

Hat Yai, Thailand

FLOODS, VULNERABILITY AND URBAN RESILIENCE - LESSONS FROM HAT YAI, THAILAND

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THAILAND
Hat Yai



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KEY FINDINGS

- Patterns of urbanization and associated system level changes are creating new risks and vulnerabilities
- Fundamental governance gaps hinder core aspects of urban climate resilience
- Early warning systems and historical experience and knowledge can reduce vulnerability, but in a more uncertain, and less predictable climate relying on past experience can create problems too
- Long-standing aspects of poverty and vulnerability are likely to be exacerbated by climate pressures, while climate change will create new types of vulnerabilities
- Vulnerability is not just about the immediate impact of an event, but also how to cope, recover and advance after the event

Floods, Vulnerability and Urban Resilience - Lessons from Hat Yai, Thailand

Hat Yai—the largest city in Southern Thailand—has experienced several devastating flood events over the last thirteen years. This Briefing Paper draws on case study research that focused on how people in different neighbourhoods of flood-affected Hat Yai dealt with the impacts of the 2010 flood, and how they were able to recover and rebuild their asset base.

While the case study focuses on a specific event, the lessons emerging from this research have broader implications for our understanding of vulnerability, and conversely, of how to build urban climate resilience. The research highlights the importance of addressing vulnerability and resilience throughout the phases of a crisis—in preparedness, response and recovery.

Critically, the experience of poorer people in Hat Yai demonstrates that vulnerability should not be seen merely in terms of immediate impacts of an event, but also the ability to recover. This recovery phase is significantly influenced by access to support mechanisms—particularly health care and credit—whether through informal community and neighbour networks, or formal state mechanisms.

These findings demonstrate the importance of policy level support that targets the needs of more vulnerable households. However, there is also a need to address the underlying factors that have made the city of Hat Yai vulnerable to floods in the first place. Ultimately, the long-term resilience of Hat Yai and similar cities, rests on addressing system-level patterns of urban expansion, land use planning and water management.

Patterns of urbanization and associated system level changes are creating new risks and vulnerabilities

The urban area of Hat Yai has been growing at a dramatic rate over recent decades and the city is now ranked as the third largest in Thailand, after Bangkok and Chiang Mai. Hat Yai is located in a natural, relatively low-lying bowl, mid-stream of the U-Taphao watershed. Its natural location is exposed to floods, with runoff impacting the most populated parts of urban Hat Yai.

This vulnerability has been exacerbated by the combination of urban expansion in critical flood plain areas, the extension of road and rail transport infrastructure around the city, and by changes in forest cover and land use in the upper catchment.

These changes mean that the rate of run off has increased while natural drainage has been impeded.



U-Taphao canal



The city of Hat Yai

Fundamental governance gaps hinder core aspects of urban climate resilience

Underpinning these land use changes has been a fundamental gap in effective governance. These land use changes have occurred across the U-Thapao basin. Much of the land use changes, converting forest into rubber plantations, that have occurred in the upper catchment have been in spite of the establishment of reserve forests. The expansion of residential areas has occurred in the lower parts of the basin, in parts of the city that had previously been identified as being highly at risk of flooding, and areas that should be protected as floodways. The intensity of such urban development in critical areas puts more people and assets at risk, but also blocks drainage, and thereby puts other areas at risk.

Additionally, the development of transport infrastructure has failed to consider broader hydrological risks, only addressing these in piece-meal fashion after specific events.

Early warning systems and historical experience and knowledge can reduce vulnerability

The installation of Early Warning Systems (EWS) and the communications networks established to disseminate information effectively with neighbourhoods and communities proved to be significant in reducing impacts for many households. As access to communications improves, the use of internet based information and warning systems, and telecommunications through mobile phones has considerable potential for future events. However, the 2010 flood reached the city more quickly than previously, and occurred at night when many people were sleeping. This clearly demonstrates the critical importance of warnings and support reaching people at any time of day or night.

The experience of dealing with past events has made people more aware and better able to prepare themselves. Many people were able to move assets out of harms way, drawing on experience from previous events. For those with houses of two floors or more, this involved moving household assets to higher floors.

In a more uncertain, and less predictable climate this can create problems too

Relying on experience from historical events may not be enough on its own. Several households who had experienced inundation of the ground floors of their houses in previous floods moved belongings to the second floor. But flood levels in 2010 were even deeper than previous years—flooding the second floor with inundation happening much more quickly.

Long-standing aspects of poverty and vulnerability are likely to be exacerbated by climate pressures

Our research argues that poorer people, already with less room for manoeuvre in the face of any kinds of shocks and crisis, and marginalized from accessing state support, faced particular impacts.

The floods in Hat Yai impacted people from various economic backgrounds, with the commercial centre being particularly hard hit by inundations. At the same time, poorer people in Hat Yai with less assets and savings, were also severely impacted by the floods. The impacts were influenced by several factors. Some residential locations were in marginal flood prone land. These areas tend to experience smaller floods more regularly, but receive no compensation or support as such events are not classified as disasters. Many households lost a significant proportion of already limited physical assets, and were unable to get to work, suffering additionally from loss of earnings that had long-term impacts. Some poorer slum areas had to tolerate much longer periods of inundation, creating additional health problems.



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Community flood evacuation drill

Vulnerability is not just about the immediate impact of an event

The most far-reaching impacts of the flood were not related so much to the immediate impacts of inundation, but rather, to the ability of households to recover. In comparing different people's ability to recover, access to state support services, and to credit mechanisms were of critical importance. However, such access was determined by other factors. In neighbourhoods where local leaders understood the state bureaucratic systems, and had their own connections to state institutions, access to support moved relatively smoothly, allowing people to recover more quickly. Moreover, those households with their own networks of family, friends and neighbours were better able to access support, and in many cases borrow money at discretionary (or negligible) interest rates. Strong community institutions, and access to banks offering low interest loans—such as Islamic banks—played an important role in aiding recovery.

For those people who did not have such networks of social capital, the recovery phase was much longer, meaning that the cascading impacts on household health, income, and debt were more serious. Not having access to credit facilities pushed some people to local loan sharks who charged exorbitant rates of interest, with threats of violence for non-payment. This then pushed these people further into debt, poverty and destitution.



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Hat Yai flood

Key Lessons

The experience of the flood of 2010 in Hat Yai demonstrates that:

Access to reliable, timely, meaningful information is critical

Access to emergency support and recovery mechanisms is critical

Ultimately, the challenges for Hat Yai—particularly with greater uncertainty and higher levels of risk as climate change takes hold—are to address the system-level aspects of vulnerability and resilience, as well as provide the preparedness, emergency and recovery support mechanisms to all sections of the population.

This Briefing Paper has been produced by ISET-International in collaboration with the Thailand Environment Institute (TEI) under the Asian Cities Climate Change Resilience Network (ACCCRN) funded by the Rockefeller Foundation. The findings presented here are based on a full length Working Paper: - A. Le Meur (2014) *Floods, Vulnerability and Resilience in Hat Yai: a systems, agents and institutions based case study* ISET-International/TEI: Bangkok

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