

## Past floods and anticipating futures: Thailand and its post 2011 flood responses

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This is a story about how we view the future of deltas, how such views become possible through networks of traveling knowledge, and the influence of shocks on such networks. In this case, we look at two departments governing Bangkok, and at two shocks, a 2011 flood and a 2014 *coup d'état*. But we start by discussing deltas.

### The delta multiple

Deltas across the world are increasingly researched. Such research is often justified by saying deltas are victims of climate change, and focal points of population and economic growth. Such research then, informs long term planning. While we research deltas too, we shift emphasis, even though we think it will bear on planning. In this abstract, we discuss one delta, the Thai Chao Phraya delta, home to Bangkok. This sinking delta too faces drought and floods, and rapid urbanization. In its brief history, Bangkok and its surroundings transformed from a sparsely populated region where people had no roads but travelled through the Chao Phraya river and a dense system of canals, to a global megacity filled with highways and skyscrapers. The speed of development arguably has contributed to many local problems, and it has added dimensions to a delta that is increasingly complex.

When we use the label of a delta, it is a category we employ for river-mouths branching to the sea. But increasingly, when we speak of deltas, we think of them as complex loci of many separate developments. While the developments in the delta are of a brute and material nature, their becoming is too a result of how people who deal with local problems view and describe *their* delta. For example, if we examine flooding in the city, the delta is shaped by many different views. One actor, say, makes the proximate problems of drainage prominent, based on immediately anticipated rainfall from radar stations. And another takes up our mental space on the basis of descriptions that link to anticipated climate change, city networks and regional climate models.

This raises the question of how such views on the delta arise. Certainly, depictions of what the delta 'is' have changed since the earliest Siamese history, and since merchants traded using maps to navigate the waters in this never colonized country. How, and through which networks – are these contemporary visions on the becoming multiple that is the complex delta made possible? From where and how do descriptors of the delta travel to become signals, forming this view on what may be anticipated? What can we learn from Thailand about the becoming of deltas?

First, we want to highlight two examples of flood management in Bangkok, and show how their expectation of futures is made possible by separate networks allowing what we call the back-and-forth travel of knowledge. Second, we want to discuss Thailand, since it is an extreme and 'tidy' case in showing how regularities at a larger scale can form and disband the networks of traveling knowledge. That is, regularities that indiscriminately impact all networks of travel. We focus on the shock of the 2011 flood and the 2014 *coup d'état*. Thailand is an intriguing case, as its floods and political upheavals have so frequently caused upsets. In Thailand, both flooding (of desirable and an undesirable kinds) and *coup d'états* occur regularly enough, and impact all actors governing the delta. Since 1932, with 19 coups (12 effective) and 20 different constitutions and charters, Thailand holds a world record.

## Fractured visions. Two departments in Bangkok

In this abstract, we highlight two separate departments of the Bangkok Metropolitan Administration (BMA), Bangkok's most influential office, that responded to the floods of 2011.<sup>1</sup> Each of the BMA departments forms different networks in Thailand and across the globe. Each uses, too, different apparatuses of techniques, tools and concepts, some of which travelled through global networks. These apparatuses make certain expectations come into view, and favor specific inferences. Such is to be expected from the idea that different departments justify their existence from handling one task, and not another. It also means that the delta, in its becoming, is reshaped by these performed, multiple and fractured visions.

In the BMA, one department, the Department of Draining and Sewerage (DDS), deals with anticipating the immediate stress of the the tropical rain, and the Chao Phraya River and many canals that run through Bangkok. For the DDS, the delta is ad hoc and close by. It brings close this world through knowledge fetched from afar. It uses, for example, radar-systems that come from the U.S., and works from an emergency room in the style that can also be observed in, say Texas (Hogendoorn, forthcoming), be it that the bulk of the coordination is done with walkie-talkies instead of smartphones (a surprise, since the rest of Bangkok uses smartphones for everything). The radars translate their measurements into virtual depictions of red and blue dots moving over a green Chao Phraya delta, simulating rain clouds on the screen in front of them. The people in the room infer from the moving dots where the rain clouds will be in a couple of hours, and which parts of Bangkok will need assistance to cope with rainfall and drainage flooding. They do so by taking landline calls and using walkie-talkies. When we were there, the people of the DDS were negotiating with a Danish research institute, hoping to sell a model that would allow real-time flood forecasting. In this manner, the complete view of the delta can be tied to different actors operating across the globe. Even if the drainage department acts 'local', it can only do so via extensive networks across the globe. Its vision of the future is rooted in drainage systems, sensors and radars from the US and the feedback at a city-wide set of sluices and pumps imported from Japan. The BMA anticipates in hours, days at most. Its floods are made by rain, not by the river, let alone by events somewhere else in the climate or more distant social system. Even the cities and industries upstream, who certainly influence the water-levels in Bangkok are mostly outside the view of this department, although the Governor of the BMA does consult with the deputy minister and the more rurally oriented Royal Irrigation Department (Interview Royal Irrigation Department).

