilience	72
5. Climate and Pandemic Response (CPR) Portal for Better Cities	72
6. Community organizations that can be tapped for collaboration by LGUs	72
7. Menu of options	73
Conclusion	74
Ensuring an ambitious climate agenda for the Philippines	74
Addressing the climate crisis entails urgent, long-term, and systemic solutions	75
Ensuring people participation	75

Introduction

Overview

In November 2020, Typhoon Ulysses (Vamco) swept through the island of Luzon, Philippines, and across Metro Manila, the country's biggest and most populated metropolis. It brought with it the worst flooding in the metropolis since Typhoon Ondoy (Ketsana) in 2009, and resulted in some of the worst flooding in other provinces, particularly in the Cagayan Valley Region (Region II) up north. It affected an estimated 1.2 million families, killed 101 people, and cost the country 7.3 billion and 12.9 billion respectively in agricultural and infrastructure damages.¹ The typhoon affected the country's most developed urban and rural centers, while being confronted by the COVID 19 pandemic, and showed that disaster risk reduction and response regimes in multi-dimensional risks were still largely wanting.²

Interestingly, more than the entities that traditionally respond to calls for disaster relief (such as national government agencies, foreign government aid agencies, the UN, and humanitarian groups), what stood out during the days that followed Ulysses' onslaught was the response from private citizens. These went beyond donating to the usual relief drives of religious institutions, media networks, and other foundations as they are now participating in both formalized and informal citizen / civic action groups. Most of the latter banded together to consolidate their efforts to be more innovative in the way they implement their response work, considering the need for COVID-19 protocols. Even more striking is the fact that the relief efforts went beyond the usual fund-raising efforts and relief goods distribution, and into

the provision of psychological assistance, hot meals through community kitchens operated by volunteers^{3,4} and celebrity chefs⁵, and the use of digital / spatial technologies to help monitor the extent of damages, which guided rescuers during the response. Meanwhile, young Filipinos also took to social media to call for action and accountability from the national government, culminating in calls for an academic strike.⁶ Most notable was the surge of reactions in social media calling for an end to "romanticizing Filipino resilience,"⁷ which signaled a turning point in the Filipino's understanding not just of disaster response, but more importantly, what role citizens play within this realm that was previously thought to be solely under the purview of government institutions and humanitarian agencies.

¹ NDRRMC. Sitrep #29 re Preparedness Measures and Effects for Typhoon "Ulysses" (I.N. Vamco). 13 Jan 2021. https://reliefweb.int/attachments/c81781d2-633e-3fae-bd53-82d7517e94dd/SitRep_no_29_re_TY_Ulysses_as_of_13JAN2021.pdf. Retrieved 6 July 2022.

² Buan, Lian. What went wrong during Typhoon Ulysses? *Rappler*. 16 Nov 2020. <https://www.rappler.com/newsbreak/in-depth/what-went-wrong-protocol-communication-leadership-typhoon-ulysses/>. Accessed 21 Dec 2022.

³ Filipino bayanihan spirit brings relief, attention to Typhoon Ulysses victims. *Rappler*. 16 Nov 2020. <https://www.rappler.com/moveph/filipinos-bayanihan-brings-disaster-relief-attention-typhoon-ulysses-victims/>. Accessed 21 Dec 2022.

⁴ These chefs are helping feed survivors of typhoon Ulysses. *ABS-CBN News*. 13 Nov 2020. <https://news.abs-cbn.com/life/11/13/20/these-chefs-are-helping-feed-survivors-of-typhoon-ulysses>. Accessed 21 Dec 2022.

⁵ Garcia, Angelo. Restaurants and chefs extend help to Typhoon Ulysses victims. 13 Nov 2020. <https://www.gmanetwork.com/entertainment/celebritylife/food/71181/restaurants-and-chefs-extend-help-to-typhoon-ulysses-victims/story>. Accessed 21 Dec 2022.

⁶ Luna, Franco. 'Act now or step down': Ateneo students sign mass student strike, protest gov't response to Ulysses, COVID-19. *Philstar.com*. 14 Nov 2020. <https://www.philstar.com/headlines/2020/11/14/2056860/act-now-or-step-down-ateneo-students-sign-mass-student-strike-protest-govt-response-ulysses-covid-19>. Accessed 21 Dec 2022.

⁷ Balangay. "Romanticizing Filipino Resilience: A Result of Incompetence". 28 Apr 2021. <https://goodgov.ph/balangay-publication/f/romanticizing-filipino-resilience-a-result-of-incompetence>. Accessed 22 Dec 2022

Evidence of this shift was demonstrated a year after in 2021 during the onslaught of Super Typhoon Odette (Rai), which ravaged parts of Visayas and Mindanao. Because of the scale of devastation many remote localities still had no access to relief days after the typhoon's landfall. Youth and community pantry groups in Visayas were the first to reach remote areas that had not yet been reached by official responders. Formal and informal community groups now showed closer and more efficient collaboration with government agencies and NGOs on response and relief efforts.⁸⁹

This is not to say that Filipino interest in helping fellow citizens during times of disasters started only during the series of typhoons in 2020. But the scale of coordination among formal and informal citizen groups among themselves and with agencies and NGOs, as well as the rise of sentiments on accountability, and the shift from the perception of citizens as victims of disasters or passive observers, to their active role in calling accountability, and leading—not just participating—in relief and recovery efforts, using crowdsourced open streets maps and the pre-positioning of community kitchens and volunteer groups was unprecedented. From a broader perspective, it has brought to the fore how people participation is a crucial component not just to disaster response, but to overall resilience building.

At present, the role of citizen-led groups—and more broadly, the importance of fostering people participation—in community resilience building and disaster response seems underappreciated. While both the *National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028*¹⁰ and the *National Climate Change Action Plan (NCCAP) 2011-2028*¹¹ recognize the importance of engaging communities to build their adaptive capacity, the main approach is knowledge and capacity / skills development, and top-down approaches adopted

from international frameworks that might not be suitable to the local context. Local government units (LGUs) approach the involvement of citizen groups in disaster response on an *ad hoc* basis, and strategies to integrate them into the local plans are still lacking. Many LGUs also need to recognize that local indigenous knowledge and practices in disaster risk reduction (DRR) and climate change adaptation (CCA) are crucial components in local actions plans.

People participation in resilience building and crisis risk management, however, is not a new concept, and has been advocated even before the 1990s.¹² But with today's wider network of volunteer and support groups enabled by social media and digital platforms such as Project Agos,¹³ the sphere of people participation now includes more community actors beyond the affected groups. Disaster risk management and resilience building plans would benefit greatly from including grassroots groups in their strategies, through fostering these partnerships and enabling conditions that promote their growth. At Greenpeace, we believe that people participation must be a key strategy in disaster risk reduction and community resilience building, particularly as we face the worsening impacts of the climate crisis.

Along with all of these, our national and local governments must act on the increasing realization that being in a climate crisis means being in a constant state of emergency. Most of our current DRR frameworks are time-bound, which assumes climate impacts work in a set timeframe with clear pre-, during, and post-time periods. This is no longer our reality—typhoons are getting more frequent and more intense, even as we experience longer-term, slow onset impacts such as drought, sea level rise, and diminishing resources. There is a need for a DRR strategy that asserts constant preparedness and urgency as we face this crucial point in our country and planet.

⁸⁹ Juguilon, Allena Therese. As groups band for relief, Filipinos call for sustainable solutions after Typhoon Odette. *Rappler*. 23 Dec 2021. <https://www.rappler.com/moveph/filipinos-call-sustainable-solutions-after-typhoon-odette/>. Accessed 21 Dec 2022.

⁹⁰ De La Cruz, Christa I. The Community Pantry Movement Restarts In VisMin After Odette's Onslaught. 17 Dec 2021. <https://www.spot.ph/newsfeatures/the-latest-news-features/88249/patreng-non-restarts-community-pantry-in-visayas-mindanao-a833-20211217>. Accessed 21 Dec 2022.

¹⁰ Department of Interior and Local Government. National Disaster Risk Reduction and Management Plan (NDRRMP) 2011-2028. Dec 2011 https://www.dilg.gov.ph/PDF_File/reports_resources/DILG-Resources-2012116-420ac59e31.pdf. Accessed 22 Dec 2022

¹¹ Climate Change Commission. National Climate Change Action Plan 2011-2028. <https://climate.emb.gov.ph/wp-content/uploads/2016/06/NCCAP-1.pdf>. Accessed 22 Dec 2022

¹² Maskrey, Andrew. 1989. *Disaster Mitigation: A community based approach*. Oxford:Oxfam GB. <https://policy-practice.oxfam.org/resources/disaster-mitigation-a-community-based-approach-121119/>

¹³ Agos by eBayanihan. *Rappler.com*. <https://r3.rappler.com/move-ph/issues/disasters>. Accessed 21 Dec 2022.

Worsening climate crisis

Last March 2022, the Intergovernmental Panel on Climate Change (IPCC), the scientific body responsible for advancing climate science, released the Working Group 2 (WG2) report¹⁴ on climate change impacts, adaptation, and vulnerability, which forms part of IPCC's 6th Assessment Report (AR6). The assessment is alarming. Key takeaways from the report are:

- 1. Climate risks are appearing faster and will get worse sooner than previously assessed.** Climate change is already causing widespread losses and damages to nature and people. Scientists now predict that those risks will turn higher at lower global warming levels than previously assessed. For ecosystems, effects have been experienced earlier, are more widespread and with further-reaching consequences than expected.
- 2. Every further bit of warming makes things worse, but limiting warming to 1.5°C would keep the world more adaptable.** If we exceed the Paris Agreement 1.5°C warming limit, everything will get much worse, and more difficult to adapt to, becoming increasingly impossible for some.
- 3. We have entered a critical decade.** We need to cut emissions much faster, protect and restore nature, and at the same time prepare for the warming we can no longer prevent.
- 4. To succeed, adaptation must build on rights and needs, anticipating the true scale and nature of changes.** This will be essential for climate-resilient development. As warming interacts with other human-made problems such as biodiversity loss, overexploitation of resources, and social injustices, solutions must keep up and serve multiple needs.

- 5. We are not prepared. Adaptation to climate hazards is increasing, but it doesn't reach those in most need.** Small step-by-step changes to existing systems won't be enough. We need bigger systemic changes, based on realistic projections of the future, and to succeed, they need to be rooted in equity and justice.

Irreversible climate impacts are already happening, and more climate risks are appearing faster and will get more severe sooner. The human impacts of the climate crisis are taking its toll on communities. Countries like the Philippines which are highly vulnerable to climate impacts are already suffering the most. The report's references to the issue of climate justice (defined as "justice that links development and human rights to achieve a rights-based approach to addressing climate change"¹⁵) implies the recognition of the deep climate injustice many communities face. On the other hand, it's an indication of how big a difference it would make if reduction of vulnerabilities was seriously pursued.

All this points to the urgency for climate action. Greenpeace believes that to address the climate crisis, the Philippine government must:

- 1. Exit fossil fuels without delay.** A rapid and just transition to a low-carbon pathway must be instituted through a massive uptake of renewable energy solutions.
- 2. Hold those who polluted the most accountable** to protecting the rights and needs of those who are hit the hardest. We need to hold corporations and governments accountable for their damage and exploitation, and make sure they act in line with science.

¹⁴ IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_FullReport.pdf

¹⁵ IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press. p 9. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

3. Mainstream rights-based climate action and climate justice across all local and national government policies and programs, for example in city planning, infrastructure projects, permits for large-scale industrial activities, and fisheries and agricultural policies, among others. Plans for economic recovery from the impacts of the COVID pandemic must also build in climate action (i.e. a green and just recovery plan). Coherent strategies beyond disaster response must be

put in place, and these should also address long term vulnerabilities, not just disasters. Adaptation programs must be consistent with the aim of protecting human rights as we build resilient communities better able to adapt to the impacts of a changing climate over the long haul, while forging solutions sensitive to local realities that would reduce, if not prevent, environmental risks to vulnerable communities.

People participation: toward climate solutions and climate resilient development

The IPCC AR 6 WG2 report states that governance that enables people participation leads to effective adaptation and climate resilient development:

Climate resilient development is enabled when governments, civil society and the private sector make inclusive development choices that prioritize risk reduction, equity and justice, and when decision-making processes, finance and actions are integrated across governance levels, sectors and timeframes (very high confidence). Climate resilient development is facilitated by international cooperation and by governments at all levels working with communities, civil society, educational bodies, scientific and other institutions, media, investors and businesses; and by developing partnerships with traditionally marginalised groups, including women, youth, Indigenous Peoples, local communities and ethnic minorities (high confidence). These partnerships are most effective when supported by enabling political leadership, institutions, resources, including finance, as well as climate services, information and decision support tools (high confidence).¹⁶

Greenpeace believes that a healthy democracy is the key to a healthy environment, and is one of the best tools to tackle the climate crisis. People participation is not only crucial for community resilience and disaster response, but is also vital in attaining climate justice and ensuring climate action.

¹⁶ IPCC, 2022. D.2 p 29.

Bearing witness

Greenpeace's work in helping build resilient communities

Greenpeace Philippines¹⁷ is a local campaigning environmental organization formally established in 2000. The work of Greenpeace since the 1990s helped in the passage of RA 8749 or the Philippine Clean Air Act of 1999, and RA 9003 or the Ecological Solid Waste Management Act of 2000.

Addressing the climate crisis is one of the group's major campaigns. Its climate campaign was established in 2000, and since then, Greenpeace has been working to enable an energy transition in the Philippines as a key solution to the climate crisis. Notably, its climate campaign in the early 2000s helped enable the enactment of RA 9513 or the Renewable Energy Act of 2008.

Greenpeace was one of the first organizations to work on Climate Justice in the Philippines, launching its campaign in 2013. In 2015, together with 32 groups and individuals, Greenpeace filed a Petition at the Commission on Human Rights (CHR) to investigate the responsibility of 50 investor-owned carbon majors (the world's biggest fossil fuel and cement companies which have been cited in a scientific study¹⁸ as the biggest contributors to greenhouse gas emissions) for human rights violations or threats of violations resulting from the impacts of climate change. This Petition gave rise to the National Inquiry on Climate Change (NICC). In May 2022, the CHR released its Final Report on the NICC which recommends that: governments discourage fossil fuel dependence, ensure a just transition for all, provide penalties for carbon emissions, and establish legal frameworks to compensate victims for loss and damage from climate change

impacts, among others. The investigation conducted by the CHR is the first ever globally to be undertaken by a national human rights institution. The report it issued is also considered a landmark document in holding carbon majors accountable for the impacts of the climate crisis.

The petition is in part the result of Greenpeace Philippines' work with climate survivor communities in the country. Part of this work is climate emergency response. Since 2006, Greenpeace has been on the ground documenting some of the worst typhoons to make landfall in the country and bear witness to the devastating impacts of the climate crisis and call for solutions at the national and international levels, as well as to ensure that voices of those most affected by the climate crisis are amplified so that they are heard by local and international decision makers.

Since 2020, following the launch of Greenpeace's Liveable and Sustainable Cities Campaign, the organization expanded its climate emergency response with preparedness, working with local government units to ensure that their DRR strategies fully integrate a citizen-centered response.

¹⁷ Greenpeace Philippines. <https://www.greenpeace.org/philippines/>. Accessed 21 Dec 2022.

¹⁸ <https://link.springer.com/content/pdf/10.1007/s10584-013-0986-y.pdf>

Volunteer workers prepare eco bags from Greenpeace Philippines before a relief goods distribution inside an evacuation center in San Juan City, Metro Manila, Philippines. About 22 families living in flood-prone areas in San Juan were forced to evacuate due to Super Typhoon Rolly, international name Goni, that further weakened, sparing the Philippine capital from its onslaught.

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Box 1. Greenpeace Philippines' Climate Emergency Preparedness and Response Project (CEPR)

As climate impacts become more and more severe, so too does the need to urgently respond to them in a programmatic, people-centered, and forward-thinking manner. CEPR has grown in the past two years as one of the more important activities that Greenpeace Philippines has implemented, serving as a platform to amplify calls for climate justice and the energy transition. The CEPR Project aims to systematize and embody a story Greenpeace has long told: that through building agency for genuine solutions-based people participation in response and preparedness in the context of worsening climate impacts, we are able to speak truth to power against the worst offenders of the climate crisis.

The project envisions preparedness and response as a catalyst for urgency and the demand to hold carbon majors and governments accountable for the false narratives they perpetuate about the climate crisis. This is done through partner-centered capacity building and storytelling to change mindsets, and through building agency and leadership to pursue solutions.

As part of the project, Greenpeace documents and bears witness not just to the devastation wrought by the climate crisis, but also to the agency of communities and groups that are helping each other in these times of crisis. On the ground, Greenpeace also provides immediate response via piloting sustainable solutions that can help show the way towards a green recovery. This includes demonstrating how off-grid RE systems and solutions prove to be reliable and readily deployable during times of climate emergencies, showing how green evacuation centers can help local governments improve emergency response, and catalyzing mutual help efforts by connecting groups, as well as youth and student groups with communities and local governments, such as with the provision of community kitchens, and locally sourced healthy farm produce from ecological agriculture advocates.

Source: Greenpeace Philippines project document for the Climate Emergency Preparedness and Response Project

About this toolkit

This publication compiles field experiences of grassroots organizations that we have partnered with in our work on climate emergency preparedness and response. It is packaged as a campaign toolkit compiling ideas for action shared and developed with our partners. By laying out how these grassroots initiatives can contribute to local resilience building, this toolkit hopes to provide a framework for action in implementing climate-friendly disaster risk reduction and climate change adaptation and mitigation practices at the local level.

Why this toolkit

Local governments need to go beyond the traditional DRR and climate change adaptation and mitigation (CCAM) strategies on paper or plans and look at localized solutions already practiced by communities.

The need to engage and work with local communities to build more adaptive and climate-responsive cities and communities is today more pressing. In this toolkit, we showcase emergent, innovative, and grassroots-led programs and practices in order to inspire and motivate local government units and citizen groups to work together towards climate solutions and climate resilience. We hope this in turn can help:

- strengthen community participation in the DRR and CCAM planning processes and in the early stages of disaster risk reduction and management, and in the larger goal of building climate resilience in their localities;
- convene experts, people's organizations, academic institutions, professionals, youth, and development organizations to co-develop local frameworks that can provide guidance for disaster management offices in implementing green and sustainable practices in their DRRM plans and programs; and
- nurture partnerships among stakeholders as we move towards attaining sustainable, livable, and climate-resilient and responsive cities.

Methodology

A participatory method was employed in the development of this toolkit, blended with qualitative research methods with ethnographic and phenomenological elements to ensure that the stories captured were as accurately told as possible and their impacts to their greater communities evident. The process was as follows:

- Focus group discussions with representatives of the partner organizations were undertaken to bring to light their contributions to the Ideas for Actions.
- Meetings were conducted to engage the partners to gain ownership in setting the objectives, developing the methodology, and identifying the expected results converging in the way forward.
- For data analysis, thematic and discourse analyses were conducted and were laid out narratively.

The stories form the backbone of the “menu of actions” that interested government units can take a look at and use to thematically delve into their issues with the lens of people-centered and people-driven approaches to addressing climate impacts. These can then become actionable recommendations which LGUs can decide to take on as it fits their needs and in line with their prioritization of DRR and CCAM.

