Philippines

Building climate-resilient local health systems

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Focus

The Philippines is recognized as one of the most climate-vulnerable countries in the world due to its frequent exposure to extreme weather events (Eckstein *et al.*, 2021). Each year, the country experiences an average of 20 typhoons which are often accompanied by deadly storm surges, extreme rainfall and flooding. Typhoon Haiyan, which hit the Philippines in 2013, remains the strongest typhoon to make landfall, affecting almost 13 million Filipinos, claiming 6,000 lives and leaving 1,800 missing (Reid, 2018).

The direct health impacts of typhoons can be acute (injuries, diarrhoea outbreaks and deaths) or chronic (climate anxiety and post-traumatic stress disorder) (Parks & Guinto, 2022). Indirect impacts may also arise out of the confluence of variable rainfall and warming temperatures that create favourable breeding grounds for mosquitos that vector diseases such as dengue and malaria. Added to this, local sea level is rising faster than the global average, and this is especially problematic for a country where the majority of inhabitants live within 60 kilometres of the coast (Kahana *et al.*, 2016).

The health impacts of climate change must be addressed by local health providers. The devolution of the national health system in the Philippines has given autonomy to local/municipal governments. But these municipal systems are overburdened and under-resourced and this reflects the overall state of the health system, nationwide.

Climate and health planning

In 2009, the Climate Change Act paved the way for increased climate efforts in the Philippines. The act led to the development of the mandatory Local Climate Change Action Plan (LCCAP) – the blueprint for addressing the local impacts of climate change. Each local government unit (LGU) is required to draft, adopt and implement the plan, which must be science-based and employ participatory and consultative mechanisms to guarantee ownership and cooperation (Local Government Academy, 2014). The LCCAP, therefore, has the potential to meaningfully shape local government climate action. However, such plans tend to focus on environmental conservation or disaster risk reduction, rather than health.

Project objective

Since 2022, the project's goal is to support two Philippine coastal municipalities to pilot a municipal-level intervention which aims to:

1. Enhance coherence between existing policy instruments and local governance mechanisms;
2. Build the capacity of local stakeholders and forge cross-sectoral collaboration between health and other sectors, such as agriculture and environment;
3. Introduce new tools and methods for co-diagnosing problems at the climate-health nexus (such as systems thinking workshops and rapid vulnerability and adaptation assessments (V&As)) and co-design adaptation measures and potential projects for health system resilience building.

With support from the research team, the two municipalities involved, Alabat and Ajuy, have been developing health-focused climate adaptation project proposals for potential submission to the People's Survival Fund (PSF) – a Philippine Government fund of USD one billion annually, made available to local governments to implement climate adaptation measures.

Alabat is in the northern (Luzon) island region and has 16,818 inhabitants (2021 census). Its main industries are farming, fishing and forestry, and agriculture occupies 65% of the land for perennial crops. Consequently, the risk of flooding and storm surges threatens half the population. The population of Ajuy, in the central island region, faces similar risks. The town has 53,462 inhabitants (2020 census), and farming and fishing are the main industries.

Team

The project was led by the Climate Change and Health Team of the Planetary and Global Health Program (PGHP) of the St. Luke's Medical Center College of Medicine in the Philippines. This team was composed of 'pracademics' (practitioner-academics) with multidisciplinary backgrounds in medicine, public health, health systems, biology and environmental science. The project was co-initiated with the University of California San Francisco Institute for Global Health Sciences (UCSF IGHS) which also provided seed funding. The project also received additional funding support from the Adaptation Research Alliance, which is funded by the Foreign, Commonwealth and Development Office (FCDO) of the United Kingdom.

Methods

Collaboration with both municipalities was championed by municipal health officers who functioned as liaisons between the team and relevant government offices. In

both municipalities, a Technical Working Group (TWG) was established, which was chaired by the mayor and which included representatives from various offices.

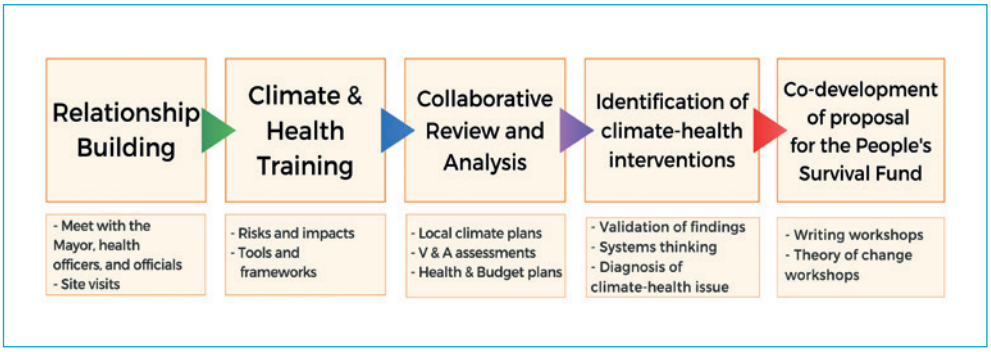

Figure 1: The iterative flow and needs-driven approach adopted by the project team

Project implementation followed a needs-driven approach (Figure 1), which is outlined below.