The other department deals with the resilience of the city. It ties directly to the Governor of Bangkok, whose representative offers advice to the Governors office. This department views the delta at a different spatial and temporal scale. For the resilience-officer, the future is more distant and ephemeral. The delta is the entire basin in Thailand, not just the Bangkok metropole. And it is wider still, as the delta becomes interconnected in used representations to the global climate system, while Bangkok becomes part of an order of city-networks that the resilience-officer himself takes part in. The department envisions with the aid of quantitative measures, say counting car-ownership to infer future population growth. Or crafting scenarios on uncertain climate change. Or through reaching a shared interpretation arising from recurrent talks with resilience-officers from other mega-cities. These officers congregate once a year, as part of the 100 resilient cities alliance, funded by the U.S. Rockefeller foundation. The Bangkok department has formed a clique with some likeminded cities in Australia and New Zealand, and works more closely together to share approaches and benchmarks. The department does not do climate-research itself. It has to rely on reports made by others, such as the summaries crafted by the IPCC on the state of the climate. Or it enlists the work of universities using various types of regional climate models that downscale global circulation models. Yet, the resilience-office also ties in well with the local philosophy of the King that passed away. This philosophy, is called the sufficiency economy, and roughly maps on to ideas of sustainable growth and prudential living. This local resilience effort is tied to a post-national cosmopolitan effort, contributing to a globalized set of delta descriptors.

<sup>1</sup> Our research program studies the acquisition, or 'travel', of knowledge that comes to shape visions on the Chao Phraya and Ayeyawaddy deltas. The aim of our research is to offer a comprehensive view of different views on the Thai delta. This paper is meant to test an idea. We are early on in our research, and thus welcome feedback on the idea.

## Two shocks, a flood and a coup

In 2011, Thailand's Chao Phraya delta, location of Bangkok, experienced an unexpected and intense flood, causing 815 deaths and over 45 billion U.S. dollars of damage (Interview BMA). As it goes with disasters, the stress mobilized many, in government and outside, in Thailand and abroad.<sup>2</sup> In our wider research, we examine this mobilization, and how it drew in the networks that allowed different envisioning of the deltas in the manner described. For example, Australians came to Thai aid, and the Thai government announced a multibillion dollar budget for flood management plans just after the flood. Many actors such as engineering companies from different nations in the world rushed in, hoping to win contracts in the planning effort. Tenders were won by Japanese and Korean actors, plans took shape, and contracts for mega-projects were set up. In the Chao Phraya, these actors encountered many Thai actors, with different yet overlapping tasks and little coordination among them. An important role there, too, was for the Thai King, who passed away during our field work, and was a patron of water-management (involved, for example, in the retention-areas called 'monkey cheeks' and the elevated highways acting as dykes around Bangkok). The two departments of the BMA too enrolled in many networks. The resilience office was largely motivated as a result of the 2011 flood, joining the resilience alliance after it arose. The 2011 floods placed the climate and resilience of the city on the map. For the Department of Draining and Sewerage, the floods pointed out the many points where governing was weak and needed improvement. Projects were started, including the planning of massive drainage tunnels.

In October 2016, the Governor of Bangkok, head of the BMA, was ousted on corruption charges brought up after the *coup d'état* from 2014. When the *coup* occurred, at a stroke, most plans associated with the government were put on hold. Coalitions disbanded. Visions of the future delta, so artfully recombined, faded from view again. This held for the large scale plans to make the Chao Phraya and Bangkok safer. For example, Dutch civil engineering companies who had hoped to sell their plans, attended elsewhere with hopes taken away. K-Water, a Korean company, had wooed the ousted government to win a big Tender, and so its plans became suspect too. Yet, it also held for the BMA's departments. We are currently mapping how these events affected the departments. Most plans that did find their way towards implementation seem to have involved the King's personal attachment (and money).

## Conclusion

The Thai delta is characterized by fractured governance and fractured visions. Such visions obviously relate to the separate tasks an actor sets out to do, anticipating a favorable outcome. With such disparate actions, what a delta is too becomes more of a multiple, more complex strands continuously coming into being and interacting. It goes beyond this case to describe the considerably fractured governing of the Chao Phraya. But the idea we are trying to flesh out, is that within fractured governing, large scale shocks like floods and political upsets, make for arrangements and disbanding of the networks that allow traveling knowledge to enter and cease entering – the formation of signals allowing novel inferences on the future delta. Good foresight, then, requires too to have a view on how multiple visions are, and how such visions depend in part on large upheavals. These upheavals, via networks, come to shape views on the delta, and in the end the delta itself.

<sup>2</sup> Examples are easy to find. The Dutch Delta plan after the 1953 flooding disaster had hit the Netherlands. The responses to the 2005 flood in New Orleans. Superstorm Sandy hitting New York in 2012. Texan efforts after hurricane Ike (Hogendoorn, forthcoming).