Scope and limitations

The toolkit is not a policy document and is not meant to be prescriptive. Rather, this publication opens different opportunities for local government units to benchmark their own people-centered climate interventions to implement in the short term, and to mainstream in their respective disaster risk reduction plans in the medium and long term. While the examples and best practices are context-specific and particular, the toolkit helps to set out the menu of actions according to their specific issues depending on what is important/critical in their own locality. In this regard, the document can help frame discussions on climate justice and disaster resilience according to the thematic areas laid out.

Perspective: the political economy of DRR

Recognizing the complexity of the climate crisis and compounded risk brought about by local environs, DRR is not simply a technical challenge because it needs to generate the necessary political incentives to make it work. Understanding the political economy of DRR requires awareness of the reasons and needs of the government and individuals and their communities on the various aspects of DRR itself. We can do this by using the political economy analysis by Williams (2011),¹⁹ to identify the critical drivers for stakeholders to work together toward DRR and CCAM policies and plans. Some of the important political and economic issues we need to analyze are the following:

- **Public goods.** Its immediate availability and the capacity of individuals and their community to obtain it, or the capacity and responsibility of the government to provide it. Examples of public goods in DRR include dam management, flood controls and/or pumping stations, collecting and communicating information on risk, and providing and enforcing safety-enhancing regulations including building codes and local zoning ordinances.
- **Behavioral factors.** The public has different attitudes toward hazards, particularly in their awareness of the level of risks and measures to prevent or mitigate them. These behaviors manifest the indifference of the people to DRR which requires the government to solely take action on it. This in turn may be due to the perception that the government should protect them from risk and provide relief after a disaster.
- **Coordination.** Both the public and the government are required to coordinate actions for effective DRR and CCAM. Disaster risks know no boundaries, operate across municipalities, regions, sub-national and international geographies, and with interconnected issues. Thus, collective action for DRR and CCAM certainly requires government leadership and community involvement across all sectors. For example, addressing urban floods is not as simple as the construction of sewerage and pumping stations but requires a multidisciplinary approach which considers watershed management, hydrodynamics, urban planning, solid and liquid waste management, ecology, and social infrastructures in order to be successful.

¹⁹ Williams, Gareth (2011). The Political Economy of Disaster Risk Reduction. An analysis prepared as UNDP's contribution to the Global Assessment Report on Disaster Risk Reduction in March 2011. https://www.shareweb.ch/site/DDLGN/Documents/Williams_2011_Disaster%20risk%20reduction.pdf. Accessed 21 Dec 2022.



1 December 2019

A member of the the Municipal Disaster Risk Reduction and Management Office (MDRRMO) writes on a relief operations board in preparation for Typhoon Tisoy, international name 'Kammuri', in Legazpi, Albay province, eastern Philippines.

© Basilio H. Sepe / Greenpeace

- **Externalities.** In many environmental activities, actions that benefit one group of resource users might impose external costs and risks on other groups. For example, the construction of an expressway along the river can increase the flooding risk for people living in other cities and affect fish pens upstream. Hence, policy measures are required to manage these externalities.

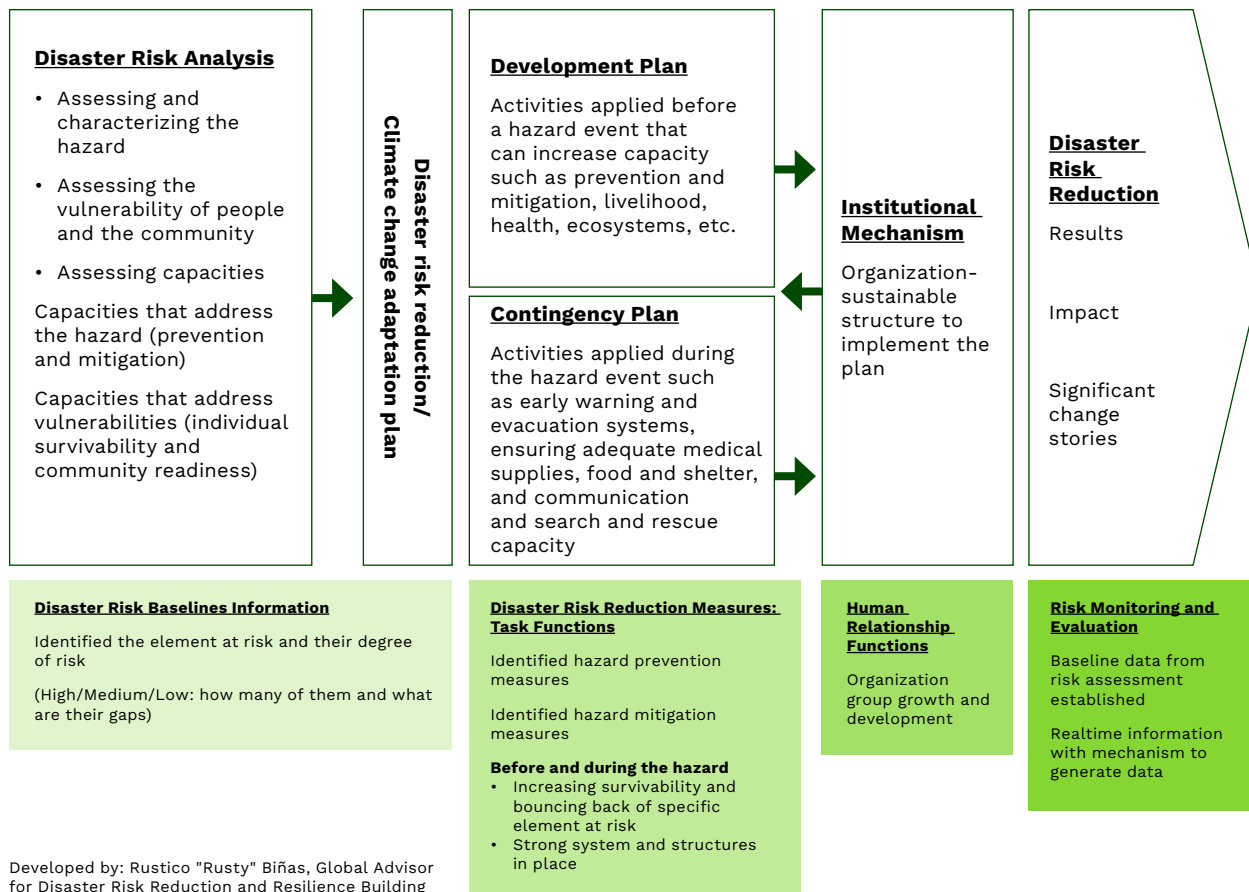
It is very crucial that public policy and consolidated community action are included in all aspects of DRR—from risk analysis, prevention,

reduction, mitigation, and recovery. Governments are mandated to lead, but individual and community involvement uphold the principle of subsidiarity. Those closest to disaster risks have a say in determining, resolving, and achieving DRR measures, leading to community resilience. Understanding and action of local level stakeholders are more important than that of central or national agencies, and the role of government and civil society organizations becomes one of facilitation.

Building resilient communities: proactive approach

While disaster risk management is considered the primary responsibility of the government, there is still a need to set up institutional arrangements that can build the capacity of all sectors and manage risk. In principle, there are existing tools being adapted to prevent disasters. Institutional mechanisms created through analysis of the political and economic aspects of DRR such as policies and structures enable us to implement the DRR and CCAM plan. In this toolkit, we will be referring to this design flow as a basic minimum in building resilient communities (see Figure 1).

Figure 1. Building resilient communities: basic minimum



In this framing we look at the following components of a DRR plan in building resilient communities.

A. Disaster risk assessment

Communities are dealing with multiple hazards. A hazard-specific risk assessment is essential in order to determine the appropriate development and contingency plans. Identification and prioritization in addressing the needs of the most at risk in the community is the best way forward.

Disaster risk analysis or risk assessment involves the assessment of the following:

1. Hazard characterization;
2. Vulnerability of the people and the community;
3. Capacity that addresses the hazard and vulnerability; and
4. Vertical and horizontal analysis that translates the gaps into objectives.

B. DRR action plans / CCA plan

The outputs of the risk assessment will determine the plan of action that local government units are mandated to prepare. It includes the following plans:

1. **Development plan.** This represents ideas for action *before* the hazard. The objective of the development plan is to strengthen and increase the capacities of the community and other stakeholders to be resilient to the hazard. This includes livelihood, health, and education activities / outputs / outcomes, through the setting up of systems and structures to be prepared before any hazard event happens.
2. **Contingency plan.** This represents ideas for action *during* the hazard. It guides the action of a community and other stakeholders when responding during the actual occurrence of a hazard. It is tailor-made precisely according to the needs of the community and to the hazard that is most likely to happen. The objective of the contingency plan is for community systems and structures to save more lives and reduce damage.

3. **Recovery plan.** Building stronger recovery responses involves addressing the fundamental causes of disaster risks. It entails the transformation of systems and structures.

In implementing these plans, it is important to have effective institutional mechanisms from all levels of society. The Hyogo Framework for Action²⁰ strategic goals include “the development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.” It also highlights action for ensuring disaster risk reduction management (DRRM) as a national and local priority with a strong institutional basis for implementation.

4. **Monitoring and evaluation plan.** The relevant indicators are identified, and risk reduction progress is measured by organized communities.

²⁰ ISDR, 2005. Hyogo Framework for Action 2005–2015: ISDR International Strategy for Disaster Reduction: Building the Resilience of Nations and Communities to Disasters. Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6). <https://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>. Accessed 21 Dec 2022.

Ideas for action

DRR is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disaster.²¹ It is a conscious effort to reduce the risk of disaster by empowering individuals and communities with the capacities to survive and bounce back through hazard prevention, mitigation, and vulnerability reduction.²² The menu of ideas presented in this toolkit shows two general measures for DRR, 1) addressing the root cause of the hazard, and 2) addressing the element at risk.

Addressing the root cause of the hazard is preventing the hazard from happening. However, some hazards naturally occur (e.g. earthquakes, volcanic eruptions). Therefore, we could not take action to prevent a natural hazard from happening. But, reducing the force of the hazard is possible through mitigation measures. Prevention and mitigation measures are actions directed to address the hazard. In this context, DRR practitioners and experts have now been advocating to minimize the use of the term “natural disasters” since disasters only happen when hazards strike and when there are “serious [disruptions] of the functioning of society causing widespread human, material or environmental losses, which exceed the ability of the affected communities to cope using their own resources” (IFRC).

To reduce risk, it is important to understand the elements at risk or assets—everything (building to economy, individuals to communities) that might be exposed to hazards—and manage it. These are actions directed to increase survivability and bouncing back of the element at risk. These actions include the following:

- ensure systems and structures are in place for the element at risk to survive and bounce back;
- determine appropriate measures for a specific element at risk depending on the degree of exposure to the hazard; and
- identify capacities required to ensure safety and well-being of the element at risk.

Addressing the hazard by increasing the capacity of the element at risk and establishing effective and efficient systems and structures are crucial to DRR and CCAM. Conscious efforts to build capacity and manage hazard situations with sufficient capacity can prevent disasters.

This section features stories from community partners—Ideas for Action—that showcase adaptive and climate-responsive actions of communities in collaboration with other stakeholders. These best practices and lessons learned are aimed to be shared with local governments with the hopes that they will adapt or replicate these in their cities and municipalities. These are stories of actions to increase the capacities of individuals to be able to bounce back during or after a hazard. These stories showcase how communities can build back better through a transformation in their systems and structures. Table 1 summarizes the ideas for action presented in this toolkit.

²¹ UNISDR. 2009 UNISDR Terminology on Disaster Risk Reduction. https://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf. Accessed 21 Dec 2022.

²² Biñas, Rustico (2010). Manual on How to Navigate in a Changing Climate. Caritas Czech Republic. https://www.preventionweb.net/files/18843_18776manualonhowtonavigatethroughac.pdf. Accessed 21 Dec 2022.

Table 1. Summary of ideas for action on DRR and CCAM in the stories

Stories		Ideas for action on DRR and CCAM
I. Addressing the capacities of the element at risk: Individual survivability providing for basic needs before, during, and after the hazard		
Food	1. Community-supported agriculture: a sustainable, people-powered local food system	Implementing a community-supported agriculture model or “people-powered local food system networks that strengthen the relationships of farmers and consumers” based on agroecological practices (such as organic, regenerative production methods with social and political dimensions), and biodiverse cropping, for food supply that is not only ecologically sustainable but which also shortens the route from farmers to consumers, thereby establishing a resilient local food system.
	2. Together we stand: Pasig youth community pantry	The community pantry is a collective community response that aims to address the food needs of affected people during a hazard event or declared disaster.
Shelter	3. Embracing bamboo-based starter home models: Negros Oriental's shelter for resilience	Developing housing strategies using bamboo to build strong and disaster-resilient houses before the hazard strikes and rebuilding damaged / destroyed houses using bamboo for disaster affected families.
	4. Alternative temporary shelters: a menu of options	Alternative Temporary Shelters are a range of solutions that address the emergency shelter needs of internally displaced populations (IDPs) within 24 to 36 hours after a disaster, with shelters applicable even for long-term displacements, to guarantee human dignity and sustain family and community life.
	5. Guiuan: climate resilience through homeowner-driven on-site house reconstruction	The municipality of Guiuan's recovery after Super Typhoon Haiyan included developing stronger communities through homeowner-driven on-site house reconstruction.
II. Addressing the capacities of the element at risk: systems and structures that help individual elements at risk to survive before and during the hazard and to bounce back.		
Inclusive mobility	6. Moving as one: inclusion and mobility in public transport	The initiative of Move As One Coalition calling for massive investment in public transport and the establishment of a bike lane network system in Metro Manila, Cebu, and Davao have helped many bike commuters survive, especially during the COVID-19 pandemic when public commuting became unavailable and posed contagion risks.
Planning with the people	7. Dig deep Potrero: from Typhoon Ondoy to contingency planning	The contingency plan of Barangay Potrero in Malabon City boasts of an incident command system and early warning signs and signals before a hazard strikes.
Community-managed evacuation centers	8. Friendly evacuation centers for the most at risk	The establishment of community-managed evacuation centers highlights the relevance of community consultation and participation, particularly in design and construction of these centers.

Effective communication	9. Disaster busters: risk communication interactive learning	The use of social media tools to communicate DRR and climate resilience in a creative way modernizes how DRR and CCA are communicated for the benefit of the communities.
Ecosystem-based DRR	10. The verge of collective planning: nature-based solutions in mitigating flood disaster risks	Advocacy for nature-based solutions within the development council planning process is done through providing technical information relevant to the city's green infrastructure, integrated coastal zone management, and area-based conservation, among others.
Accountability	11. San Juan City DRRMO: tools for visibility and accountability	San Juan City's DRR Management Office's system of implementation and monitoring uses portable cameras for visibility as well as accountability.

Each Idea for Action below is presented with a brief situationer and detailed approaches in a storytelling format which is then synthesized through challenges, possibilities, and opportunities that the reader / user of this toolkit can take inspiration from for the development and / or updating of their respective DRR and CCAM policies and practices.

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1 Addressing the capacities of the element at risk: Individual survivability providing for basic needs before, during, and after the hazard

A. FOOD - just and resilient food systems

Our food systems are currently dominated by industrial systems that harm the environment and people. In many countries, including the Philippines, the preference for a meat-heavy diet has led to health problems—and has also contributed to the climate emergency. A 2021 study showed that food systems are responsible for a third of global anthropogenic greenhouse gas emissions,²³ highlighting how critical this is to climate change mitigation. Greenpeace believes we need to change food systems to make them more just and responsive to the climate emergency. The following stories of innovations provide ideas for action to address the need for food during and after the hazard.

²³ Crippa, M., Solazzo, E., Guizzardi, D. et al. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nat Food* 2, 198–209 (2021). <https://doi.org/10.1038/s43016-021-00225-9>. . Accessed 22 Dec 2022

11 July 2014

Salvador Balbido, an ecological agriculture farmer shows black rice which is ready for harvesting in Sito Urok, San Antonio, Santa Magdalena, Sorsogon.

© Nathaniel Garcia / Greenpeace



7 July 2015

A farmer works on an irrigation canal next to the Climate resiliency field school (CRFS) demo farm in Gerona, Tarlac.

© Greenpeace / John Novis

1: Community-supported agriculture: a sustainable, people-powered local food system

“At a time when people were hoarding food in the city and many were afraid of hunger-induced civil unrest, our farmers in Bauko had an open-garden policy: anyone can take what they need. In Capas our farmers were ready to teach when their neighbors finally took an interest in gardening for food security. Wouldn’t these farmers provide hope in every barangay? Now that I see how Pamayanihan can strengthen our people in mind, body and friendship all over the Philippines, I believe that we have something truly wonderful to share. Together with our farmer partners we open up conversations with LGUs on how to deepen our organic commitment and share our model to more communities in the country.” - Charlene Tan

SITUATIONER

Have you ever wondered where your vegetables come from? Before it gets to your kitchen, it goes through a long supply chain from the farm to wholesalers to market vendors to the *talipapa*, and so on before it is bought. Since it goes through that long supply chain, the price also adds up and it becomes expensive. Either that or the produce is bought *bagsak presyo* (at extremely low prices) at a disadvantage to the producers, devaluing farmers’ labor. Ironically the very people who feed us are among the country’s poorest sector, and they experience regular periods of hunger.

This reality spurred Good Food Community to initiate Community Supported Agriculture (CSA) or what they call “Pamayanihan” in the Philippines. Early CSA initiatives started in Japan and Chile in the 1970s, and was popularized in the US in the mid-1980s.²⁴ In Japan, the “Teikei” movement started as a response by consumers who were worried about the use of agrochemicals in food, and farmers who did not agree with the industrialized system of agriculture.²⁵ This practice encapsulates the principles of intended farming and mutual assistance, and is ecologically, socially, and economically sustainable.

²⁴ Harmon, Allison. Community Supported Agriculture: A Conceptual Model of Health Implications. Austin Journal of Nutrition and Food Sciences (2014). <https://austinpublishinggroup.com/nutrition-food-sciences/fulltext/ajnfs-v2-id1024.php>. Accessed 22 Dec 22

²⁵ Kondo, C. (2021). Re-energizing Japan’s teikeimovement: Understanding intergenerational transitions of diverse economies. Journal of Agriculture, Food Systems, and Community Development, 10(4), 103–121. <https://doi.org/10.5304/jafscd.2021.104.0031> Accessed 22 Dec 22

APPROACH AND PROCESS

Good Food Community, formed in 2011, brought the CSA concept and technology to the Filipino context, moved by the poverty and hunger experienced by Filipino farmers. Guided by the framework below, they have been implementing the “many farmers-many consumers” version of CSA for more than a decade now.

Food security and food sovereignty consider collective action. The concept entails transforming consumers into co-producers with a stake and a role in food production. This means that as co-producers, they pay a subscription, indicative of their commitment, for a season’s share of the harvest. The subscription covers a period of four (4) to 12 weeks. This is collected from them by Good Food. Such a mechanism ensures that the farmers’ harvests are bought. Through the subscriptions’ advance payments, Good Food and its consumers are able to ensure purchase guarantees based on agreed pricing and minimum volumes with the farmers, allowing the latter to focus on sustainable production with the Philippine National Standard for Organic Agriculture as the minimum standard.

Starting with 11 farmers in Capas, Tarlac, Good Food introduced the CSA subscription model as they transitioned from planting rice (which was the main crop in the Central Luzon area) to planting organic vegetables. The women farmers were the most responsive partners toward small-scale organic farming, as they were the ones who took care of their families’ daily food needs. They were motivated to grow a diverse set of crops that their families could eat. As their produce began to exceed family consumption, Good Food started sourcing their surplus organic fruits and vegetables to bring to consumers in Metro Manila, two hours away from Capas, and offered these consumers a chance to know the people who grew their food and develop a more direct relationship with them.