1. The team undertook relationship-building activities to engage officials such as the mayor and other collaborators.
2. Climate and health training was conducted with municipal health staff, the TWG and other offices, to introduce the project and facilitate an exchange of climate-health knowledge.
3. The project team then guided a collaborative review and analysis, whereby technical knowledge was integrated with the practical and contextual knowledge of the municipal staff to develop a health Vulnerability and Adaptation assessment (V&A) (Figures 2 and 3). A 'problem diagnosis matrix' was then co-created to assess current and future climate-health risks. The assessment was guided by two municipal plans: the LCCAP, described above, and the Local Investment Plan for Health (LIPH) which specifies local government strategies for achieving health sector goals. Time allocation for climate-health action was then extracted from the overall municipal and health budgets.
4. Climate-health interventions were identified from the plan and budget reviews. The climate-health V&A was validated with the TWG. This cross-sectoral exchange enabled an informed, systems-thinking approach.

Figure 2: Researchers and community leaders investigating sea level rise in Ajuy

Figure 3: A climate and health diagnostic workshop in Ajuy

5. During the writing workshops, each municipality developed a Theory of Change that informs the structure of the PSF proposal (Figure 4). The PSF was enacted in 2012, but as of the time of project implementation (2022-2023), only six municipalities have benefitted from the climate-adaptation fund and none of these has focused on or been inclined towards the climate-health nexus. The PSF proposals co-developed with the partner municipalities have the unique appeal of framing climate action to improve the people's health.

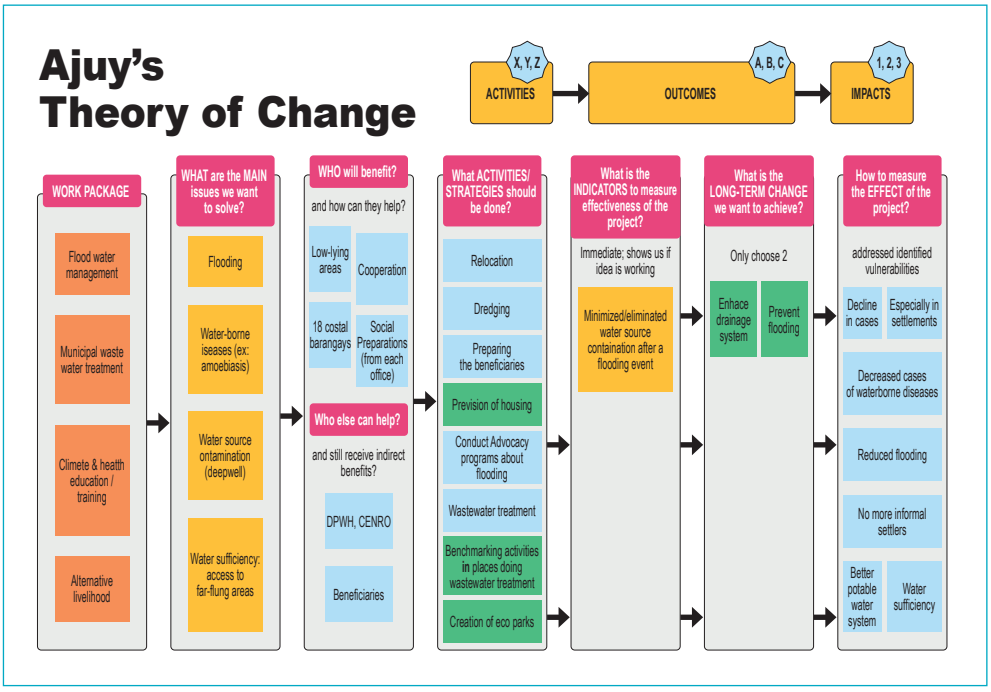

Figure 4: Flow chart illustrating the co-created theory of change model, derived from the systems thinking-driven collaborative reviews in Ajuy

Results and products

The team observed increased levels of awareness on climate and health among stakeholders.

Non-health staff also participated in project workshops, which evidenced widening cross-sectoral engagement and meant the final list of TWG members included

offices that were not initially proposed, such as the Municipal Social Welfare and Development Office and the Tourism Office.

A 'problem diagnosis matrix' was developed that summarized the current burden and future risks of climate hazards, contrasted with the current burden and future risks of climate-related health impacts. The matrix presented measurable/quantitative data, contextualized by qualitative data of lived experiences obtained through interviews and consultations with community members.

Section in LCCAP	Data needed to be collected
Health	Expand the background on the local health system setting: • Map of healthcare facilities; • Current health status of the population; • Coverage of services available (e.g., laboratory tests, first-aid, primary care, screening with x-ray and ultrasound); • Baseline health situation; • Health system building blocks; • Health financing; • Healthcare workers.
Climate and health	Current/previous experiences of health impacts from climate change (e.g., climate-sensitive diseases) Future climate-projections on health impacts and health system building blocks: • Human health impacts (e.g., increased incidence of diarrhoea due to saltwater intrusion of groundwater); • Health facilities; • Health services; • Health personnel. Health data from extreme weather events/ disaster events: • Number of casualties, due to disasters (e.g., flooding); • Number of disease outbreaks (e.g., from water-borne diseases) due to climate-related hazards.

