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HIDDEN VULNERABILITIES IN ASIAN MEGACITIES: THE CASE OF THE BANG KHUN TIAN COMMUNITY IN BANGKOK, THAILAND

By Sofiah Jamil

Much attention has been paid to the issue of environmental hazards in Asia's megacities. However, the focus has usually been on the urban centres, rather than on the surrounding areas still under metropolitan jurisdictions. This NTS Alert seeks to address this gap by examining the experience of rural communities living in Bang Khun Tian, a coastal area in Bangkok province, whose environmental problems have been exacerbated by the fallouts from the rapid urbanisation occurring upstream. Addressing these hazards would not only require better coordination among the various layers of governance within Bangkok, but also between Bangkok and its neighbouring provinces.

A bamboo dike built by residents in Bang Khun Tian to prevent coastal erosion and sustain their aquaculture livelihoods.

Credit: Chumchonthai Foundation.

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Introduction

The urban vulnerabilities of Asian megacities have gained increasing attention in recent years, with environmental hazards in Asian cities having been well-documented (UN-HABITAT, 2008, 2011; UN-HABITAT and UNESCAP, 2010; WWF, 2009; UNISDR, 2010). Other studies have highlighted rapid urbanisation and extensive ground-water extraction as primary contributors to these hazards that affect not only cities, but also the areas surrounding them (Malaque and Yokohari, 2007; Watson, 2009). With the increased attention given to these hazards and the recent climatic disasters in urban areas, there has been pressure on governments throughout Asia to take concrete action to reduce the vulnerabilities of cities as they are significant centres of economic activities that are essential for development. Metropolitan governments are thus faced with the dilemma of having to balance their insatiable drive towards economic development with measures to mitigate environmental disasters.

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Underlying this dilemma, however, is the typically poorly addressed issue of uneven development in areas surrounding cities (peri-urban or rural) that are still under metropolitan jurisdiction. Two observations can be made. Firstly, the lack of attention given to these surrounding areas is in part due to the low economic value that these areas contribute to the national economy. Secondly, when metropolitan governments do give attention to these areas, it is often an attempt to develop it for the benefit of cities or other metropolitan stakeholders, rather than local communities. In both instances, the superficial attention to these areas of low economic value leads to the neglect of the needs of the communities living there, even though they are also exposed to the environmental hazards experienced in the cities.

This NTS Alert will demonstrate these observations by highlighting the case of Bang Khun Thian (BKT) district, a rural, coastal area in the province of Bangkok. It will examine the environmental hazards faced by the area's residents; many of these hazards have been exacerbated by the fallouts from the urbanisation occuring upstream of the district (in the urban centre of Bangkok). It contends that addressing these hazards requires not only better coordination among the various layers of governance within Bangkok but also between Bangkok and neighbouring provinces. This NTS Alert will refer to the findings of a field study conducted in Thailand by a team from the RSIS Centre for Non-Traditional Security (NTS) Studies as part of a project on Vulnerabilities of Asian Megacities.

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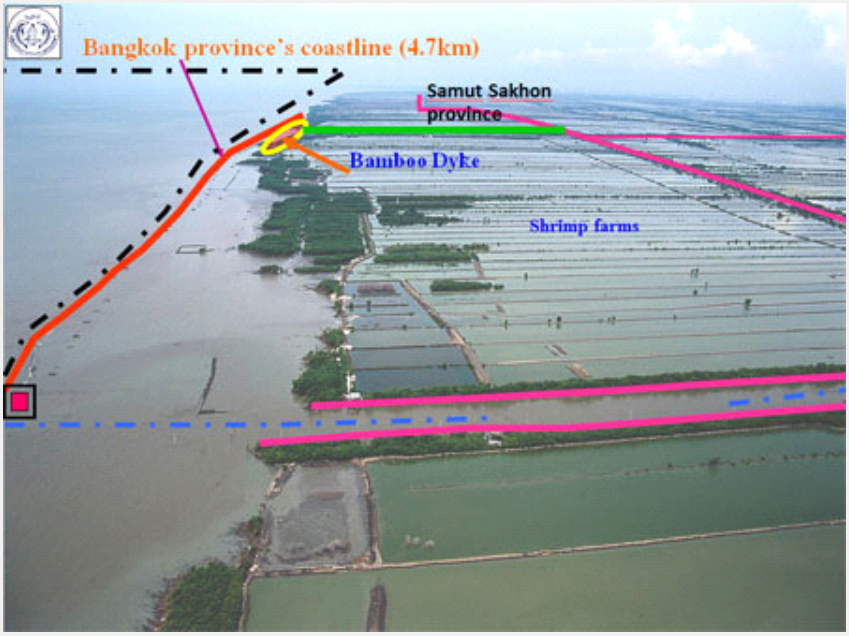
Environmental Hazards in the Bang Khun Tian (BKT) District, Bangkok

The BKT district in the province of Bangkok covers a small stretch of coastline along the Gulf of Thailand. Aquaculture, particularly shrimp- and cockle-farming, is the primary lifeline for BKT residents. The abundant yields in the earlier periods of shrimp-farming were so great that there was little incentive to pursue further education. Hence, most residents have only up to high school qualifications (Jarungrattanapong and Manasboonphempool, 2008). This low level of education has prevented them from venturing into other jobs when these sources of livelihood are threatened. The lack of mobility has become obvious with the increasing frequency and intensity of environmental hazards – primarily coastal erosion and mangrove degradation – in the BKT district.