Every week, the farmers’ harvests are packaged by Good Food using native woven baskets called *tampipi* to avoid single-use plastics. Good Food delivers these farm shares to consumers in Metro Manila, who are considered co-producers or farm shareholders, with a guarantee that these fruits and vegetables are fresh, organic, safe, and in season. Good Food facilitates the

relationship between producers and eaters, and the latter is able to give feedback to the farmers on the fruits and vegetables they receive, promoting the idea that consumers have a role and a stake in food production. This creates an enabling environment for the farmers and the co-producers and helps improve the quality of produce. Hence, a relationship between the farmer and the consumer grows beyond their respective roles in the demand-supply chain. This is the continuing collaboration in the food production-consumption cycle.

As the model emphasizes biodiversity, every week there are about 60 to 70 varieties of fruits and vegetables grown and harvested. The farmers learn more about the benefits of diversified farming, including the varied ecosystem services provided by biodiversity, while consumers are guaranteed a more diversified diet, which is essential to health and wellbeing.

The experience progressed into the organizational development and collective marketing of the Capas farmers. Good Food continues supporting the farmers through guidance in developing their own policies in terms of production, pricing, deliveries, and monitoring of operations. To help the farmers understand the market demand, they collectively undertake strategic planning, specifically crop programming using modular agricultural systems. This helps Good Food and the farmers balance the consumers’ need for consistent supply with the diversity needed for the health of the soil, people, and the environment. While Pamayanihan prioritizes seasonality, farmers can also program crops within a larger system of companion plants and sequential soil-building techniques so that they are able to grow food for both sustenance and livelihood while protecting their production resources. Good Food also provides partner farmers with logistics support.

Eventually, Good Food expanded its partnership with the farmers in Nueva Vizcaya, Bauko in Mt. Province, Tublay in Benguet, and Daraitan in Rizal.

Good Food is also involved in advocacy initiatives for awareness building about CSA. They provide continuous consumer education with an emphasis

on sustainability and social and environmental benefits. Expansion of marketing access for the farmers' produce entails product matching for areas where Good Food finds potential clients, such as Metro Manila's co-producers. Good Food also helps consumers in their transition to a healthier lifestyle and the CSA model. It offers subscribers support on its website and social media platforms. Subscribers can check out expected contents of their farm share at the start of the week to help them plan their weekly menu, with links to recipes and additional information on proper storage and suggested preparation and cooking techniques.

The CSA model is different from other sustainable agriculture (SA) models in terms of guaranteed

markets. Other SA models only focus on production, sustainability, lower costs, and increased productivity. For marketability, Good Food also works together with the farmers in terms of crop planning, seed support, credit, greenhouse construction, and strategically marketing as a group. According to founder Charlene Tan, Pamayanihan has positively grown over time to encapsulate the many skills that they have learned with the farmers, particularly in collective marketing, production planning, post-harvest care, and delivery. Thus, when the pandemic came, this system proved to be resilient. At present, Good Food and its partners continue with the learning cycle and also continue to share the technology with other interested co-producers.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

Sustained marketing assistance to farmers offer continuous supplementary income for these families. However, much work still needs to be done to compete against the hegemonic industrial production pressures that plague our agricultural system.

- 1. Low interest of other farmers in organic farming.** Since most of the farmers are into rice and sugarcane production, organic farming is not a priority. While organic farming may be labor intensive, the women in the different farming communities are more receptive to it and they have committed to engage because it did not entail a lot of expenses, it secured their families' food needs, and provided them with a stable income. They were able to participate in it with minimal investment. Good Food continued to provide training on organic farming such as vermicast production for fertilizer and other natural farming practices. Addressing interest by explaining the ideas and concepts of organic farming and linking it with CSA entails investing time in community organizing and advocacy. Aiming to gain increased understanding and behavior change may eventually lead to adaptation by individuals and families on farming practices that can be integrated into their daily routine. With the vegetable gardens in their backyard, families tending to these crops for their daily source of food are sustaining their food security.

- 2. Inadequate linkage to LGU systems and structures.** In order to sustain the CSA practices that are introduced to communities, there must be a buy-in of the concept and technology. The Pamayanihan, Good Food's CSA model, has the potential to be integrated into municipal development plans if introduced to municipal councils and its relevant committee/s. Finding a channel on how to partner with the LGU is a step in relocalizing the food system, and developing a local level roadmap towards sustainable practices is important. Also, strengthening community systems and structures in addressing the need to maintain production, especially in times of hazard events, needs to be in place. These could include collective forced savings, financial access, and farm planning with a strong emphasis on crop seasonal calendars and diversification.
- 3. Agricultural adaptations for changing climate patterns.** The need of the farmers to adapt to the effects of the climate crisis necessitates a climate risk approach that incorporates risk assessment and analysis to assist them in better crop planning. Likewise, to ensure continued quantity and quality of production, gaps in the capacity to address current and projected climate impacts must be recognized.

- 4. Farmers are linked not only to the market but also to the local government's policymaking for agricultural growth and development in relation to climate change adaptation and mitigation plans.** Farmers need to be included in local government programs involving subsidies and other measures on food supply availability. Procedures for risk reduction towards long-term production to keep the market supplied should also be a priority.

SOURCE

Charlene Tan, CEO and Founder
Mabi David, Partnerships and Advocacy Lead

ABOUT THE ORGANIZATION

Good Food Community is an organization founded in 2011 by a group of Community Shared Agriculture advocates. Theirs is an alternative food system based on ethical and ecological farming that transforms consumers into co-producers. They exist in communities navigating the world of deliveries, Sunday Markets, and eCommerce because of their belief in supporting small-holder farmers. From personal relationships to community care, they work with producers and consumers in creating greater understanding about the connections between the “food we eat, the future we want to shape for our children, and how our biodiversity has to do with our identity and sovereignty as a Filipino people.”

Website: www.goodfoodcommunity.com

Facebook: www.facebook.com/goodfoodcommunity/

Instagram: www.instagram.com/goodfoodcommunity/



17 May 2021

Volunteers wearing protective masks as a precaution against the spread of the coronavirus disease prepare donated food at a 'sustainable' community pantry in Pasig City, Metro Manila, Philippines.

© Basilio H. Sepe / Greenpeace

2: Together we stand: Pasig youth community pantry

“Hindi pala dapat matakot ang kabataan na gumawa ng inisyatiba na makatutulong sa kapwa kabataan dahil meron ding lalabas para tumulong.”²⁶
- Michael John Colminas

SITUATIONER

The government declared a State of Public Health Emergency through Proclamation No. 9221 in March 2020 due to the COVID-19 pandemic. The entire island of Luzon, including the National Capital Region, was placed under “extreme community quarantine” (ECQ). Mobility restrictions and the temporary closure of non-essential businesses greatly impacted Filipino families who were most economically at risk. A survey conducted in 2021 showed that more than 60% of households experienced having no food on their tables during the pandemic lockdowns.²⁷ As a response, local governments distributed food packs as people were restricted from going out of their homes.

The Social Weather Station reported that in the fourth quarter of 2020 the incidence of hunger in

the Philippines was at 16%. The average incidence of hunger for the full year was at 21.1% or equivalent to 5.2 million families. Metro Manila was reported to have the highest incidence of hunger at 23.3% of an estimated 780,000 families. Furthermore, over 9.1 million Filipinos lost their jobs during this period.²⁸

Barangay Pinagbuhatan in Pasig City has a population of about 163,598 based on the 2020 census. This represents 20.37% of the total city population. Pinagbuhatan is the 4th most populated barangay in the whole country.²⁹ Tanglaw Kabataan (TK) is one of the most active youth groups of this barangay. It aims to empower the youth sector in support of the UN Sustainable Development Goals.

APPROACH AND PROCESS

During the pandemic lockdowns, two of the founding leaders of TK wondered how they can be of help to their community members. With meager resources, Michael John Colminas, or MJ, along with the other youngsters of the barangay

decided to set-up a table and operate a community pantry. They distributed rice and canned goods. They set up a table of food supplies located in the most populated informal settlers' areas. Initially, they started with 50 people per day as

²⁶ Youth shouldn't be afraid to lead initiatives to help fellow youth because there will be those who will go out to help.

²⁷ CNN Philippines. 62% of households experienced having no food amid the COVID-19 pandemic — survey. 30 Apr 2021. <https://www.cnnphilippines.com/news/2021/4/30/households-experiencing-having-no-food-amid-the-COVID-19-pandemic.html>. Accessed 22 Dec 22

²⁸ Social Weather Stations. Fourth Quarter 2020 Social Weather Survey: Hunger eases to 16.0% of families in November. 16 Dec 2020. <https://www.sws.org.ph/swsmain/artcldispage/?artcsyscode=ART-20201216145500>. Accessed 22 Dec 22

²⁹ Philippine Statistic Authority. Highlights of the Philippine Population 2020 Census of Population and Housing (2020 CPH). 13 Jul 2021. <https://psa.gov.ph/content/highlights-philippine-population-2020-census-population-and-housing-2020-cph> Accessed 22 Dec 22

beneficiaries. Later on, with more donations, the beneficiaries increased to around 100 to 150 per day.

TK devised a system for operating their community pantry. Cash donations are deposited to a bank account. In-kind donations were received in one designated area. A variety of canned foods, sacks of rice, meat, vegetables, eggs, etc. were packed and given to the targeted 150 persons per day. Depending on available supplies, the number of beneficiaries were also adjusted.

Mindful of their various beneficiaries, TK saw that it was better if the supplies provided were based on what was needed by the beneficiaries, and they matched the supplies delivered. They

gathered data from Homeowners Associations (HOAs), provided chicken meat for Muslim community members, vegetables for senior citizens, and go-grow-glow foods for children.

The community pantry movement during the pandemic was an amazing example of the Filipino spirit of volunteerism. It also drove many volunteers to TK. From the original two-person team of TK, the group snowballed into a hundred members. Linkaging and partnerships were also facilitated. In 2020, Greenpeace linked TK with a Dinagat IP farming community in Tanay, Rizal which supplied their community pantries with vegetables. Vendors in Pasig's public market also donated their unsold goods to TK. Future tie-ups are being explored for sustainability in the supply chain.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

With the pandemic's mobility restrictions, many people in low income households in Barangay Pinagbuhatan struggled to earn a living. The community pantry became a venue for sharing and caring for neighbors, acquaintances and strangers alike. It was able to provide food for households who lost their sources of income due to the lockdowns. It was also a venue for sharing ideas. Interaction among community members included discussions about urban gardening where vacant lots in the barangay can be temporarily utilized to plant easy to grow vegetables.

The spirit of the community pantry evolved into other collective activities of helping one another such as "pa-lugaw", outreach programs, and clean-up drives. MJ said, "*Hindi pala dapat matakot ang kabataan na gumawa ng inisyatiba na makatutulong sa kapwa kabataan dahil meron ding lalabas para tumulong.*" (Youth shouldn't be afraid to lead initiatives to help fellow youth because there will be those who will go out to help.)

TK championed the community pantry initiative as a response to the challenges of food security in the country. Seeing excessive food waste in public markets, they thought of collecting and distributing these to those without access

to food. While the community pantry is only a small initiative, TK hopes that such a collective initiative of sharing and caring can be an impactful way to help others survive, and a way for youth to pay it forward.

Volunteerism from the youth is a potent force in organizing and addressing the needs of the community in times of hardship. The community pantry was also a good training ground for youth leadership. TK explored how to participate in local governance structures like the Sangguniang Kabataan and the City Youth Development Council. At present, they still need to undertake the process of formalizing their group into a registered organization.

The community pantry initiative shows how a sharing economy and mutual aid are powerful strategies during times of disaster. It needs to be institutionalized. The local government unit can model participatory venues to include the youth in DRR concerns and efforts. They can be tapped for logistical support for food relief operations. As their participation evolves with capacity building on DRR, they can eventually be the frontline leaders for risk assessment and baseline data gathering in their own barangays.

SOURCE

Michael John Colminas, Convenor, Tanglaw Kabataan

www.facebook.com/TKPinagbuhatan/

B. SHELTER - sustainable housing or shelter during and after the hazard

Provision of shelter during and after the hazard is one of the key components of disaster risk management. Local initiatives are showing us how this can be done by taking into consideration the following points which are demonstrated in the ideas for action in the stories below.

1. Sustainable housing is structured to be low-cost, energy efficient, and one that uses local renewable or recycled materials, while at the same time providing safety and shelter to its occupants.
2. Shelter and housing reconstruction is most successful when users are involved in the design and construction process.
3. Housing reconstruction is most effective when it is integrated with community infrastructure, services and the means to create real livelihoods.



20 July 2015

Boats on the beach during a sunset in Puerto Princesa, Palawan in the Philippines.

© Sanjit Das / Greenpeace

Detail of the roofing structure of a Starter Home Kit that is under construction.

© Daryl Sausin / Kawayan Collective

3: Embracing bamboo-based starter home models: Negros Oriental's shelter for resilience

“Hindi natin maipagkaila na ang laging nabibiktima at natatamaan ng lubos na pagkasira ng mga bahay at propiedad ay ang mga mahihirap nating miyembro ng pamayanan, kasi kadalasan ang mga bahay hindi ganun katibay ang pagkagawa at kadalasan mga ‘non-standard construction materials’ ang gamit. With the new housing innovation by Kawayan Collective, the Starter Home Kit (SHK), p'wede nang magkaroon ng matibay at murang bahay ang isang pamilyang mahirap o nasa laylayan ang estado ng pamumuhay. The SHK is a modular and pre-fabricated type of housing which can be built incrementally and can be improved or upgraded if budget is available. At dahil ang SHK ay gawa sa treated kawayan, marami ding tao ang natutulungan ang pamumuhay dahil nagkaroon ng extra income ang mga magsasaka na siyang may tanim o nagtatanim, at nagsu-supply ng kawayan na siya namang pinoproseso ng mga lokal na trabahante sa treatment facility para ma-treat at magawa ng iba't-ibang produkto.”³⁰ - Aidalyn C. Arabe

SITUATIONER

On the night of December 16, 2021, flash floods and catastrophic winds brought by Super Typhoon Odette (Rai) lashed through the province of Negros Oriental leaving a trail of devastation and unimaginable impact in its path. The onslaught—strong winds, flooding, and falling debris—washed and tore away houses, property, and lives, leaving many people and families homeless and

in dire need of water, food, clothing, and shelter. Data from the Local Disaster Risk Reduction and Management Office of Negros Oriental pegged the death toll at 73, missing at 15 and 102 injured.³¹

Following the aftermath of STY Odette, Kawayan Collective initiated its own efforts in contributing to the ongoing response by communities, groups,

³⁰ We can't deny that the poorest members of society are the ones hardest hit with the destruction of their homes and property, because most of the time their houses are made of non-standard construction materials and the construction isn't durable. With the new housing innovation by Kawayan Collective, the Starter Home Kit (SHK), poor families can have access to strong and inexpensive homes. The SHK is a modular and pre-fabricated type of housing which can be built incrementally and can be improved or upgraded if budget is available. The SHK can also help augment people's livelihoods by giving extra income to farmers who supply the bamboo, which is then processed by local workers in a facility where it is treated and transformed to various products

³¹ Bayoran. Gilbert P. Odette death toll in Negros rises to 118, 25 missing. The Visayan Daily Star. 27 Dec 2021. <https://visayandailystar.com/odette-death-toll-in-negros-rises-to-118-25-missing/>. Accessed 22 Dec 22

and individuals based on its capacity as a social enterprise promoting bamboo as a construction material. The team agreed that one of the immediate needs is shelter. They also agreed

APPROACH AND PROCESS

Kawayan Collective, a social enterprise, innovated a modular and prefabricated home for disaster survivor families and initiated a project to prototype the housing innovation, called the Starter Home Kit (SHK). Architect Ray Villanueva, Kawayan Collective co-founder, designed and developed the starter home model based on the core housing concept. The concept reinforced lessons learned from Super Typhoon Yolanda (Haiyan), particularly in building back better and safer.

Using a three-week-long treatment process, Kawayan Collective turns bamboo into a long lasting material. The group is proud to be one of facilities in the world to comply with ISO-19624 for the grading of bamboo poles for construction. Following this standard ensures that the bamboo parts used in the homes they build are of proper maturity, moisture content, and strength, and will repel insects and resist mold infestation.

Bamboo is widely available and can be locally-sourced. Kawayan Collective's starter home adapts what is called the cement-bamboo-frame technology—a type of housing technology that is climate- and disaster-resilient.^{32 33}

The SHK gives affected families a permanent and decent home that will withstand the next typhoon or earthquake, and it is designed so that it can be incrementally-built or improved as more funds become available. The modular and flexible design makes upgrading or expansion easy. For example, one housing module is made of strong and durable treated wood and bamboo panels. This house design is a Do-It-Yourself (DIY) concept, and no specialized tools or construction skills are needed to build it. The house's cement-plaster layer protects the bamboo from sun and rain, and completes the structural shear walls that have been proven to withstand strong winds during typhoons. When properly maintained, this house will last a lifetime.

to come up with a design. This shelter should provide the family a durable and safer home to live in.

Kawayan Collective conducts training for carpenters and contractors who are involved in the SHK assembly. Training includes instructions on how to expand the house using the same system, familiarization with maintenance requirements, and the do's and don'ts for living in a cement bamboo frame house.

Standard starter home kit components include:

- prefabricated treated bamboo and wood wall panel frames with flattened bamboo and chicken wire mesh;
- prefabricated treated bamboo roof panel frames with wood fascia board;
- wooden door and window frames;
- steel dowels and vapor barrier tape for the concrete plinth beam; and
- epoxy painted nuts and washers with threaded rods cut to sizes needed to assemble the panels.

The following need to be built on site for the assembly:

- concrete slab, concrete plinth beam, cement hollow block foundation wall, and footings;
- cement plaster finish; and
- roofing and flashing.

Kawayan Collective and the Starter Home Kit innovation received support from the local diocese, an international foundation and its subsidiary, and the Department of Science and Technology (DOST) to pilot or prototype 18 units in the municipalities of Tanjay, Bais, Manjuyod, and Dauin in Negros Oriental Province. As of October 2022, there were already 12 units turned over to beneficiary families, all of which are Super Typhoon Odette survivors.

³² Hilti Foundation. Base Bahay Foundation: Affordable Housing and Technology. Oct 2021. <https://www.hiltifoundation.org/projects/factsheet-base-bahay-foundation>

³³ The BluPrint Team. Sustainable Housing Initiative: Base Bahay and 4P Forge Partnership. To Build Filipinos a Better Future-- using Bamboo. 27 Oct 2021. <https://bluprint.onemega.com/sustainable-housing-initiative-base-bahay-and-4p-forge-partnership/>. Accessed 22 Dec 22

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

Introducing new, more durable, and sustainable bamboo technologies for housing construction may very well contribute as a bouncing-back solution to Negros Oriental super typhoon survivors and to the general housing problem in the country. This innovation shows concretely how DRR and development go hand-in-hand. Not only does it offer solutions to DRR and CCAM but it also contributes to the sustainable development mantra of “leaving no one behind.”