Table 1: Excerpt from the recommendations for enhancing the health aspects of the Local Climate Change Action Plan (LCCAP) in the Municipality of Ajuy

Using the matrix, document review guides were developed as tools to review the LCCAP through a health lens and the LIPH through a climate lens. This approach highlighted the gaps and opportunities in both documents. Recommendations were then drafted by the project team for health-related interventions in the LCCAP (Table 1) and climate-resilient initiatives in the LIPH (Table 2). The recommendations then underwent feasibility consultations with the municipalities to highlight initial 'low

hanging fruit' initiatives in existing climate-health plans. These recommendations were generally well-received, but the challenge remains in their implementation.

Health system building block	Planned investments	Recommendations for climate-resilience
Health service delivery	Strengthen advocacy and promotion campaigns of all health programmes to target recipients	Include environmental education about climate change and its direct and indirect impacts on health
Health workforce	Assess health workers' learning and development needs	Include climate and health courses in health worker training
Health information system	Utilize existing PIDSR* system for all disease reporting units	Include reporting of climate-sensitive diseases
Supply chain and logistics	Establish adequate warehouse (storage) for the facility	Integrate green architecture in the design of the facility
Health financing	Passage of policies for the management and utilization of the Special Health Fund	Include an amendment related to the funding of climate-sensitive diseases in the policy formulation
Leadership and governance	Strengthen organization and functions of TWG for Universal Health Care	Include surveillance of climate-sensitive diseases as part of the functions of the TWG

Table 2: Excerpt from the recommendations for enhancing the climate-resilient aspects of the Local Investment Plan for Health (LIPH) of Ajuy. *Philippine Integrated Disease Surveillance and Response

End-users

The intended end-users of the project are local stakeholders, including health workers, senior staff of the Disaster Risk Reduction and Management Office, Environment Office, Planning and Development Office, and the mayor, among others.

Lessons and knowledge products generated from this pilot intervention will also be useful for other local governments in the Philippines that struggle to enhance their local climate and health plans and implement effective climate adaptation measures. Moreover, local governments can build on this project particularly in addressing climate-sensitive health problems while pursuing local health reforms to achieve universal healthcare.

At the national level, this study can support the Climate Change Commission and the Department of Health to provide guidance and direction to local governments when it comes to their climate and health programmes.

Researchers concerned with documenting and evaluating initiatives around building climate-resilient health systems will also find the case study useful to inform future initiatives and research agendas.

Lessons learned

Early positive lessons and opportunities

Meaningful cross-sectoral collaboration that centres on the climate-health nexus requires a combination of strong political will from the local chief executive (the mayor), empowered local government workers, and competent scientific advisers (the project team) (Figure 5).

Figure 5: Researchers consulting community leaders in Ajuy about the impacts of climate change on human health

Existing initiatives such as LCCAP and LIPH can be used as entry points to build climate resilience. Tools such as the World Health Organization's V&A assessment toolkit (WHO, 2021) could also be adapted to guide a more localized tool such as the 'problem diagnosis matrix'.

An integrated approach is required to build climate-resilient local health systems that combine investments, such as health workforce development and disaster-proofing infrastructure, with programmes focused on specific climate-sensitive health concerns, such as water-borne disease and heat-related illness.

Barriers and challenges

Collaborating with the local governments requires a flexible timeline and deep commitment. Local governments are often understaffed and under-resourced and must juggle multiple priorities which can slow down the progress of projects. Technical capacity, for instance on climate and health, is also often very limited. To ease the bureaucratic burden, it is vital for collaborators to offer sustained financial and technical support for the project duration.

Due to the lack of robust local surveillance and information systems, availability of quantitative data on climate, health and other relevant social and environmental indicators may also be very limited. Projects such as this can be used as a springboard for the establishment of basic data collection systems. Qualitative data in the form of lived experience stories and local stakeholder perspectives can also fill the knowledge gaps that result from a scarcity of quantitative data.

Sustaining the process of engagement will be a challenge, especially if additional project funds are not generated in the medium term. Hence, it is important to identify 'low-hanging fruit' or 'easy win' climate resilience measures, such as climate and health training for health workers and community members, that can be incorporated into existing health activities.

Conclusion

This project illustrates the need for a 'diagonal' approach to building climate-resilient local health systems, i.e., one which combines 'horizontal' investments such as health workforce development and disaster-proofing infrastructure with 'vertical' programming focused on specific climate-sensitive health concerns such as water-borne disease and heat-related illness. The study provides technical insights on conducting assessments and planning, and lessons and tactics on contextualizing local efforts. In the 21st century, in the era of a warming planet, conducting climate-health V&A assessments, developing climate and health plans and implementing climate resilience measures must become core competencies for all health professionals. Finally, this project's findings can offer a road map for other munic-

ipalities in the Philippines, and also other local jurisdictions around the world, that are pursuing local efforts to enhance the climate resilience of health systems.

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