

Adaptation Gap Report 2023 – Case Study

Navigating climate risks: The path of San Pedro Sula to a resilient future

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As the climate crisis unravels, socioeconomic and environmental shifts are exacerbating existing risks in cities, while also creating new ones. Changing rainfall patterns, floods and storms are catching governments and communities off guard, both of which often have limited access to information that can be used to manage these challenges.

In 2019, amid this global context, the municipality of San Pedro Sula in Honduras collaborated with the United Nations University – Institute for Environment and Human Security to address some of its most pressing questions. The project empowered the municipality by providing concrete information to take a proactive approach to confronting climate risks, significantly improving its ability to reduce these threats. This achievement is not isolated but offers a model for municipalities worldwide.

San Pedro Sula is the largest economic centre in the country. A growing population and intensifying storms have placed even greater pressure on its existing drainage systems and the city has suffered increasingly from floods. Most recently, in 2020, Eta and Iota, both Category 4 tropical storms, hit the municipality within less than two weeks of each other, leading to city-wide flooding. As former Mayor Armando Calidonio explained, “Climate change has significantly increased the risk of catastrophic floods. These floods have grown in intensity and become much stronger events that reach neighbourhoods and areas that were not exposed before. We are seeing more aggressive storms that, in general, even in the most developed areas, are causing the rainwater drainage systems to collapse.”

The key questions that the municipality faced were as follows: How can cities understand and project evolving climate risks? What resources are needed to build resilience? How can limited resources be used wisely to address the most urgent issues?

Using the Economics of Climate Adaptation framework and its modelling platform CLIMADA, a flood risk analysis was undertaken and over 20 adaptation measures were assessed. The framework included stakeholder engagement

that leveraged local knowledge and experiences to confirm the scope and validate the results of the study. Additionally, future scenarios were projected to estimate the expected impacts of future risks.

The results painted a stark reality, with the current expected annual climate-related damage in the municipality surpassing US\$7 million, a number that is projected to double to US\$14 million by 2042 under moderate climate-projection scenarios.

The project proposed a portfolio of measures which offered the best cost-to-benefit ratio in economic terms and protected the greatest number of people. From upgrading drainage systems to reforesting riverbeds and constructing resilient features, each measure was supported by an economic evaluation and pre-feasibility studies.

The top three measures identified by the project were vegetated swales, refurbished collectors and ecological restoration. By taking these actions, San Pedro Sula could avoid an estimated US\$50 million in direct economic damages and protect around 30,000 people over the next three decades. Less than US\$36 million of investment would be needed to do this, making investing in climate adaptation a win-win business case. Additionally, the study highlighted the importance of further investments in climate risk-related data, enhancing the weather-monitoring network and strengthening early warning systems.

The benefits of the project included bridging knowledge gaps and enabling local governments to tackle complex climate risks. Importantly, the study also underscores the necessity of continuity in risk governance through political cycles. Changes in administration can slow progress in risk reduction, making it imperative to prioritize and uphold this continuity. While the broader challenges still persist, the success in San Pedro Sula illustrates the progress that is possible despite resource constraints and tight schedules.

In a world where climate uncertainties challenge urban landscapes, the story of San Pedro Sula highlights the fact that shared challenges faced by cities worldwide can

be addressed through accessible knowledge, effective methodologies and steadfast commitment, and that investments in climate adaptation not only save lives, but also have a clear economic incentive.

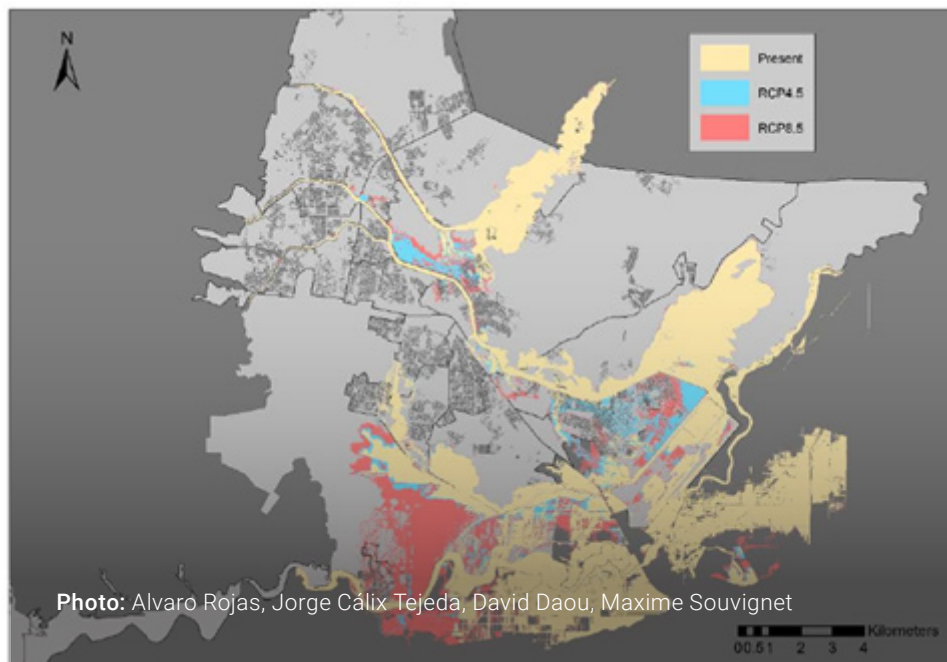
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