The following challenges, opportunities, and possibilities were identified by the proponents:

- 1. As an integrated structure, this bamboo housing model can withstand typhoons and earthquakes.** Prefabricated and treated bamboo products are structurally sound and present an affordable substitute to timber. Roofing and walling elements from processed and properly treated bamboo can last for 30 years. Aside from its technical advantages, bamboo is economical and is locally sourced and produced. Bamboo also grows substantially faster compared to trees used to source timber. Given bamboo's advantages, the lack of coordinated efforts to promote the potentials of a bamboo-based starter house model for DRR contingency plans is a concern. With conventional construction, communities that have experienced devastation face months and years just to rebuild their homes. National agencies that promote technical, institutional, and sustainable DRR solutions need to harmonize the Philippines' development plans and governance mechanisms to strategically and collectively address the building of resilient communities.
- 2. At the local government level, the incremental build bamboo-based starter home promotes the development of policies and programs on the cultivation of bamboo as part of strategies to grow the local economy.** Farmers, cutters, and processors can have gainful livelihoods from bamboo. The production of bamboo handicrafts can also engage other people in the community such as youth, persons with disabilities, and other talented sectors. The local government can also start promoting planting bamboo along rivers and streams to prevent soil erosion and to help in carbon sequestration.
- 3. Bamboo design can be used to strategically and readily implement a contingency plan before a typhoon strikes.** Bamboo can offer a way to retrofit shelters of informal settlers in urban as well as rural areas to help make their dwellings withstand typhoons. Shelter/house risk assessment is necessary for the identification and mapping of houses that need to be typhoon-proofed. If the LGUs can identify these houses before a storm, construction using bamboo design and materials may help prevent damage during the hazard. This kind of baseline information is beneficial to planning for housing DRR initiatives.
- 4. Building local capacities in the propagation of bamboo to ensure the constant supply of raw materials and their processing into quality and construction-grade construction materials are the way forward towards institutionalizing bamboo housing models and implementing initiatives on typhoon-proof housing.** Coupled with the mindset of our Local Government Units (LGUs) and other government agencies that rebuilding homes must be done in safe zones and that the homes themselves must be strong and durable will move us away from the old practice of providing temporary shelters which are usually never upgraded or improved
- 5. Partnerships and collaborations can be further explored with the LGUs and private organizations or groups to scale up the implementation.** This will activate the bamboo industry, and thus will benefit local communities and economies, and ultimately the planet, through the bamboo value and supply chain.
- 6. Research and development aspects of bamboo technology and innovations is a vital field that must be further explored.** The continuing partnership with the Department of Science and Technology (DOST) and other stakeholders supporting the advocacy can encourage sustained efforts in pursuit of development impacts for communities.

SOURCE

Aidalyn C. Arabe, Community Outreach and Bamboo Academy Lead, Kawayan Collective

ABOUT THE ORGANIZATION

Kawayan Collective is a bamboo treatment and processing facility based in Maayongtubig, Dauin, Negros Oriental. It is a social enterprise that aggregates, processes, and distributes beautiful, durable, Philippine bamboo as a sustainable construction material. Kawayan Collective envisions better homes for all Filipinos.

Website: www.kawayancollective.com

Facebook: www.facebook.com/kawayancollective

Instagram: www.instagram.com/kawayancollective/

1 November 2020

A member of the Disaster Risk Reduction and Management Office (DRRMO) inspects modular tents installed for evacuees inside a multi-purpose hall in preparation for super typhoon Rolly, international name Goni, in San Juan City, Metro Manila, Philippines on Sunday.

© Basilio H. Sepe / Greenpeace

4: Alternative temporary shelters: a menu of options

“Bilang pagkilala sa likas na pagiging malikhain, matatag, at mahusay ng ating mga komunidad gaano man sila kahirap, sinaliksik at dinesenyo ang iba't-ibang uri ng Alternative Temporary Shelters (ATS) upang maging kaagapay sa pagsasaayos at pagpapainam ng mga kalagayan ng ating mga bakwit na pansamantalang sumisilong sa ating mga evacuation centers. Bagaman ang pangmatagalang layon ay ilayo sila sa peligro, sa napapanahon na pagtatayo ng angkop na uri ng ATS na may sapat na bilang, hangad namin na pangalagaan at itaguyod ang karapatan ng bawat bakwit sa makatao at ligtas na malilikasan sa anumang nakaambang panganib.”³⁴ - Ar./EnP Geomilie S. Tumamao-Guittap

SITUATIONER

Flooding and temporary displacement are annual recurring concerns in the Cities of Malabon, Quezon, and Valenzuela, especially for communities along the 15-kilometer stretch of Tullahan River which traverses the La Mesa Dam reservoir and empties into Manila Bay. This ecosystem forms part of the larger Malabon-Navotas-Tullahan-Tinajeros river system, and the riverbanks are home to a diverse range of informal settlers. A consortium of humanitarian organizations implemented the Moving Urban Poor Communities towards Resilience (MOVE-UP) Project.³⁵ The Alternative Temporary Shelter component of the MOVE UP Project tapped the United Architects of the Philippines' Emergency Architects for technical assistance. Together with

the MOVEUP consortium of humanitarian NGOs, the team supported the assessment of emergency shelter capacities in partner communities through a combination of scientific and participatory approaches including focus group discussions, interviews, community surveys, and ocular inspections.

Schools, churches, basketball courts, and multipurpose halls are often used as evacuation centers to serve internally displaced persons (IDPs) during typhoon season. Urban poor communities are often located in areas prone to flooding, earthquakes, and fire. Poor quality shelters constructed with substandard materials and non-engineered

³⁴ In recognition of the innate creativity, resilience and talent of poor communities, [we] undertook research and design of various Alternative Temporary Shelters (ATS) in order to become collaborators in improving the situation of people seeking sheltered in evacuation centers. While the long-term goal is to remove them from harm, with the timely construction of ATS units that are fit for purpose for community needs we hope to protect and advance the rights of evacuees to humane and safe spaces that will shelter them from looming hazards.

³⁵ CARE Philippines. Moving Urban Poor Communities Towards Resilience (MOVE-UP). <https://care-philippines.org/wp-content/uploads/2021/08/MOVE-UP-Brochure-July-2017-v3-1.pdf>. Accessed 22 Dec 22

methods also increase the exposure of informal settlers to various hazards. Schools, churches, basketball courts, and multipurpose halls are often used as evacuation centers to serve internally displaced persons (IDPs) during typhoon season. These ad hoc evacuation centers lack facilities for water, sanitation, and hygiene,

as well as nutrition. Equitable access to space, privacy, and safety for evacuees are becoming a significant concern among stakeholders. The consortium's study showed the need to develop context-appropriate alternative temporary shelter (ATS) models to address the massive supply-demand gap.³⁶

APPROACH AND PROCESS

The United Architects of the Philippines-Emergency Architects (UAP-EA) co-developed the Alternative Temporary Shelter (ATS), as one of the components under the MOVE-UP Project. The ATS system is a range of substitute solutions that immediately address shelter needs of affected communities in the initial stages of hazard exposure. The system aims to lessen and solve issues and concerns on privacy, security, safety, resistance from illness and disease, among others. It intends to improve existing temporary shelters by utilizing alternative spaces to address the lack of safe evacuation spaces. Timely and proper deployment of these ATS options during emergencies help sustain family and community life of affected people.

The research, which strongly recognized the experiences and needs of marginalized sectors, was led by humanitarian organizations who worked alongside communities. Robust partnerships with academicians, built environment professionals, local government units, and national agencies provided an enabling environment for non-government organizations, international humanitarian agencies, and development partners to come together and co-create alternative temporary shelter solutions that are context-rooted and science-based. Key to framing DRR are solutions that are suited to communities constantly exposed to floods, typhoons, and other natural hazards.

TECHNOLOGICAL INNOVATION OR PRODUCT

The ATS Menu of Options is a variety of shelter provisions designed for various displacement scenarios. Since communities have different risks, resources, and capacities, ATS solutions are meant to be deployed based on context-specific requirements. To enable this, LGUs and communities must agree on design criteria considering the result of a needs assessment, i.e. profile of the potentially displaced population, displacement pattern, and existing evacuation practices among urban poor. The models include:

1. **Temporary covered court partition (TCCP) system.** This shelter set-up is designed to organize evacuees for indoor venues like multipurpose halls and covered courts. This easy-to-understand-and-build model is an economical, robust, flexible, simple, and efficient structure that provides sheltering needs to evacuees. The partition system is composed of 38 mm-diameter PVC pipes joined together at the bottom using tek screws and at the top using scaffolding clamps to form individual cubic cells.

Each cell measures 2.4 by 1.8 meters, and the partitions are 1.5 meters high. A unit can accommodate a single family of five members. Used tarpaulins or blankets can be utilized as partitions and sidings to add privacy. These cells can be combined into a modular system.

2. **Lightweight tents or outdoor solutions.** This ATS design is developed for displacement scenarios with no available indoor facilities. This option is for situations where only the use of open spaces is recommended for evacuation, such as in the event of a strong earthquake, or when indoor evacuation spaces are already fully occupied, especially during massive displacements. This system includes the following: 1) Barrel Vault Tent; 2) Tarp Tent 1; 3) PVC Tarp Tent 2; 4) Multiple Outdoor Family Shelter System; and 5) Kuhol Tent.
3. **ATS Solutions for protracted displacements.** Within this range, systems include:

³⁶ Tumamao-Guittap, Geomille S. and Talavera, Ansherina Gracet. Developing Alternative Temporary Shelter (ATS) Solutions as Interim Coping Mechanisms for Displace among Urban Poor Communities. http://www.aisf.or.jp/aifdocs/vol_4_16.pdf. Accessed 22 Dec 22

1) a structure using steel angle frames and either plyboards or fiber cement boards; 2) a shelter solution that involves lightweight cardboard core concrete sandwich panels; and 3) a modified container van model. These structures are designed for evacuation camps that are fully exposed to the elements and will be used for longer periods in tandem with managed common water, sanitation, hygiene (WaSH) and food preparation facilities.

These ATS structures are cost-effective as they use readily available materials and are conceived to be easy to assemble without the need for special tools and skills. Given how time is of the essence during emergencies, the ATS construction takes into consideration the need for ease in fabricating, assembling, and dismantling. The turn-around time to construct any chosen

ATS module ranges from less than five minutes to a day. Some models that may require longer fabrication time can be prefabricated and pre-positioned for easy deployment. Communities and LGUs may adopt any of the ATS menu of options tailor-fitted to their context, especially in adjusting dimensions with the available materials on-site, audited available space, and number of displaced individuals. Going beyond providing drawings, specifications and bill of materials, the *Manual on Alternative Temporary Shelters* (2020 Edition) contains guidance on deploying appropriate ATS Solutions including the process of assessment, selection and designing, planning, and integrating these into the disaster preparedness mechanisms of LGUs such as CCCM, DRRM plans, and contingency plans. The manual can be accessed free of charge via: <https://rilhub.org/2021/02/23/manual-on-alternative-temporary-shelters-2020-edition/>

CHALLENGES, OPPORTUNITIES AND POSSIBILITIES

The ATS can significantly increase the capacity of LGUs in DRR planning and implementation. Understanding the following limitations may help surface the connections for adopting systems in the menu of options into the community's emergency response:

- 1. Lack of a community-based monitoring system.** A community-based monitoring system includes basic information on disaggregated data being collected, processed, and validated among the community members. This data needs to be managed in order to determine the various degrees of risks to household members in the face of climate hazards. The macro- and micro- analysis can be used as reference information by stakeholders in emergency response.
- 2. Lack of a community-level plan incorporating results of the hazard and risk assessments.** Those who need the information the most need to be at the center of the interventions being carried out. For marginalized communities, understanding the climate and disaster risk assessment (CDRA) of the locality is vital in order for them to be engaged and capacitated to take the lead role of organizing towards resilience. An assessment of the capacity of existing emergency evacuation centers and the routes that link them together with other significant

infrastructure that is easily accessible to communities can facilitate forward planning and prepositioning of ATS services.

- 3. Lack of a process flow of response from trigger warning to deployment of shelter modalities.** Community organizing as well as capacity building of every individual in the village is key to people participation in any emergency response. Preparedness is the preferable course of action to right-size the shelter intervention to the actual needs on the ground, as opposed to a response-heavy scheme. Developing a robust system to communicate risks and forewarn communities about impending hazard events is vital to mobilizing their capacity for self-help and improving their response mechanisms.

Systems thinking situates the ATS in a holistic approach to analyze and interconnect the solution to its part in the ecosystem. The solutions developed from the multidisciplinary environment of structure and services at the national level (i.e. executive agencies, academia, research institutions, humanitarian organizations, etc.) need to be accessed by the survivors of devastating hazard impacts. Organizing the stakeholders into coordinated clusters is a crucial step in undertaking spatial planning and management, aside from DRR and CCAM development and contingency planning.

It will take more than capacity building to get LGUs and communities to have the right perspective on developing suitable disaster risk reduction and management measures that are context-rooted. While the long-term goal is to identify the most at-risk houses through participatory disaster risk assessment and retrofitting to make these resilient using appropriate construction methodology, there is a need to acknowledge that the sheltering process

is not often straightforward. Therefore, there is a need to look at incremental shelter development. Towards this end, capacity building of local builders will help reduce shelter-related risks by improving the capacity of the house to withstand hazards. Long-term measures towards safer houses and safer sites will lessen displacement, thereby reducing the demand for evacuation centers.

SOURCE

Ar./ EnP. Geomilie S Tumamao-Guittap, Chairperson (2022-2023) United Architects of the Philippines Resilience Architects (UAP RA) and Researcher, University of the Philippines-School of Urban and Regional Plannin.

ABOUT THE ORGANIZATION

The United Architects of the Philippines (UAP) is the Integrated and Accredited Professional Organization of Architects in the Philippines. It was established on December 12, 1974, and currently has more than 44,000 members. The UAP Resilience Architects (UAP RA) is a special committee that serves as the socio-civic arm of the organization. The volunteer group serves as knowledge builders in the field of disaster resilience, co-creators and co-designers of built environment solutions advocating for the welfare of vulnerable communities.

Website: www.united-architects.org

Facebook: www.facebook.com/uaphq/

Twitter: #unitedarchitectsofthephilippines #uap

Instagram: www.instagram.com/unitedarchitectcsph/

24 March 2017

Dante Enage creates an artwork made from debris and memories of Super Typhoon Haiyan, exhibited at the University of the Philippines, Eastern Visayas ground. The artwork was created in support of the global call to "Break Free from fossil fuels".

© Francesco Pistilli / Greenpeace

5: Guiuan: climate resilience through homeowner-driven on-site house reconstruction

“For institutionalization, sa zoning ordinance or sa land use plan ng mga LGUs pwedeng i-advocate itong mga shelter options that we were able to design post-hazard. In the case of Guiuan, the impacts of typhoon Haiyan taught them where to put future settlements in their municipality’s land use plan. Also, there is a tendency to generalize the impacts of the hazard. Let’s say high-risk itong area na ito, yung iba medium lang or low-risk, there is a need to really assess each area and ask the residents how they have been affected by the hazard before crafting general or blanket policies on housing.”³⁷ - Arch. Amilah Rodil

SITUATIONER

On November 8, 2013, Super Typhoon Yolanda (Haiyan), one of the strongest typhoons in recorded history, swept through the central regions of the Philippines and affected at least 16 million people, left 6,300 people dead, and damaged 1.14 million houses.³⁸ Yolanda’s onslaught set a new international yardstick for disaster management, with the enormous challenges it brought to existing emergency response systems. The super typhoon made its first landfall in the municipality of Guiuan in Eastern Samar Province, a coastal town in the country’s Pacific seaboard. Guiuan is made up of 60 barangays—22 of which are coastal, 18 inland, and 20 island.

In the delivery of emergency response and recovery services to the victims, one of the

organizations involved was the Catholic Organization for Relief and Development Aid (Cordaid), an international emergency relief and development agency with presence in the Philippines. Cordaid implemented a Resilient Recovery Program in Guiuan’s two rural barangays (Sulangan and Ngolos) and four urban barangays (Poblacion Wards 9, 10, 11, and 12). Efforts were focused on the development and implementation of solutions that will help the people of Guiuan build back better during recovery, rehabilitation, and reconstruction. More importantly, they also worked together with communities on disaster risk reduction (DRR) to anticipate future climate hazards.

³⁷ For institutionalization, LGUs can advocate shelter options that we were able to design post-hazard in the zoning ordinance or land use plan. In the case of Guiuan, the impacts of typhoon Haiyan taught them where to put future settlements in their municipality’s land use plan. Also, there is a tendency to generalize the impacts of the hazard. Let’s say this area is high risk, others are medium or low-risk, there is a need to really assess each area and ask the residents how they have been affected by the hazard before crafting general or blanket policies on housing.

³⁸ National Disaster Risk Reduction and Management Council. Final Report re Effects of Typhoon Yolanda. 09 Nov 2013. https://ndrrmc.gov.ph/attachments/article/1329/FINAL_REPORT_re_Effects_of_Typhoon_YOLANDA_%28HAIYAN%29_06-09NOV2013.pdf Accessed 22 Dec 22

APPROACH AND PROCESS

Carrying out a holistic approach and putting communities first, the main goal of the project was to finance and facilitate DRR interventions as set up, managed, owned, and implemented by the community members. Resource mapping was undertaken by Cordaid to determine what is available. Based on clearly defined needs and consensus, the community preferred a system called “homeowner-driven on-site house reconstruction.” The process involved consulting the community in the criteria for the selection, evaluation, and finalization of the list of project beneficiaries. The process was participative and involved all households in the community in planning, implementation, monitoring, and evaluation.

The project provided financial assistance which was given in tranches to each household matriarch. A team of architects, engineers, and urban planners provided technical assistance in the assessment and house repair or construction. Communities took the lead in the assessment of the house as an element at risk. They undertook the following: 1) examination of physical damages to the structure; 2) identification of the risks with strong typhoons and floods on mind; 3) analysis of the exposure of the house to the hazard; 4) identification of existing and needed skills and capacities of individuals and communities; and 5) identification of gaps. They used color-coding to identify the risk level (low, medium, or high) faced by each house. The results of the assessment provided various scenarios. Thus, the project identified customized design templates for repairs or reconstruction as the need.

The design templates ensure durability and resilience to enable the houses to withstand the next climate hazard. Each design template consisted of a structural plan and list of materials with costing. The proponents ensured that the items in the list of materials were locally available. These were then provided to the homeowners. The owners hired their chosen team of carpenters and masons to build or repair their houses, and bought the materials they needed using the financial assistance which was a unique feature of this project. Entire families,

including men, women, and children, took part in the daily activities of managing the finances and logistics of their own house repair or reconstruction project.

The project ensured sound financial management of the tranches through a system of monitoring the completion of milestones in the repair or reconstruction process. Cordaid’s community organizers performed the monitoring and reporting. Community organizing and project management services, provided by Cordaid, helped the beneficiaries survive and bounce back post-Yolanda.

Compared to other relocation or housing projects for hazard-affected areas, Cordaid’s Shelter Project in Guiuan is fully utilized by the beneficiaries. The community’s sense of ownership motivated them to mobilize their own counterpart resources for additional improvements to their houses. The project became an enabling environment that reinforced the community’s interaction with one another and boosted their livelihood activities. The housing and community infrastructure activities (i.e., water and sewerage system, garbage collection system) provided labor from among the skilled and unskilled people in the area and nearby towns. They bought materials from local hardware stores. The day-to-day transactions stimulated the local economy and allowed a smooth flow in the supply chain.

Another significant feature of the project is capacity building and technology transfer. As the homeowner hires their own team of carpenters and masons to rebuild the house, the architects and engineers re-trained these carpenters by showing how additional bracings and better connections with bolts can make the houses stronger.

Model houses were installed in one of the TESDA (Technical Education and Skills Development Authority) partner-schools in Eastern Samar. The learning and training aspect was overseen by TESDA through its curriculum and programs.

There are now 230 families living in their new typhoon-resistant houses, while some 300 houses were repaired and reconstructed. In total, 214 carpenters and masons were trained on typhoon-resilient construction techniques. Likewise, nine community infrastructure projects were also undertaken: repair of health

centers, construction of school buildings with toilets, which also serve as evacuation centers; installation of streetlights; restoration of water pumps; and rebuilding of damaged concrete pathways. The collective spirit remained a social capital value in the community.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

The local government unit will always be among the frontliners for every climate hazard. In the case of the municipality of Guiuan, housing reconstruction concerns are invariably part of their contingency plans. In order to be prepared the following may be further looked into:

- 1. Limited capacity of the LGU to provide an enabling environment to undertake DRR planning process in a programmatic manner.** Planning processes which are undertaken in a participative manner through consultation and bringing together various sectoral groups contribute ideas for action that will ensure there is an empowered starting point.
- 2. Lack of investment in local construction practices is a neglected reality.** Technical and vocational skills training for carpenters and masons on new techniques for durable structures is key to developing a pool of local talents.
- 3. Blanket policies on “No Build Zones” limit the potential reach to beneficiaries during post-disaster intervention.** LGUs can consider a review of these policies at multi sectoral levels, especially with the involvement of non-government and humanitarian organizations, to rationalize its operationalization and achieve better coordination on the ground.
- 4. The lack of baseline information in the barangays, towns, and provinces limit the effectiveness of development planning.** Updated maps and demographics of the residents, showing the degree of risk for each element at risk, are important information needed as a baseline to designing and implementing projects, programs, and activities in the annual budget of the LGU.

The Post-Haiyan Housing Project in Guiuan, Eastern Samar can serve as a model for resilience building to help hazard-affected communities bounce back post-disaster. In the continuing development planning cycle and yearly budgeting of LGUs, the following may be considered:

- 1. Technical assistance, community organizing, and project management processes undertaken in disaster risk assessment and their linkages to planning, budgeting, implementation, monitoring and evaluation of the repairs and reconstruction of houses is fundamental to the customized requirements and preconditions of the families and communities in need.** Local construction practices need to be reviewed and strengthened. Climate hazards continue to come and devastate communities and lives of people. With the post-Haiyan best practices and lessons learned, the living literature of documentation of the experience referenced, acknowledged, and shared, all contribute to help mainstream development plans in governance and sustainability.
- 2. Trusting people to reconstruct their houses by providing funds and allowing them to manage their own resources is a work principle that needs to be practiced.** The trust given by the donor and earned by the beneficiaries is inspiring and was crucial to the project's success. From the beginning, the external donor laid out how much money they have and what it means for everyone to contribute and benefit from the process of communal values in managing the allocated resources. Although there were challenges around the project's timeframe, the learning and value reorientation process is an important contribution to the strengthening of the community's systems and structures. Local governments and humanitarian organizations could learn from the process

and use it as a guide for development and recovery interventions with people in the future.

3. **Partnerships and coordination among stakeholders in the field facilitate low-cost, affordable, durable, beautiful, eco-friendly, climate-resilient, and sustainable housing.** This design can be incorporated in the roadmap to DRR and CCAM plans of action. Linkages with Kawayan Collective, United Architects of the Philippines, and the Department of Human Settlements and

Urban Development, among others, are possibilities. The triangulation approach comes handy in the context of Guiuan, where there was cooperation between the communities, the LGU, and the development / humanitarian actors.

4. **Micro, small, and medium enterprises can be tapped as local enabling environments.** The proactiveness of this sector with regard to reasonable prices, available stocks, and even pay later schemes can be a work-around scenario on the ground.

SOURCE

Arch. Amillah Rodil, Architect and Environment Planner, and Project Manager for Cordaid Philippines Typhoon Haiyan Resilient Recovery Program from January to December 2015

ABOUT THE ORGANIZATION

Cordaid is an international value-based emergency relief and development organization working in and on fragility. They operate in areas hit hardest by poverty and conflict. They support people and communities in their struggle to move beyond survival in order to fully participate in equitable and resilient societies. Together they stand with women, men, and children to meet their basic needs and uphold their human rights. Cordaid builds partnerships and mobilizes global networks, resources, and knowledge to help people live in dignity.

Website: www.cordaid.org

Facebook: www.facebook.com/cordaidEN

Twitter: @Cordaid

2. Addressing the capacities of the element at risk: systems and structures that help individual elements at risk to survive before and during the hazard and to bounce back.

A. INCLUSIVE MOBILITY - moving people and goods

Mobility is not just about “traffic and cars.” It's about people moving and being able to participate in society. Considering the fact that humans are made to move, mobility is a human right and should be part of the basic services we should all access.

Sustainable mobility in cities and communities should benefit everyone's well-being, as well as that of the environment and climate. This is illustrated in the ideas for action highlighted in the stories in this section. It is important to note that during and after a hazard, mobility is very limited. One of the major challenges in disaster response and recovery is when roads are impassable. In these scenarios, active mobility is the best option.

Bikes are some of the most efficient tools during disasters.³⁹ When most vehicles have been damaged by floods, bicycles can be more nimble, can pass through narrow or blocked roads and streets, can work even during times of fuel shortages, can help carry load⁴⁰, and can even be adapted to become human-powered generators.

Nonetheless, using the bike as a tool will not be enough if systems and structures are not in place. Bicycle infrastructure such as bike lanes (which can also be transformed into an emergency lane during disasters) together with green and open spaces as part of urban planning is necessary to make cities more resilient.

³⁹ Coville-Andersen, Mikael. The Bicycle: A Vital Tool and Symbol in times of Crisis. <https://colvilleandersen.medium.com/the-bicycle-a-vital-tool-and-symbol-in-times-of-crisis-bb097b002ac4> . Accessed 22 Dec 22

⁴⁰ Gidding, Caitlin Na. Is Your Bike the Ultimate Disaster Escape Tool? . 12 Nov 2015. <https://www.bicycling.com/news/a20049934/is-your-bike-the-ultimate-disaster-escape-tool/> Accessed 22 Dec 22



6: Moving as one: inclusion and mobility in public transport

“May ginhawa at kirot ang bike lanes sa EDSA at sa QC kung saan ako nakatira. Ginhawa kasi sa wakas, kinikilala na ng gobyerno at ng mga motorista ang mga siklistang matagal nang gumagamit ng kalsada. Pero ngayon lang binigyan ng espasyo. Pero kirot din kasi kulang pa ang basta pintura lang na madaling balewalain ng iba kapag matindi ang trapiko. Sa malapit na hinaharap, hangad ko na ang mga siyudad natin ay mas matatahanan (livable) at mas nagbibigay-buhay (life-giving). Inaasam kong p'wedeng maglakad o mamisikleta nang ligtas ang mga bata, babae, matatanda, at mga may kapansanan kasi may daanan, tawiran, at protektadong bike lanes. Inaasam kong malinis at maaliwalas ang simoy ng hangin at daloy ng tubig kahit na nasa siyudad ako—na mayroon ding mga pampublikong parke na may maluwag na espasyo, mga halamanan, mga puno, mga bulaklak, at mga hayop. Inaasam kong makakalaro ang mga estudyante ko sa mga parke at sa mga ilog gaya ng Ilog Pasig at Ilog Marikina, na magiging masaya at buo ang panahon nila bilang mga bata.”⁴¹ - Riz Supreme Balgos Comia

SITUATIONER

The height of the COVID-19 pandemic in March 2020 unraveled significant risks in the Philippines. Among the sectors most affected in key cities, especially in the National Capital Region (NCR), were the daily-wage laborers, medical workers, drivers and operators, retailers or wholesalers, farmers, and fishermen, among others. These Filipinos were navigating around

challenging systems and procedures of public goods and services like healthcare, economy, and public transport.

On March 17, 2020, the government suspended all forms of public transportation in NCR and other provinces in order to keep people at home during the enhanced community quarantine (ECQ)

⁴¹ The bike lanes along EDSA in Quezon City are both a boon and a bane. It's a boon because finally the government and motorists now recognize cyclists who have long been using the roads. However, this space was only given to them now. It's also a bane because the bike lanes are only painted on the road and disregarded by motorists when traffic is heavy. In the near future, I long to see liveable and life-giving cities. I look forward to the day that walking or biking can be safe for children, women, the elderly, and persons with disability because they have pedestrian walkways and crossings and protected bike lanes. I look forward to the day cities have clean and fresh air and water, as well as public parks and spaces, plants and trees, flowers, and wildlife. I look forward to the day my students can play in parks and rivers such as Pasig and Marikina Rivers, and that they live happy and full lives while they are young.

which lasted until June 1, 2020.⁴² The pandemic hampered the mobility of the population—from restrictions limiting people from going out of their homes, to the strict implementation of public health standards in the transportation sector that further decreased the already insufficient number of public utility vehicles (PUVs) on the road.

Move As One Coalition was convened in May 2020. It began working for collective solutions in the transport sector, including lobbying the national government on transport policies. Parallel efforts among youth groups started with the organizing of a hospital loop connecting different medical institutions and facilitating transport for health-workers and frontliners. These activities evolved into moving citizens and institutions away from car-centrism, and encouraging people to

commute, walk, or bike. The broad coalition gained public support from 140 civil society organizations and 77,000 individuals from different sectors, including health care workers, transport workers groups, labor unions, cycling groups, commuters' rights advocates, persons with disabilities, youth groups, economic reform advocates, urban planners, faith-based groups, and climate justice advocates. The coalition recognized that systemic reforms are necessary to create a safe, humane, and inclusive public transportation system in the country. To support the wide and growing range of coalition members in advancing their agenda while maintaining a united front across different groups, the coalition devised a backbone structure and a 2030 vision that would coordinate the coalition's myriad of activities and opportunities.

APPROACH AND PROCESS

During the pandemic, the Move as One Coalition provided the structure to vigorously gather most public transportation advocates to put forward concrete steps for action in their shared vision. With funding support from The Asia Foundation, Affiliated Network for Social Accountability for East Asia and the Pacific, Siptiani Foundation, and the Netherlands Embassy in the Philippines, the coalition was able to organize and assemble its core group to advance their interlocking agendas for collective impact. WeSolve, in their study published online,⁴³ enumerated the core group as follows: sectoral organizers, policy analysts, operations managers, coordinators, and communication officers.

Ideas for action put forward the function and specification of roads that take into consideration speed and mobility in tandem with safety and sustainability. The key challenge is to mainstream solutions that will require every stakeholder to contribute in the policy formulation, design and construction, and utilization of a safe, sufficient, and stable public transport system. They organized dialogues with key government agencies (i.e., Department of Transportation, Land Transportation and Franchising Board, Metro Manila Development Authority, Department of Health, Department

of Public Works and Highways, and Local Government Units) on critical issues, concerns, and problems of Filipino commuters and public transport workers. At the time when the government was drafting the Bayanihan Recover as One Act, which set recovery measures during the pandemic, the group proposed a PHP 110 billion Biyahanihan Proposal which was discussed by the Senate Committee on Public Services. In collaboration with AltMobility and the DOH, Move as One Coalition released a playbook that provides templates and guides for LGUs in building a healthy and active transport environment. This intense advocacy of the Move as One Coalition, gained results. The government allocated more than PHP 12.8 billion in public transport investments and more than 500 kilometers of bike lane networks in Metro Manila, Cebu, and Davao.

Advocacy and awareness on these issues and concerns aimed for a shift in mindsets and behaviors of road users and policymakers. At present, Move as One Coalition is continuing to advance their efforts to: 1) encourage road users to avoid car dependence; 2) motivate local government units to prioritize road designs that disincentivize private vehicle use (i.e., reduced parking space, expensive parking fees, greater

⁴² Rey, Aika. Mass Transportation Suspended in Luzon. Rappler. 16 Mar 2020. <https://www.rappler.com/nation/254784-mass-transportation-suspended-luzon-coronavirus/>. Accessed 22 Dec 22

⁴³ WeSolve FFoundation. Case Study: Mobilizing Public Transport Champions with the Move as One Coalition. 23 Aug 2021 <https://wesolveph.medium.com/mobilizing-public-transport-champions-with-the-move-as-one-coalition-625aff85b410>. Accessed 22 Dec 22

allocation of road space to active transport); and 3) inspire and appeal for support from concerned stakeholders to design underutilized local streets into community spaces, i.e., rest spaces,

increased pavement widths, and other road designs promoting more extensive community use that engender greater interaction among citizens.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

Being a broad coalition, Move As One was able to tackle the multi-dimensional aspects of the public transport crisis by bringing in different experiences, skills, and perspectives. It is now recognized as a voice representing public interest on transport and mobility issues. Members are invited regularly as civil society representatives in public forums in Congress, and are recognized as key partners for feedback on and analysis of public transport programs.

Road users are a key audience that will enable greater active mobility, safety, and air quality in cities. LGUs' policies, plans, budget allocations, and implementation strategies are the action arenas where individuals and groups interact to produce outcomes conducive to active mobility

such as walking and cycling. Pedestrians need to be prioritized over vehicle users, with infrastructure that is walkable, clearly and safely separated from vehicle traffic, and with reduced complexity and difficulty of elevated crossings. Longer crossing distances can cause issues for cyclists, and formalized pedestrian crossings can give insufficient time to allow vulnerable road users to cross.

As the coalition continues to provide a credible representation of a broad set of citizen perspectives, the challenging advocacy arena inspires efforts for constant communication and mutually reinforcing activities on not just solving traffic problems alone but looking at the bigger picture of providing people mobility.

SOURCE

Reycel Hyacenth Nacario Bendaña, Sectoral Convener for Youth, Transport Workers, and Laborers

Riz Supreme Balgos Comia, Civic Engagement and Policy Research

ABOUT THE ORGANIZATION

Move as One is a Coalition of 140 Filipino civil society organizations and 77,000 individuals advocating for a safer, more humane, and a more inclusive public transportation system in the Philippines.

Facebook: www.facebook.com/MoveAsOneCoalition/

Twitter: @MoveAsOnePh

B. PLANNING WITH THE PEOPLE

Hazards are very complex and managing them requires multidimensional approaches. All components of a system should be working together and should complement each other's functions in order for the system to be efficient. Citizen involvement is vital in DRR, recognizing that DRR councils are centered on the task of coordination. In the DRR ecosystem, the coordination must ensure that people within their localities are part of the DRR cycle since they know their environs the best. People's experiences and stories are crucial in developing effective contingency plans, alongside science about the hazard.



10 December 2016

A group of women from the Kika association at their meeting area in Barangay Anuron, Mercedes, Eastern Samar. Kika women are using ecological farming practices to provide basic food for the communities and in times of disasters like Super Typhoon Haiyan.

© Vincent Go / Greenpeace

7: Dig deep Potrero: from “Ondoy” to contingency planning

“Empowered na komunidad, yan ang pinagtutulungan naming maging sa Barangay Potrero. Kahit anong emergency bigay-serbisyo kaming naitalaga nilang pamunuan sa barangay. Sa 5-year contingency planning namin kasali at nag-aambag ng solusyon ang aming mga kabarangay.”⁴⁴ - Kagawad Walter Guevarra

SITUATIONER

Malabon City is a flood-prone coastal city in Metro Manila. In Barangay Potrero, 12 streets, flagged as vulnerable areas, regularly become submerged in flood waters after every strong typhoon or monsoon rain. Some 2,000 residents of the city’s low-lying *sitios* along Tullahan River are the most vulnerable and can experience up to six to 10-feet of flood waters. Typhoon Ondoy in 2009 was the worst so far. The experience led the Barangay Council of Potrero and its community members to gather and develop a Contingency Plan.

In partnership with the Assistance and Cooperation for Community Resilience and Development (ACCORD) and Care Nederland’s Partners for Resilience (PfR) Programme, these community leaders and members undertook a series of training activities on disaster preparedness. The collaboration between Barangay Potrero’s community leaders and members and the two non-government organizations aimed to develop a 5-year plan on how to respond to natural hazards and emergencies like earthquakes, floods, and fires.

APPROACH AND PROCESS

One functional feature of the Barangay Potrero Contingency Plan is an Incident Command System (ICS) with its early warning signs and signals. Water level sensors with sound alarms are installed in strategic posts. Manually operated warning gongs or “*batingting*” are reliable back-ups in case of power outages. Day-to-day forecasts on weather conditions, Metro Manila flood monitoring, tropical cyclone warnings are monitored by community officials and members. Designated barangay personnel and community

Residents living in the vulnerable areas of Barangay Potrero are the primary sources of baseline information on which the plan is anchored. They gave their assessments regarding the challenges they face with natural hazards, medical emergencies, conflict, as well as other fragile situations. Kagawad Walter Guevarra, Vice-Chairman of the Barangay Disaster Risk Reduction and Management Office (DRRMO), recalled how residents proactively shared their experience during Typhoon Ondoy, and how this has informed how the barangay has equipped itself for similar future events. Potrero’s barangay hall is prepared to respond to emergencies with their ropes, life buoys and jackets, helmets, flashlights, solar floodlights, medical kits, communication gadgets, as well as *bancas* and paddles, fire trucks, ambulances, and other vehicles. All households are equipped with go-bags and schools are on stand-by as evacuation centers. Various sectors have also been mobilized to operate the barangays’ 40 rescue teams.

sectoral volunteers monitor news media and the social media platforms of the PAGASA (Philippine Atmospheric Geophysical and Astronomical Services Administration). Information coordination is done through the various group-chats of the barangay’s communication systems and channels. Volunteers from youth groups, women, transport groups, LGBTQ, vendors, businesses, homeowner associations, among others, share their time and resources whenever there is an emergency.

⁴⁴ In Barangay Potrero, we’re working together to become an empowered community. Whatever the emergency, those of us entrusted to lead the barangay are service-oriented. Our fellow barangay residents are part of and contribute to solutions in our 5-year contingency plan.

The barangay's DRRM team ensures the constituents' compliance to agreed protocols. Along with their community members, they also perform their respective functions based on the tasking drills on disaster preparedness, response, and recovery. The 5-year Contingency Plan is further consistently reviewed for continued improvements. Kagawad Walter relates that every time they update of the plan, "*Pinapatawag po namin ang komunidad, nag-uusap kami, sila ang*

nagpo-propose." (We call the community members for a discussion and they do the proposing.) DRR protocols are enshrined in barangay ordinances, so that policies will still be implemented even with changes in leadership. "*Nakasulat po sa libro yan*" (It's written in the books), he quipped. Barangay Potrero also willingly shares their Contingency Plan and its implementation as well as their best practices with other barangays.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

Contingency and development planning require risk assessment. Baseline information is needed to ensure appropriate measures to address specific elements at risk. There is an opportunity to expand the datasets to include the number of people most at risk for a particular hazard, disaggregated by age and gender, as well as their risk level. In addition, the degree of risk of the various elements at risk such as livelihood, infrastructure, houses, and so on, must be determined to address resiliency. Complete datasets define detailed key result areas of contingency and development plans.

The Potrero experience forms part of the local government's mandate to plan for DRRM and CCAM. It needs integration within the city-wide planning process in order to strengthen the systems needed to save lives, reduce damages, and build resilience. The Potrero DRRMO

experiences can inspire other LGU as this is a model that can be adapted by any community in the country.

In summary, the Contingency Plan is a document that institutionalizes the action plan during an emergency situation. However, at the level of operations, permanent staff who can lead the plan are still needed to maintain and improve its implementation. Capacity building is the key to enabling communities to bounce back from disasters and emergencies, and building competencies to manage the hazard events is needed to sustain the gains. In the case of Barangay Potrero's frequent flood events, collective effort in times of crises, undertaken by participative citizens and responsible local leadership, channeled their actions to the realization of their Contingency Plan.

SOURCE

Walter Guevara, Kagawad, Barangay Potrero, Malabon City, and Vice Chairperson, Barangay Disaster Risk Reduction and Management Office

ABOUT THE ORGANIZATION

The Barangay Potrero Disaster Risk Reduction and Management Office is the frontline emergency service provider in the community. Their office is equipped with basic equipment from medical kits to vehicles, and the staff are trained first responders. They continue to determine the community's emergency response needs and build partnerships with the other stakeholders in order to serve barangay residents better.

Facebook: www.facebook.com/barangaypotreronmalabon/

C. COMMUNITY-MANAGED DRR INITIATIVES

In Community-Managed Disaster Risk Reduction (CMDRR), emphasis is placed on the interactive nature of people's participation during the entire project cycle, while in Community-Based Disaster Risk Reduction (CBDRR), information from the community is gathered to determine interventions, which are primarily dependent on external facilitators.⁴⁵

In this idea for action, the community is a partner—not just a beneficiary—of the project. People's insights are collected to design the intervention. In this way, the community is able to own the plans and can implement it better. In the course of co-designing and implementation, feedback and consultation are key processes to improve the project and ensure an equitable and inclusive DRR initiative

⁴⁵ Binas, Rustico. Understanding Community Managed Disaster Risk Reduction. https://www.cordaid.org/media/medialibrary/2013/10/Understanding_Community_Managed_DRR_Rusty_Binas_September_11_2010.pdf. Accessed 22 Dec 22

15 July 2022

Youth from Brgy Coring participate in a workshop and hold a banner that reads "Climate Justice Now" in their community.

© Jilson Tiu / Greenpeace



8: Gender-responsive evacuation centers for island and upland communities

“Consultation is important in DRR planning. As development workers, taking consultation seriously is being open to our ideas being challenged. The plans that we brought to the communities may not make sense if we do not open them for critique by the communities.” - Pamela G. Cajilig

SITUATIONER

After the onslaught of Super Typhoon Yolanda (Haiyan), a design research consultancy firm, Curiosity, worked with the Women’s Education, Development and Productivity Research Program (WeDpro) and led the initiative to address shelter needs in affected coastal barangays with relatively high populations of women with vulnerabilities. The organization’s immediate challenge was how to build permanent housing structures taking into consideration the current and future priorities of affected homeowners.

Curiosity started with a rapid damage assessment of homes, benchmarking it with existing shelter standards. Several prototypes were developed in consultation with women architects, NGOs

and funders, barangay officials, and local residents. The local government unit was not involved so as not to be caught in the middle of local political dynamics. They came up with an evacuation center that was resilient, expandable, and affordable. The shelter design utilized local materials, mobilized homegrown labor and skills, and took into consideration the community’s cultural sensitivities. In the end, no shelter was built as land title related challenges cropped up owing to verbal inheritances, as well as titles and identification having been washed away in the storm surge. Some women who were selected to benefit from the shelter program refused to participate for fear of losing community ties due to being seen as “favorites.”

APPROACH AND PROCESS

Learning from this experience, Curiosity and WeDpro refrained from prescribing a specific shelter structure, and instead, held a series of in-depth discussions with constituents of another project site in order to learn what they felt was the most appropriate type of structure to build. The community opted for an evacuation center. Through community consultations with women evacuees, the structure became a gender-responsive space for protecting evacuees from remote areas during hazard impact, while serving as a community center during normal times. The evacuation center also provided a wide range of services that would address women’s care responsibilities during disaster as well as the well-being concerns of LGBT community members.

When hazards strike, families and communities are separated. Health, education, and social services are disrupted. Community support systems and protection mechanisms break down. While natural hazards know no gender,

their impacts are disproportionately felt more by women and girls. Gender-based concerns usually occur when there is a lack of safe spaces and gender-responsive facilities in evacuation centers or transitional shelters. The participation of women in DRR and recovery is essential because they are more likely to provide insights and solutions from first-hand experiences. They have a better understanding of the risks they face and how women and girls are impacted by hazards. In the context of local governance, women leaders play a crucial role in uncovering barriers that women face during hazard situations, and can create a more inclusive recovery path through policies and programs. Responsive and just spaces which mainstream gender as a cross-cutting action provides a more systematic, organized, and gender-responsive way of delivering services.

The community’s evacuation center is a friendly space where the community experienced a nurturing environment to access free and

structured recreation, and leisure and learning activities. It provides health, nutrition and psychosocial support, and other services / activities which help restore their normal

functioning. It is designed and operated in a participatory manner, and may serve a variety of age groups. Such friendly spaces are important from emergencies to recovery.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

The challenges of “building back better” are socio-cultural as much as they are technological. Curiosity and WeDpro encouraged women to participate more actively in rebuilding their homes. Curiosity worked with women architects and disaster specialists. They facilitated an interactive forum where female residents understood and shared experiences around disaster risks. They learned the process of building their capacities in ways that address their own spatial concerns involving childcare, household management, and other responsibilities. Through visual aids and interactive demonstrations, Curiosity and WeDpro created venues to encourage women participation in resilience and recovery.

The proponents noted that the setting-up of the evacuation center as a gender-responsive

space also resulted in fewer husband and wife conflicts. Women were now also more aware of laws that protected their rights. Recovery efforts put emphasis on the proactive engagement of women in building resilience through the provision of direct assistance for alternative livelihoods, as well as ensuring representation of women in dialogues and skills building. While women have a deeper understanding of their disaster risk, they also have more knowledge about their capacities as important members of the community. Underrepresentation of women in risk reduction results in lost opportunities to rebuild a more resilient community. There is a vital need to ensure that women are represented beyond numbers in situation reports, and that their stories are learned and told.

SOURCE

Pamela G. Cajilig, Co-founder of Curiosity, Anthropologist, PhD Candidate (Humanitarian Architecture Research Bureau at the School of Architecture and Urban Design of RMIT University in Melbourne)

ABOUT THE ORGANIZATION

Curiosity Design Research is a consultancy firm dedicated to helping businesses, non-government organizations, and government agencies design meaningful services by drawing out local insights on belief systems, values and practices, social networks, rules of engagement, and artifacts and materials. They bridge the worlds of decision makers and users to create relevance and optimize resources.

Website: www.curiosity.ph

WeDpro is a non-government organization protecting women and the youth against all forms of violence. They are engaged in advocacy, capacity building, mobilization, and the use of social media and information communication technologies in development programs for victims and survivors of violence against women and children.

Website: www.wedprophils.org

30 August 2018

Community witnesses from Banaue, Ifugao Dalia Nalliw, Buucan Hangdaan, and William Mamanglo testify before the Philippine Commission on Human Rights Inquiry on Climate Change in Quezon City.

© Roy Lagarde / Greenpeace



D. EFFECTIVE COMMUNICATION

All disaster emergencies and crisis events are by nature chaotic and highly dynamic, creating physical, emotional, and social disorder. Hence, effective communication is very important prior to, during, and post-hazard events. Looking back at the case of typhoon Haiyan,⁴⁶ reports⁴⁷ suggest that the public lacked a clear understanding of the term “storm surge,” and this gap may have led to more deaths in Tacloban City. To be effective, DRR language should be understandable by every member of the community. There is a need to communicate DRR in local language and laymanized technical terms so that people can prepare and better respond to the disaster. Moreover, digital maps and social media platforms should be optimized to help increase people’s awareness about DRR. Youth, as digital natives, are leading the way in making DRR communication fun and interactive.

⁴⁶ Carter, Cavarrio. Typhoon Haiyan: Addressing Mistakes and Oversights. The Borgen Project Blog. 9 Jan 2014. <https://borgenproject.org/typhoon-haiyan-addressing-the-mistakes-and-oversights/>. Accessed 22 Dec 22.

⁴⁷ Santos, Lean Alfred. Storm Surge: Lost in Translation and Interpretation. DEVEX. 15 Nov 2013. <https://www.devex.com/news/storm-surge-lost-in-translation-and-interpretation-82311>. Accessed 22 Dec 22



10 July 2021

#DisasterBusters collaborated with Earth Shaker, PAGASA, and PHIVOLCS for the webinar, HAZARDo Versoza: Understanding Natural Hazards in the Philippines.

Photo source: Disaster Busters Facebook

9: Disaster busters: risk communication interactive learning

“Nakaka-amaze din ang mga participants naming kabataan, sobrang bilis nilang mag-isip sa mga breakout sessions. Naa-apply agad nila ang mga natutuhan nilang terminologies sa mga scenarios na naranasan nila during a hazard.”⁴⁸ - Karen Lapitan

SITUATIONER

Super Typhoon Rolly (Goni) buffeted the Philippines with heavy rains and floods in November 2020. At a time when the country was still in the middle of the COVID-19 pandemic, this created a situation of multiple risks among affected communities. At that time, a group of young professionals interested in disaster response were monitoring the news, and weather bulletins. They anticipated a bigger challenge: how can the grassroots understand and act on

risks from natural hazards? Likewise, how can risks be communicated? They concluded that targeting the youth on interventions around risk communications provides a good leverage for them to participate in changing the current situation. Information saves lives and the energy of the youth and the fast-growing pace of digital technologies seemed to match the modality and technique of timeliness in emergency response.

APPROACH AND PROCESS

A group of development practitioners, pre-existing volunteers in their respective action arenas, decided to form and establish Disaster Busters in mid-2020. The group envisions an efficient and effective solutions-based course of action for community members to be prepared in the event of any natural hazard (i.e., floods, earthquakes, volcanic eruptions). The organization aims to empower young leaders to advocate resilience. They conceptualized an intervention that aims to capacitate young environmental champions on DRR and climate resilience. They opened their organization to membership applications based on a set criteria, and recruited 62 individuals nationwide as beneficiaries. The project was funded by the US Department of State through the Young Southeast

Asian Leadership Initiative under their Seeds of the Future annual program.

Disaster Busters implemented a Risk Communication Interactive Learning Process. The project utilized communication channels for technical information on risks and hazards to ensure essential information reached those who need it the most. Mainstreaming DRR is work that needs to go on even in the middle of a pandemic. Making risk information available and accessible can equip the most at risk sectors of the community.

The project beneficiaries, students and young professionals from across the Philippines, were brought together to exchange both theoretical and

⁴⁸ I'm amazed by our youth participants. They're very quick thinkers in breakout sessions. They are able to apply the terminologies they learned to scenarios they've experienced during a hazard.

practical knowledge on pressing issues on DRR and climate resilience. The proponents organized webinars and virtual workshops, provided mentorship opportunities, and produced a toolkit to increase understanding and move advocates for on-ground actions. Through this interdisciplinary approach, the project encouraged collaboration among the participants who come from different backgrounds. People with disabilities, indigenous peoples, and the LGBTQ+ community were all part of the conversation.

Disaster Busters' social media tools communicated DRR and climate resilience through content that was creative and attractive to the target audience. Sessions like "Sana-All or Sama-All: Working Together to Make Disaster Risk Reduction and Management Inclusive" provided a platform to tackle the struggles and capacities of women, persons with disabilities, indigenous peoples, and members of the LGBTQ+

community in the context of disasters. Speakers from civil society organizations shared their experiences and insights about making DRR inclusive. Moreover, the youth fellows were tasked to develop disaster mitigation measures for a particular vulnerable sector.

In the session "(M)appy Hour: Maps and Other Tools in Disaster Management" in collaboration with MapaKalamidad.ph and PHIVOLCS-DOST, the participants were introduced into an open-source platform for emergency response. As the project ended, some of the participants were able to launch their own DRR communication projects replicating what they learned from the project.

Engaging the youth increases their participation in emergency response. Rather than being "victims," with this model of DRR and CCAM intervention, the youth become leaders in these development actions.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

The 62 beneficiaries, equipped with knowledge and skills on DRR and CCAM, were trained so that they can in turn reach out to and capacitate their fellow-youth. However, continuing efforts to substantially increase the number of youth with relevant knowledge and skills is a challenge. Resource mobilization is an important next step in taking the project forward.

Reaching the youth from the most vulnerable communities and making them the beneficiaries of these risk communication initiatives is another significant challenge. The project happened during the pandemic and utilized the virtual platforms for learning. Power supply, internet providers, and connectivity may not be wholly available in remote and far-flung islands of the Philippines. The group is now exploring a face-to-face modality.

Local government units also need to appreciate risk communication. Compared to other structures on the ground, it is the LGU, through the Sangguniang Kabataan, which can be a potential partner for this kind of initiative. The project can also explore collaborations with the diverse networks active in DRR and CCAM in the country.

The program may encourage participants, who come from all over the Philippines, to share what they've learned with their communities and local governments. This can help improve emergency response and strengthen the capacity of individuals and the local government on risk planning, monitoring and evaluation, and effective and efficient implementation before the hazard strikes, and during the unfolding hazard events in order to avert disaster.

SOURCE

Karen Lapitan, co-founder

ABOUT THE ORGANIZATION

Disaster Busters is a group of development practitioners, pre-existing volunteers formed to help empower young leaders of resilience in the Philippines. The group works to help create efficient and effective solutions-based action plans that can help community members be prepared in the event of natural hazards.

Facebook: www.facebook.com/disasterbustersph/



E. ECOSYSTEM-BASED DISASTER RISK REDUCTION

In consideration of externalities that can lead to the failure of DRR-CCAM, a method that is currently being advocated by environmental managers involves the management of ecosystems and ecosystem services to reduce disaster risk (such as flooding, storm, or wave damage) for human communities. There are efforts to mainstream this method and adopt nature-based solutions in urban planning in recognition that natural hazards can be managed efficiently by looking at natural systems. For instance, in many cities and communities around the world, shoreline protection to mitigate impacts of storm surges and coastal erosion entails construction of seawalls—so-called gray engineering—which is expensive and negatively impacts wildlife and biodiversity. This approach also encourages building and coastal developments along coastlines over conserving and managing existing green infrastructure⁴⁹ such as green belts like mangroves, beach forests, and coastal vegetation, which are more effective in dealing with sea level rise and storm surges.

In the recent IPCC Sixth Assessment report,⁵⁰ scientists highlighted the concept of maladaptation which usually happens when measures taken to adapt to the impacts of climate change cause more problems and lead to damaging effects, rather than addressing the problem. In this context, the next idea for action is presented.

14 September 2017

Aerial view of Freedom Island, an artificial island located in Manila Bay.

The island is an ecotourism area which contains a mangrove forest and swamps providing a habitat for many migratory bird species from different countries such as China, Japan and Siberia.

© Enrico Empainado / Greenpeace

⁴⁹ Bugler, Will. Green Infrastructure provides a viable alternative to seawalls for storm surge risk. Livable Cities: Asian Development Bank. Aug 2020. <https://www.livablecities.info/green-infrastructure>. Accessed 22 Dec 22

⁵⁰ IPCC. Sixth Assessment Report. Climate Change 2022: Impacts, Adaptation and Vulnerability. <https://www.ipcc.ch/report/ar6/wg2/>. Accessed 22 Dec 22

10: Collective planning: nature-based solutions in mitigating flood disaster risks

“In order to address sustainability, we are pushing for an amendment of the guidelines in the CLUP [Comprehensive Land Use Plan] and GIS Mapping to increase the required open-spaces and green-spaces allotment of the city. This is in line with the World Health Organization’s requirement of nine square meters per person.” - Lemuel Manalo

SITUATIONER

Davao City is a coastal commercial center in Southern Philippines and is the largest city in the Philippines.⁵¹ The city’s major climate hazard is flooding, which has become a recurring situation since 2011. The city has many flood zones, largely due to its complicated river systems and major drainage basins where the majority of people have settled. A major flood occurred on April 26, 2021, affecting 3,280 people wherein 162 families or 419 people were resettled in evacuation centers.⁵² On October 25, 2021, major parts of the city were flooded again due to moderate to heavy rains forces 850 families to evacuate.⁵³

Experts attribute flooding to urbanization and inadequate urban planning.⁵⁴ The Interfacing Development Interventions for Sustainability (IDIS), an established environmental organization based in Davao City, has already been promoting and mainstreaming the conceptual model of Nature-based Solutions (NbS) through their core mandate of advocacy. NbS are intended to support the achievement of sustainable development goals (SDGs), and safeguard human well-being. NbS as an umbrella concept covers a whole range of ecosystem-related approaches addressing societal challenges.

APPROACH AND PROCESS

IDIS advocates the NbS concept through participation in the City Development Council’s planning processes, specifically in the development of the Comprehensive Land Use Plan (CLUP). IDIS, which focuses on urban

management, is an accredited member of various Local Special Bodies, i.e., committees on zoning, environment, and others. They are present in planning and decision-making activities where they explain and propose

⁵¹ Philippine Statistics Authority, 2015 Census of Population, Report No. 3 – Population, Land Area, and Population Density. ISSN 0117-1453 https://www.psa.gov.ph/sites/default/files/_POPCEN%20Report%20No.%203.pdf. Accessed 22 Dec 22

⁵² Department of Social Welfare and Development (DSWD) Report No. 1. on the Flooding Incident in Davao City. 28 April 2021. <https://reliefweb.int/report/philippines/dswd-dromic-report-1-flooding-incident-davao-city-27-april-2021-6pm>. Accessed 22 Dec 22

⁵³ Palicte, Che. Flooding forces 850 families to evacuate in Davao. Philippine News Agency. 26 Oct 2021. <https://www.pna.gov.ph/articles/1157864>. Accessed 22 Dec 22

⁵⁴ Palo, Ruth. Davao City Urged to address flooding. The Manila Times. 27 Oct 2021. <https://www.manilatimes.net/2021/10/27/news/regions/davao-city-urged-to-address-flooding/1819825> Accessed 22 Dec 22

the value of issue-specific ecosystem-related approaches and management in DRR, CCAM, green infrastructure, integrated coastal zone management, and area-based conservation. They oppose environmentally harmful projects such as waste-to-energy (WTE) incineration facilities that devalue the NbS perspective.

The group has put forward NbS into the city's legislative agenda. IDIS undertook policy analysis in the city's zoning, wetlands, and waterways ordinances and drafted policy proposals which they presented to the Sangguniang Panlungsod. Research and studies bolstered more NbS initiatives through collaboration with the City's Geographic Information System (GIS) Unit in mapping out the topography of wetlands. Information shared with GIS gatekeepers also helped gather accurate data for the extent of ecological restoration needed.

IDIS directly lobbies local policymakers through the help of champions. One of its achievements is the passing of the Local Zoning Ordinance that: 1) prohibits residential developments in identified Floodway Mitigation Zones; 2) expands urban greenery; 3) protects blue spaces such as wetlands and creeks; 4) mandates rainwater harvesting; and 5) calls for the application of permeable pavements. Some immediate results include: 1) the decrease in water bills and consumption among households; and 2) increased awareness on water conservation.

Participation of advocacy groups in local policy and decision making is an innovative element in

resilience building. IDIS is an important voice in local government planning and decision-making. It effectively performs the role of providing technical support and guidance to the local government. The set-up described above, where a local group has very close collaboration with the local government, is not yet the norm in other local governments. Importantly, IDIS was not working as a lone organization. Instead, they work with the primary stakeholders, the LGU and the people. Aside from consultations IDIS engages Davao City constituents through the Lunhaw Awards which recognizes best sustainability practices of ordinary citizens. Engaging citizens through action helps spur the social transformation from "information" to "actual practice" of DRR and CCAM.

Moreover, IDIS' innovative product is a body of research maintained in an open-access interactive website.⁵⁵ The site was designed to help policymakers and practitioners access the wealth of scientific evidence about the key role that NbS plays in contributing to climate mitigation and adaptation. Properly implemented NbS can empower communities and build equity, which can contribute to climate change resilience in the long-term. Notwithstanding its opportunities, there is also a pronounced need for the assessment of cost-effectiveness compared to alternative interventions, looking at different types of outcome (CCAM, social and ecological outcomes) to help identify synergies and trade-offs.

CHALLENGES AND OPPORTUNITIES

The most notable challenges include the following:

1. Poor implementation and monitoring of rainwater harvesting and the permeable pavement ordinance;
2. Lack of a programmatic combination of "grey" and "green" infrastructure or Low-Impact Development (LID) for construction projects in both government and private sectors;
3. Non-prioritization of the Drainage Master Plan integrating a network of Sustainable Urban Drainage Systems (SUDS), providing flood detention / retention areas, trenches, bioretention swales, built wetlands, rehabilitation of creeks and waterways;
4. Lack of LGU accountability; and
5. Lack of a champion on consequential issues and concerns.

⁵⁵ Interfacing Development Interventions for Sustainability. <https://idisphil.org/>

Likewise, potential opportunities are seen through an enabling environment on continuing advocacy. Such advocacy instruments includes the following:

- 1. Constituency organizing and mobilization.** This includes rallying citizens who have a stake on the issue, working together to formulate and express views, and supporting organizations and projects that help constituents advance those views in the public arena. An example is the creation and sponsorship of the Lunhaw Awards which recognizes citizens on their NbS practices. While its entry point is the LGU, IDIS also works in partnership with the community. IDIS formed a group called Sustainable Davao Movement (SDM). Member-cyclists were very helpful in geo-tagging activities. Building connections inside the community and with various stakeholders is key to increasing participation in the LGU's planning, budgeting, monitoring, and evaluation systems in the context of DRR and CCAM.
- 2. Expanding the disaster risk assessment with GIS.** Utilizing maps to determine the degree of risk of each element at risk provides quantitative and qualitative hazard-specific baseline information. The LGU's planning process can integrate these GIS outputs, i.e. 1) maps; 1) database; and 3) spatial analysis. IDIS' collaboration with the city's GIS Unit can gain ground in strengthening the appropriate identification of multiple-hazard DRR measures for development and contingency planning.
- 3. Comprehensive and timely baseline information gathering.** Demographics like age, gender, marital status, address, education, language, religion, and other DRR-related details are gathered from each individual in the affected community. This information makes up the description of the specific element at risk—people. The information becomes a database disaggregated as to their different risks. As the database becomes complete and updated, this information needs to be analyzed and utilized to identify who is the most at-risk in the community so that their needs are met before and during the unfolding hazard event.
- 4. Interventions within systems and structures in order to efficiently and effectively save lives.** The risk assessment results need to be utilized to address the needs identified in order to strengthen preparedness before the hazard occurs. Hazard-specific disaster risk monitoring and evaluation are part of the system and structures that ensure risk reduction. Command and control systems, which is the central part of the contingency plan, ensures the comparison of real-time data versus baseline data in order to respond correctly through resource deployment to emergency needs of the affected population, and avert disaster.

SOURCE

Lemuel Manalo, Environmental Research Specialist

ABOUT THE ORGANIZATION

IDIS is a non-profit, environmental advocacy organization based in Davao City. The group envisions all people as stakeholders who have the right and duty to care for healthy watersheds. IDIS connects with various sectors to collectively address environmental challenges threatening watersheds from ridge to reef.

Website: www.idisphil.org

Facebook: www.facebook.com/idis.davao



F. ACCOUNTABILITY

In the context of DRR, accountability intends to enable scrutiny and understanding of actions and/or interventions taken at different levels, and decisions made by those responsible for such actions. According to Article 19(e) of the Sendai Framework,⁵⁶ DRR depends on coordination mechanisms within and across sectors, full engagement, and clear responsibilities of all State institutions and stakeholders, to ensure mutual accountability.

The next story provides model accountability practices by a local government, which ensures the safety and welfare of their rescuers.

1 November 2020

A fireman inspects along a river in preparation for Super Typhoon Rolly, international name Goni, in San Juan City, Metro Manila, Philippines on Sunday.

© Basilio Sepe / Greenpeace

⁵⁶ United Nations Office of Disaster Risk Reduction. Sendai Framework for Disaster Risk Reduction -2015-2030. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>. Accessed 22 Dec 22.

11: San Juan City DRRMO tools for visibility and accountability

“May mga trained drone operators na rin kami. Halimbawa sa sunog, sa tulong ng equipment at technology na ito, nakikita na agad namin ano ang sitwasyon at paano rerespondehan ang emergency or paano namin ima-manage ang sitwasyon.”⁵⁷ - Tong Pacasum

SITUATIONER

The Philippines is visited by an average of 20 typhoons every year.⁵⁸ The City of San Juan in the National Capital Region is often faced with flooding because of its geography. Section 12 of RA 10121 of the “Philippine Disaster Risk Reduction and Management Act of 2010,” states that a Local Disaster Risk Reduction and Management Office (DRRMO) shall be established in every province, city, and municipality. A Barangay Disaster Risk Reduction and Management Committee (BDRRMC) shall be responsible for setting the direction, development, implementation, and coordination of disaster risk management programs within their territorial jurisdiction.⁵⁹

The San Juan City DRRMO is able to perform its function to organize, train, and directly supervise the local emergency response teams. According to Tong Pacasum, head of the City DRRMO (CDRRMO), all responders are required to document their activities. After every activity, staff responders submit written reports. Documentation of actual happenings is used as baseline information that helps the team provide efficient and effective services for the city’s constituents. The CDRRMO aims to continue improving. Hence, using technology to document their action processes in the field helped them better analyze details in order to do their job better.

⁵⁷ We have trained drone operators. In the instance, for example, when there is a fire, the equipment and technology helps us immediately assess what is happening and how we can respond to the emergency, and how we can manage the situation.

⁵⁸ PAGASA. Tropical Cyclone Information. [https://www.pagasa.dost.gov.ph/climate/tropical-cyclone-information#:~:text=More%20tropical%20cyclone%20\(TCs\)%20are,70%25%20of%20a%20typhoon%20develop](https://www.pagasa.dost.gov.ph/climate/tropical-cyclone-information#:~:text=More%20tropical%20cyclone%20(TCs)%20are,70%25%20of%20a%20typhoon%20develop). Accessed 22 Dec 22

⁵⁹ Official Gazette. Republic Act No. 10121. Strengthening the Philippine Disaster Risk Reduction and Management System Providing for the National Disaster Risk Reduction and Management Framework and Institutionalizing the National Disaster Risk Reduction and and Management Plan, Appropriating Funds Therefor and for other Purposes. 27 May 2010. <https://www.officialgazette.gov.ph/2010/05/27/republic-act-no-10121/>. Accessed 22 Dec 22

APPROACH AND PROCESS

Under the leadership of San Juan City Mayor Francisco Javier M. Zamora, properly allocated resources are utilized to complete the equipment needed by their DRRM Office. Likewise, capacity building was provided for their members—police, firefighters, jail personnel, emergency responders, barangay “tanods” (security officers), and volunteers.

The CDRRMO teams of responders are issued with portable cameras used to record their real-time disaster response as well as day-to-day community assistance. These cameras capture the many different scenarios happening in emergency response situations in San Juan City. The videos are collected by the information technology (IT) Team which produces the content and posts it in the city’s various social media platforms. Viewing these videos of the CDRRM teams in action makes San Juan residents aware of the various real-time locations of the emergency situations and how the team saves lives. Communicating DRR to the people of San Juan increased awareness and further stimulated participation from the people. The visibility and transparency of the CDRRM responders encouraged support from community members present in the action scene.

The action videos are sources of information used to identify the hazards occurring in the

city. Hazard occurrences are tallied as baseline information. Baseline information aids the city’s decision-makers and policy makers in accurately assessing DRR needs. This is used to plan policies and budgetary allocations for equipment, supplies, as well as capacity building activities for the team. The Mayor, Vice Mayor, and Councilors are supportive of the CDRRMO’s requests.

Tong Pacasum and the team review the footage, identify the gaps, and recalibrate their processes in order to improve their emergency response, particularly in terms of timeliness and quality of performance. This motivates each responder to carry out his or her task thoroughly and strengthen their teamwork. Pacasum affirmed that “It’s a way of driving the DRRM team to serve better.” Likewise, the citizens complement the actions and fulfill roles expected of them in a hazard situation.

In summary, the video documentation is rich with information which can be used for the following: 1) determination of the appropriate responses for the protection and preservation of life; 2) identification of the appropriate capacity building programs for responders; 3) determining key result areas and indicators for contingency and development planning; and 4) awareness raising for the public.

CHALLENGES, OPPORTUNITIES, AND POSSIBILITIES

DRRM operations is a day to day challenge of continuous hazard assessment, DRR monitoring, mobilization of facilities and human resources, information dissemination, and timely emergency response. The model of video documentation for emergency response of the CDRRMO is already being adapted by one barangay. The city aims for replication in all of its 21 barangays.

The San Juan CDRRMO’s use of cameras helped them monitor their individual and team performance. Administratively, it provides a check and balance system for monitoring the status of their resources such as vehicles, supplies, equipment, etc., and personnel accountability. More importantly, the information collected and disseminated are references to planning towards effective and efficient emergency responses.

Pacasum said that the challenge in the adoption of this initiative is not in the lack of budget, but rather the need to change the mindsets of barangay leaders to use these tools for visibility and transparency. A city executive order is a step for institutionalization that would sustain this initiative. He also mentioned that the participation and alignment of the different local line agencies in this initiative is a very important structural support.

The use of video for real-time documentation during an emergency response provides a level of openness and accountability for the activities taken. It inspires and motivates individuals of the community to volunteer and join the Emergency Response Team. Prior to the actual emergency response, video could be utilized not only for baseline information for DRR planning, but also to boost the city’s emergency response system,

since the information will provide a foundation for cross-checking what is likely to happen on the ground.

With the goal of saving more lives and decreasing property damage, a centralized usage of video may be used to monitor what is happening and take appropriate action before a hazard happens or during the unfolding hazard event.

The project can be institutionalized and replicated in all communities through local governance policies with budget allocation because it has resulted in increased trust and confidence among emergency responders and the general public. The usage of cameras will aid in effective and efficient response and appropriate disaster risk reduction plans and initiatives and contribute to strengthening the systems and structures in local governance.

SOURCE

Tong Pacasum, Head of the San Juan City DRRMO

ABOUT THE ORGANIZATION

The San Juan City DRRMO is the local government unit's central emergency response service provider. They are accessible via their social media channels to respond to almost every emergency situation faced by their citizenry.

Facebook: www.facebook.com/SANJUANCRRMO/

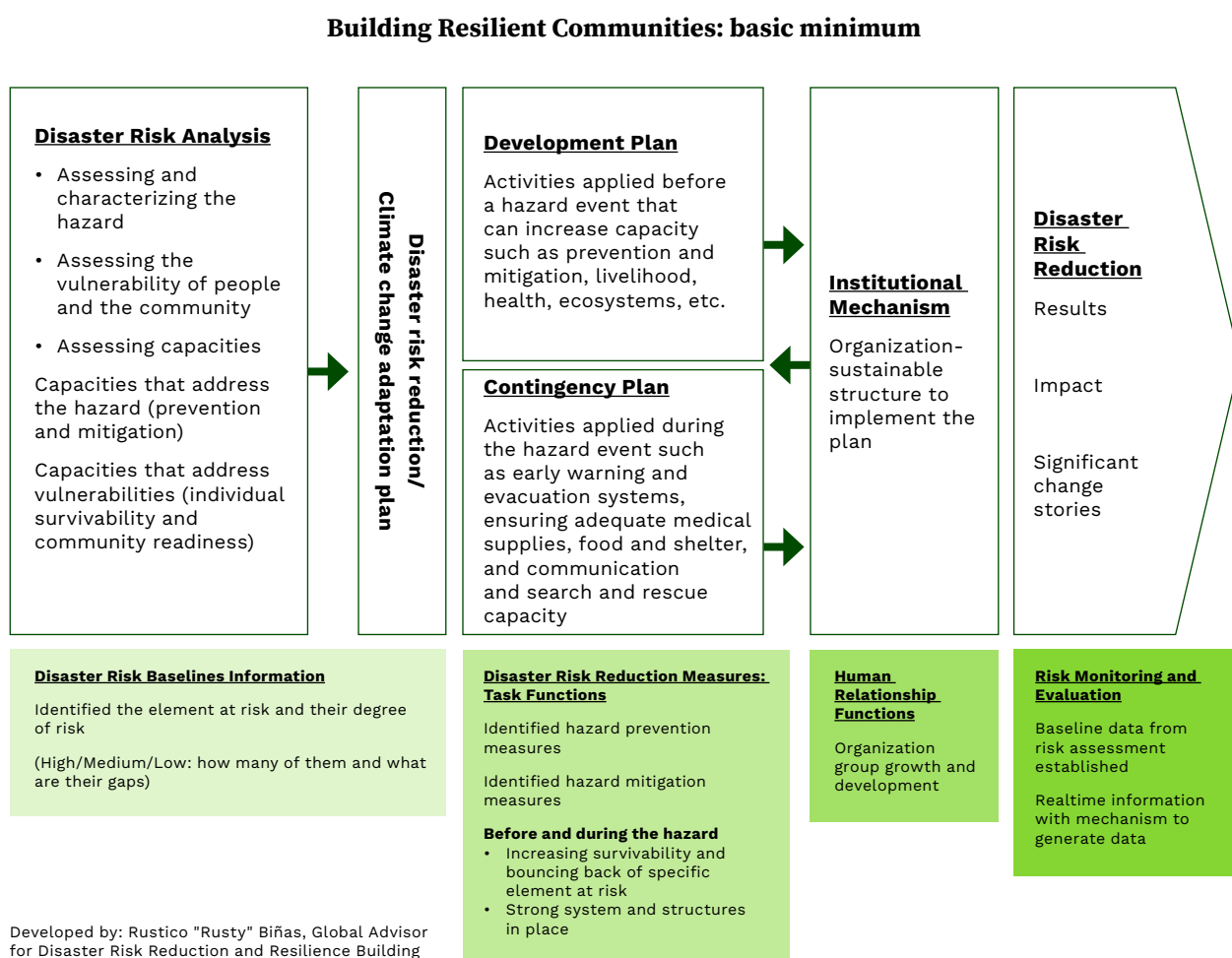
Twitter: @SANJUANCRRMO

Synthesis

Stories vis-à-vis the design flow of building resilient communities

The stories demonstrate scenarios that illustrate this toolkit's design flow for building resilient communities (shown in Figure 2). The design flow can be ideal and systematic if it is completely understood and followed in a logical sequence to develop a risk-informed plan in an area, community, barangay, municipality, or province.

Figure 2. DRR action plan: building resilient communities



1. As shown in the above figure, a relevant **disaster risk assessment** is vital in developing DRR and CCAM action plans. This crucial step was exemplified in the story about Barangay Potrero, wherein local officials and community members, with the help of partner non-government organizations, were capacitated to assess the hazards that they historically and seasonally experienced. The shared and gathered information on the characteristics of the hazard, demographics, social protection measures, public goods provided, behavioral consequences, political interests, etc., sum up the realities of moving forward with a contingency plan. A more systematic community participatory risk assessment methodology^{60 61} can be a better tool for disaster risk assessment.
2. The **Development Plan** represents ideas for action *before* the hazard. In the stories above, a development plan was not specifically mentioned. However, some of the stories show us how communities can prepare and enhance their capacities before a hazard strikes, therefore lowering the risk of being in a disaster. These include:
 - Establishing a local food system using a Community Supported Agriculture Model such as the one by Good Food Community, provides a steady food supply to the community before and during a hazard.
 - The initiative of Move As One Coalition pushing for billions to fund inclusive and efficient public transport and the establishment of bike lane networks in Metro Manila, Cebu, and Davao, have helped many bike commuters survive, especially during the COVID-19 pandemic (a hazard) when public commuting became unavailable and posed contagion risks.
 - IDIS' advocacy for nature-based solutions was established through their participation in Davao City's development council planning process where they provided technical information relevant to the city's green infrastructure, integrated coastal zone management, and area-based conservation, among others.
- Finally, the Kawayan Collective's experience responds to the shelter needs of families. They developed housing strategies (i.e. shelter recovery options) in the aftermath of the hazard impact and eventually used bamboo to build stronger houses before another hazard strikes.
3. A **Contingency Plan** represents ideas for action *during* the unfolding hazard event in order to prevent a disaster from happening.
 - The Barangay Potrero contingency plan features its incident command system for emergency response with its early warning signs and signals before a hazard strikes.
 - A temporary shelter designed by Kawayan Collective during the onset of a hazard and upgrading houses after a hazard strikes.
 - The alternative temporary shelter designs of the United Architects of the Philippines presented shelter designs that fit the needs of women, men, and children during Super Typhoon Yolanda's aftermath, and possibly in future similar situations. Similarly, the municipality of Guiuan's recovery after Yolanda was able to help communities bounce back through homeowner-driven on-site house reconstruction. Likewise, collective decision-making led to an appropriate budget estimate available for implementation.
 - The story of Curiosity and WeDpro also shows how a community-managed evacuation center was established, highlighting the relevance of community consultation and participation, particularly in design and construction.
4. **Institutional Mechanisms** refer to policies, organization, and structure needed to implement plans. The role of the local government unit as an institutional mechanism is very important in the implementation of the development and contingency plans. The experience of the Barangay Potrero clearly shows that the leadership of local government leaders, as

⁶⁰ Biñas, Rustico, (2017). Guide for Participatory Community Disaster Risk Mapping (PCDRM). <https://www.slideshare.net/RusticoBinas/guide-for-participatory-community-disaster-risk-mapping>. Accessed 21 Dec 2022.

⁶¹ Caritas Philippines. Participatory Disaster Risk Mapping. <https://www.youtube.com/watch?v=DfqapZsljrc>. Accessed 21 Dec 2022.

well as the cooperation of the community members, is vital in the implementation of contingency plans. The recommendations on the roles of these different stakeholders are

further discussed below as contextualized into capacity-building opportunities for stakeholders to understand and operationalize before and during the hazard.

Broadening action and center of gravity

While the stories have featured how individuals and communities have bounced back from the aftermath of disasters by strengthening their capacities through the provision of basic needs and transformation of community systems and

structures, there are still missing pieces. These gaps are identified below, alongside possibilities and opportunities to ensure a holistic approach to disaster risk reduction.

Table 2. Opportunities for improvement: programming of DRR and CCAM

Ideas for Action		Three areas are essential for addressing disaster risk in order to develop a holistic programming of disaster risk reduction and climate change adaptation and mitigation.		
		Before the hazard strikes	During the hazard	Building back better
		How can the community prepare for the hazard and prevent disaster from happening?	How can we prevent disasters in communities exposed to hazards?	How can we co-power the community to bounce back from the hazards quickly?
Prevention		What measures to address the cause of the hazard are needed to prevent the hazard from occurring?		
Mitigation		What measures to address the force of the hazard (the one that will hit you e.g. if the hazard is flood, the force are water, debris, water borne diseases, mud, etc.) are needed to reduce the impact to the element at risk?		
Individual (element at risk)				
Survivabil- ity	Basic needs: food, clothing, water, shelter etc.	Establishing local food systems will ensure food supply before, during and after the hazard (Good Food Community)		
			Community pantries will ensure supply of food to the affected community during the hazard (Tanglaw Kabataan)	
		Reinforced houses using bamboo ensures the safety of communities before, during, and after the hazard (Kawayan Collective)		
			A menu of alternative temporary shelter designs that can be used during the hazard (United Architects of the Philippines)	
Bouncing back	Livelihood and health			Tapping of local suppliers for housing construction materials to provide livelihood and stimulate economic activities in the community (Curiosity Philippines and Wedpro)

Addressing the capacities of the element at risk

Addressing the capacities of the element at risk

Ideas for Action		Three areas are essential for addressing disaster risk in order to develop a holistic programming of disaster risk reduction and climate change adaptation and mitigation.		
		Before the hazard strikes	During the hazard	Building back better
		How can the community prepare for the hazard and prevent disaster from happening?	How can we prevent disasters in communities exposed to hazards?	How can we co-power the community to bounce back from the hazards quickly?
Systems and structures				
Addressing the capacities of the element at risk	Supports survival and bouncing back	Ecosystem services	Advocating for nature-based solutions in land-use planning (IDIS)	
	Systems and structures that help individual element at risk to survive and bounce back	Community systems and structures	Establishment of bike lanes as the most used transportation system during the Covid-19 pandemic (Move As One Coalition)	
			System of implementation and monitoring using portable cameras (San Juan City DRRMO)	
			Incident command system with early warning signs and signals before the strike of a hazard (Barangay Potrero)	
			Nature-based solutions in land-use plans to mitigate flooding (IDIS)	
				Community-designed and managed evacuation center (Curiosity Philippines and Wedpro)
			Use of social media tools to communicate disaster risk reduction and climate resilience (Disaster Busters)	
	Ensuring human security	Enabling policy environment	Policy lobbying work regarding active mobility and sustainable transport systems (Move As One Coalition)	

Ideas for Action		Three areas are essential for addressing disaster risk in order to develop a holistic programming of disaster risk reduction and climate change adaptation and mitigation.		
		Before the hazard strikes	During the hazard	Building back better
		How can the community prepare for the hazard and prevent disaster from happening?	How can we prevent disasters in communities exposed to hazards?	How can we co-power the community to bounce back from the hazards quickly?
Global order	The global platform of international treaties, agreements and protocols	Calling for accountability and reparations for loss and damage from the biggest historic greenhouse gas emitters (countries and fossil fuel corporations) can provide much needed resources for communities in vulnerable areas to be able to cope with and bounce back from hazards, and to help ensure that the worst impacts of climate hazards are prevented.		

Addressing the capacities of the element at risk

Although the community stories contribute significantly to efforts on DRR and CCA, a holistic approach calls for the understanding of the different roles of key players, adequate planning, and action to improve coordination

and convergence of services provided by all significant stakeholders in hazard-prone areas.

Box 2. Key considerations for DRR and CCAM

Climate change projections provide different risks to communities, with varying frequency and severity of climate-related hazards in different areas. The frequency and intensity of the hazard would deplete community resources and jeopardize livelihoods and well-being of people, slowing the recovery of at-risk communities.

Individual survivability from hazards will place the individual at increased risk of disaster if not effectively addressed. Those with the least capacity to survive and bounce back from the hazard events are most likely to suffer the most, and they are generally the poorest of the poor in our communities.

Communities and development agencies must understand that long term development entails the ability to adapt and recover from any hazard. Their ability to meet basic human needs and to maintain a high standard of living for current and future generations is contingent on their capacity to navigate changing climate and geopolitical hazards. Designing and managing risk reduction and adaptation strategies to build community resilience to disaster risk is a constant challenge.

Climate change and disasters are caused by human actions. As a result, people are at the heart of the processes addressing climate change and disaster risk. Avoiding disaster, however, requires a paradigm shift to change the way we do things. Our activities must have an impact on human behavior, legislation, and programs in order to help communities become resilient.

Source: Caritas Czech Republic. 2010. *Manual on How to Navigate in a Changing Climate: Building upon Communities Resilience*. By Rustico "Rusty" Binas

Ways forward

Understanding each essential player's role based on community organizing principles provides operational guidelines on working with communities. Engagement with structures such as the government as a community support system guides the catalyst on the steps with output, outcome, and impact towards working effectively and efficiently. Risk assessment results serve as the foundation for planning, monitoring, and evaluation, as well as learning in the context of DRR/CCAM.

1. Understanding the role of key players

THE COMMUNITY IS AT THE HEART OF EFFECTING SOLUTIONS AND CHANGE

The community is the center of gravity on the impact of hazards and must also be the focus in effecting solutions and change. Community members should have control or self-determination over what is happening to them, including mitigation, prevention, community readiness, and individual survivability. It is necessary to understand process-oriented programming that yields the appropriate

intervention and resource assistance. Likewise, planning for DRR/CCAM needs to be specific to the hazard, the element at risk, time, and location. Building resilient communities requires a social process within the community that strengthens the individual members' participation and collaboration contributory to improved systems and structures.

DEVELOPMENT PRACTITIONERS: FACILITATOR, CATALYST, AND SUPPORT SYSTEM

Development practitioners must play a facilitating role in strengthening the community's capacity to address the hazard. The end goal is for all community members to champion their development process and be prepared to navigate through any hazard situation. The basis of identifying climate adaptation is knowing the specific hydro-meteorological hazard. This is the starting point for DRR. Climate variability scenarios or projections facilitate a climate change adaptation planning strategy. The same climate variability scenarios or forecasts are determined in the hazard characterization of the DRR risk assessment process. This drives us to recognize CCA and DRR as interconnected.

Programs for top-down disaster risk reduction frequently fall short in addressing the disaster risk, requirements, and needs of at-risk communities. Communities understand local

realities and contexts better than outsiders. It is only possible to identify these disaster risks and needs through a process of direct engagement and interaction with the communities. Even the most vulnerable communities have capacities, skills, knowledge, and resources (labor, materials). These resources are frequently neglected or underdeveloped, and in some situations, they are undermined by outside parties.

The facilitator's function is to connect the community and the development organization or local government through transitioning/phasing over roles and responsibilities, with the goal to enable community members to own their disaster risks and disaster risk reduction solutions. In the end, the community will have gained confidence in acquiring the needed resources to the support system and will be able to carry out the task and organizational functions necessary for

community resilience. Build the government's capacity to effectively and efficiently provide services as a support system for the community,

and people will eventually trust and gain confidence in the local government.

2. The need for adequate planning and action

Planning for climate risk or DRR is the foundation of sustainable development. Participative development planning, which includes safeguards against the new disaster risk or the enhancement of existing ones, is a challenge to all development practitioners. The risk-informed development planning, with communities as the drivers and community as the unit of analysis, is the cornerstone of DRR.

According to the UNDRR Strategic Framework 2022-2025,⁶² DRR is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disaster. It is a conscious effort to reduce risk to disaster by empowering individuals and communities with capacities to survive and bounce back through hazard prevention, mitigation, and vulnerability reduction and putting in place the capacity of systems and structures to ensure individual elements at risk will survive and bounce back.

The goals and aspirations of being resilient to hazards need to be ensured to prevent development from sliding back.

Risk-informed planning reflects a clear climate / disaster risk reduction target based on risk assessments. It deliberately puts in place systems and structures to ensure that all elements at risk survive and bounce back, resulting in reduced or eliminated mortality, loss, and damage.

The fundamental assumption is that basic rights, services, and resources constitute the bedrock of safety, security, and resilience. It is the cornerstone of Natural Justice and the Rule of Law. Motivated and empowered individuals have a more active and direct role in decision-making. CCA, ecosystem management, restoration, and DRR initiatives must include civil society organizations and the private sector as development partners. People must be at the center of decision-making and resilience-building efforts.

3. Localization: coordination and convergence of service

Local government units (LGUs) are the frontline institutions for planning, implementation, and response to both CCA and DRRM laws. LGUs use the National Climate Change Adaptation Plan (NCCAP) and the National Disaster Risk Reduction Management Plan (NDRRMP) as foundations for constructing their Local CCA Plans (LCCAP) and DRRM strategies (LDRRMP). In addition, the Local Government Code requires all cities and municipalities to produce two main plans, the Comprehensive Development Plan (CDP) (a socioeconomic plan) and the Comprehensive Land Use Plan (CLUP). With the

Mandanas-Garcia Ruling, essential services have been entirely transferred and delegated to local governments⁶³.

The role of the LGU in taking the lead in building a resilient community is vital. The LGU, although with limitations in capacity, has the mandate, human and other resources to build community systems and structures for resiliency.

Collaborative efforts between the LGU and the community for disaster risk assessment is key to gaining collective ownership in the development

⁶² United Nations Office for Disaster Risk Reduction. UNDRR Strategic Framework 2022-2025. <https://www.undrr.org/publication/undrr-strategic-framework-2022-2025>. Accessed 22 Dec 22.

⁶³ Mandanas Ruling. About Mandanas-Garcia Ruling. <https://mandanasruling.ph/about/>. Accessed 22 Dec 22

of DRR, CCAM, land use, etc. plans. Community consultations channel every sector's agenda in the development plans. Governance shared in any

action arena in community development nurtures accountability in local DRR and CCAM efforts.

Box 3. DRR/DRM and CCAM in the Philippine context

In the Philippines, disaster risk reduction, disaster risk management, and climate change adaptation and mitigation are important concerns of the government. International agreements shaped the Philippines' policy frameworks and institutional structures concerning DRR / DRM and CCAM. On June 12, 1992, the Philippines ratified the United Nations Framework Convention on Climate Change (UNFCCC). With the passage of Republic Act 9729 in 2009, the Climate Change Commission (CCC) was put in place. The Philippines is now the world's second country (after the United Kingdom) to pass a climate change law.

The Philippines is a signatory to the Disaster Risk Reduction Sendai Framework for Action and its predecessor, the Hyogo Framework for Action. To address disaster risk, the Philippine Congress passed Republic Act 10121, the Philippine Disaster Risk Reduction and Management Act of 2010. The National Disaster Risk Reduction and Management Council (NDRRMC) was established under this law to supervise the law's implementation.

4. Sustaining movements toward community resilience

Disaster risk reduction and climate change adaptation and mitigation is a continuous cycle of assessment, planning, implementation, and monitoring. Each cycle should lead to better systems, better mechanisms, and improved

coordination and collaboration until it becomes robust and proactive. It is, therefore, crucial to sustain this wave of community initiatives and continue to nurture ideas for action.

5. Climate and Pandemic Response (CPR) Portal for Better Cities

The climate emergency has affected the life of every Filipino, and its impacts are amplified even more by the on-going pandemic. That is why it is crucial that we take a consolidated approach to both the COVID-19 and the climate crises. With this in mind, Greenpeace Philippines developed the Climate and Pandemic Response Portal (CPR).⁶⁴ The CPR is a platform where urban residents, communities and organizations can

help local leaders to plan sustainable response and recovery plans for these twin crises through sharing stories of hope, innovations, and actions. As shown in this toolkit, the solutions needed for healthy, liveable, and climate-responsive cities already exist. With these local grassroots initiatives, and with everyone doing their part, we can transform our cities and communities together. The portal features maps that

⁶⁴ Greenpeace Philippines. Climate and Pandemic Response Portal. <https://www.greenpeace.org/philippines/climate-and-pandemic-response-portal/>

present COVID and climate data together with community story maps where local governments and organizations can take inspiration from,

as well as provide the necessary pathways for collaboration.

6. Community organizations that can be tapped for collaboration by LGUs

LGUs can continue working together with community groups in addressing disaster risk and building community resilience. Here is a list of organizations that may be helpful.

Sector	Organization	Contact Person	Website
Architecture and urban planning	United Architects of the Philippines	Arch. Geomilie Tumamao-Guitap, Capacity Building Cluster Head, United Architects of the Philippines-Emergency Architects and Researcher, University of the Philippines-School of Urban and Regional Planning.	Website: www.united-architects.org Facebook: www.facebook.com/uaphq/ Twitter: #unitedarchitectsofthephilippines #uap Instagram: www.instagram.com/unitedarchitectcsph/
Emergency relief and development	Cordaid	Arch. Amillah Rodil, Architect and Environment Planner, and Project Manager for Cordaid Philippines Typhoon Haiyan Resilient Recovery Program from January to December 2015	Website: www.cordaid.org Facebook: www.facebook.com/cordaidEN Twitter: @MoveAsOnePh
Ecologically sustainable farming practices	Good Food Community	Charlene Tan, CEO and Founder Mabi David, Partnerships and Advocacy Lead	Website: www.goodfoodcommunity.com Facebook: www.facebook.com/goodfood-community Instagram: www.instagram.com/goodfood-community/
Wellness and psychosocial practitioners	Curiosity WeDpro	Pamela G. Cajilig, Co-founder of Curiosity, Anthropologist, PhD Candidate (Humanitarian Architecture Research Bureau at the School of Architecture and Urban Design of RMIT University in Melbourne),	Website: www.curiosity.ph Website: www.wedprophils.org
DRRM / Youth communications	Disaster Busters	Karen Lapitan, Co-founder of Disaster Busters	Facebook: www.facebook.com/disasterbustersph/

Sector	Organization	Contact Person	Website
DRRM practitioners	San Juan CDRMO	Tong Pacasum, Head of the San Juan City DRRMO	Facebook: www.facebook.com/SANJUANCDRMO/ Twitter: @SANJUANCDRMO
	Malabon BDRMO	Walter Guevara, Kagawad, Barangay Potrero, Malabon City, and Vice Chairperson, Barangay Disaster Risk Reduction and Management Office	Facebook: www.facebook.com/barangaypotreronmalabon/
Mobility / transport groups	Move as One Coalition	Reycel Hyacenth Nacario Bendaña, Sectoral Convener for Youth, Transport Workers, and Laborers	Facebook: www.facebook.com/MoveAsOneCoalition/ Twitter: @MoveAsOnePh
Sustainability	Interfacing Development Interventions for Sustainability (IDIS)	Lemuel Manalo, Environmental Research Specialist	Website: www.idisphil.org Facebook: www.facebook.com/idis.davao
Local MSME	Kawayan Collective	Aidalyn C. Arabe, Community Outreach and Bamboo Academy Lead	Website: www.kawayancollective.com Facebook: www.facebook.com/kawayancollective Instagram: www.instagram.com/kawayancollective/
Local youth organization	Tanglaw Kabataan	Michael John Colminas, Convenor, Tanglaw Kabataan	Facebook: www.facebook.com/TKPinagbuhatan/

7. Menu of options

This toolkit provides ideas for action that can be explored, tested, and adopted by local government units and community groups not just for DRRM implementation but also in plans, activities and programs. It can be part of the local development plans, local climate change actions plans, land use plans, and basis for the policy formulation according to the needs of the community. For example, food security and inflation can be addressed by sustainable agricultural practices in cities and peri-urban communities, and/or shortening the value chain where LGUs and communities can rethink the way food is supplied directly from farmers and

delivered through sustainable and effective mobility through bikes or mass transport systems. The ideas for actions here are replicable to other areas and can also be flexible to suit the appropriate context of the locality. These menu options are unlimited, as community / groups continue to innovate and adopt in this very dynamic environment and societal systems, more ideas for actions will continue to emerge until we can all see and say that we are a resilient community.

Conclusion

Addressing disaster risk through building resilient communities is not an easy task and there is no single prescription that can address all the issues and challenges. We are confronted not just by one issue, and most of the time one disaster can lead to other problems and might exacerbate existing system failures. The intersectionality of these issues and the compounding effects of hazards can only be managed by a holistic and proactive approach. The key factor for this approach is the existence of genuine collaboration that is beyond paper and policies, but established in order and practice.

This toolkit is an initial step towards that goal. In the process of convening people's organizations, academic institutions, professionals, and youth and development organizations in the co-creation of this toolkit, we were able to open points for collaboration and pathways for linkages.

As we continue to build strong partnerships, we can create more spaces for sharing experiences, visions, and dreams that can lead us to a deeper understanding of the complexities and externalities behind our activities and actions. Being more aware of the issues that initially disinterest us will influence mindset shifts and behavioral changes, where we will then be able

to see the center of gravity that we all should be prioritizing.

In the future world we all deserve, Filipinos are able to mitigate the risk of being flooded, despite the heavy downpour, we can safely stay in our houses and eat healthy meals despite strong winds and typhoons, and we can have a reliable source of electricity during and after hazards. This will be a reality once every sector of society is involved, not just consulted; when the most marginalized are co-powered, not just supported; and when every Filipino's right to participate in the community is recognized.

Ensuring an ambitious climate agenda for the Philippines

With the window of action to reverse the impact of the climate crisis rapidly closing, we need to be bold and innovative, and we need to act fast. Climate is the defining issue of this decade. Current national and local leaders in our country are serving during the most crucial period for climate action if we are to avoid the worst impacts of climate change.

Filipinos are already suffering from climate impacts and it will get worse. The climate crisis impacts very fundamental issues: food, water and energy security, poverty, injustice, health,

migration, security and our fundamental rights to life, health, among others. To secure all these and ensure Filipinos are able to live decent lives free from fear or want, means that climate needs to be the primary lens in government policy making and implementation.

At the national level:

- Coherent strategies beyond disaster response must be put in place, and these should also address long term vulnerabilities, not just disasters. Adaptation programs must

be consistent with the aim of protecting human rights as we build resilient communities better able to adapt to the impacts of a changing climate over the long haul, while forging solutions sensitive to local realities that would reduce if not prevent environmental risks to vulnerable communities;

- The government must institute climate action as the central policy of the state, and must protect people and climate on the basis of climate justice. Climate action must also be at the heart of the country's COVID recovery plan;
- Rights-based climate action and climate justice must be mainstreamed across all local and national government policies and programs (for example in city planning, infrastructure projects, permits for large-scale industrial activities, and fisheries and

agricultural policies, among others);

- Plans for economic recovery from the impacts of the pandemic must build in climate action (i.e. a green and just recovery plan);
- A rapid and just transition to a low-carbon pathway must be instituted through a massive uptake of renewable energy solutions;
- Businesses must be made to align their practices and business models to the goals of the Paris Agreement, and the government and Filipino people must demand climate justice from corporations and developed countries who are the major contributors to historical carbon emissions; and
- Full implementation and strengthening of the country's environmental policies must be prioritized.

Addressing the climate crisis entails urgent, long-term, and systemic solutions

The solution is not one-off actions, but bold, visionary, transformative policies that will secure the safety and well-being of Filipinos for decades to come. National and local governments

must rethink the current development model and strategies focused on infinite growth, and focus on people-centered and people responsive policies, programs, and projects.

Ensuring people participation

Climate resilient development is only possible when we ensure climate resilient communities. Ensuring community resilience starts at the local level, and entails creating and opening spaces for people participation in local policy making. National and local governments must champion democracy, support people's participation in governance, strengthen democratic institutions, and advance and protect human rights.

We need to upscale the use of technology (social media, digital platforms) in combination with local knowledge by investing in citizen science and online community organizing. When we can provide the right information through analysis of hazards we can better prevent the disaster from happening.

The institutional mechanism as a major component of the approach should not just be

manifested in the contingency and development plans and policies, but should be implemented, evaluated, monitored, and revised to ensure that it remains relevant and proactive. Co-creation, co-leading, and co-implementing DRR strategies should be continuously promoted by government institutions with strong confidence in local government units and trust in local community organizations and individuals. This trust and confidence are what we need to ensure good governance. When people ask questions about how the local budget is being utilized, how the public goods are distributed and planned, and when they ask for accountability from government and corporations, then we will be able to develop policy instruments that can lead to social transformation in our communities.

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