Figure 1: A bird's eye view of coastal erosion in the Bang Khun Thian (BKT) district.



The red line in the sea marks the location of the original coastline before the onset of coastal erosion in the late 1980s. The pink square on the left marks the position of a landmark in the Bang Khun Tian district which is now inundated.

Credit: Chumchonthai Foundation.

Coastal erosion has resulted in a shoreline that has receded by about 300 m since the late 1980s (Jarungrattanapong and Manasboonphempool, 2008). Contributing factors include sea level rise in the Gulf of Thailand – as seen from official national and intergovernmental reports (Office of Environmental Policy and Planning, 2000; IPCC, 2007) – as well as increasing land subsidence as a result of ground-water extraction (Phien-Wej et al., 2006). Practices related to urbanisation, such as ground-water extraction, could be seen to have had a greater impact than sea level rise in the BKT district. It has been reported that while the sea level in the Gulf of Thailand is rising by about 0.25 cm per year, Bangkok city is sinking at a far faster rate of up to 10 cm annually (Gray, 2007). These environmental hazards have not only caused a loss of natural mangrove habitats and land for aquaculture activities, but have also damaged social infrastructure such as electrical power connections.

The BKT district has also experienced polluted streams and the situation is exacerbated by poor wastewater management upstream (in the urban centre of Bangkok). Aquaculture and agricultural areas that are greatly dependent on good water quality have been adversely affected, and this has led to further strain on economic livelihoods and impinged on the health security of communities in the BKT district.

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Existing Initiatives to Address These Environmental Hazards

There have been several government initiatives implemented in response to environmental hazards in the BKT district. Several civil society groups and some business communities have also come forward to render support to local communities that may lack the necessary resources to carry out preventive measures.

However, government interventions have largely been reactions to criticism of their lack of commitment in addressing local concerns that fall within their jurisdiction rather than proactive assistance to their constituencies. As a result, interventions have been superficial with minimal effort made to understand the root causes of the socioeconomic and environmental issues faced by local communities. These responses are reflected in their apathetic attitudes towards community based solutions to the environmental hazards.

Building of Breakwaters

The building of breakwaters is a common and immediate means of addressing coastal erosion, which in turn also serves to ensure that mangrove root systems remain secure. Local communities have initiated efforts to build breakwaters to mitigate a receding shoreline. Common materials used to build these breakwaters have been stones or bamboo. However, these efforts have been either self-funded or financed with loans from friends and relatives, with very little coordination among the locals themselves in building the breakwaters. The breakwaters often extend only as far as the area of a household's property and their construction is dependent upon the household's financial means. Jarungrattanapong and Manasboonphempool (2008) have noted that locals have expressed the need for government intervention to sustain the breakwaters and respond to future instances of coastal erosion.

In the absence of immediate government intervention, several civil society groups, such as the Chumchonthai Foundation, have come forward to assist BKT residents. The Foundation has played a role in enhancing awareness on sustainable livelihood options and building a network to maintain community engagement and create a sense of ownership among local communities (See Box 1). It has also played a significant role in providing support for the building of bamboo dikes, which is an inexpensive and environmentally friendly way of preventing coastal erosion.

Although some have suggested that concrete dikes rather than bamboo ones should be built since the latter only lasts for a few years, the problem can be easily addressed with constant monitoring and consistent funds to support periodic replacement of the bamboo dikes. Although concrete dikes are more fortified structures, they can cause environmental damage to marine life. Such damage could, in combination with pollution from waterways originating upstream, have further adverse implications on aquaculture livelihoods in the BKT district.

Box 1: Civil society engagement in the Bang Khun Thian (BKT) district.

The Chumchonthai Foundation, a non-governmental organisation (NGO), has worked with 11 communities in the BKT district to address environmental degradation and loss of livelihoods. The Foundation, working in collaboration with the communities, is involved in the following:

- Building environmentally friendly dikes.
- Protecting the land.
- Raising community awareness on existing environmental problems.
- Conserving the local environment.
- Generating income for local communities.
- Serving as a knowledge centre to promote ecotourism.

The Foundation has helped to form a community network known as the Sea Conservation Network. This Network conducts monthly meetings which are attended by a representative from each of the 11 communities living along the BKT coastline. This Network has mobilised communities to build and maintain bamboo dikes. Such community engagement activities have instilled a greater sense of ownership among BKT residents of their environment.

Credit: Chumchonthai Foundation.

Mangrove Conservation and Reforestation

Mangrove conservation and reforestation initiatives have been adopted to address the problem of polluted waterways in the BKT district. Mangroves have been planted along the river to filter out pollutants and improve the habitat. Businesses have helped to facilitate this by participating in mangrove planting activities as a means of boosting their corporate social responsibility profile. Mangrove conservation also improves the habitat for aquaculture; a grassroots initiative in August 2010 saw the release of 1 million small fish and shrimps into the waterways as a means of creating more jobs for fishermen.

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Challenges to Overcome in the BKT District

While there are various initiatives to address the environmental hazards, there have nevertheless been several factors which have impeded their effectiveness. These challenges, namely, lack of leadership, transparency and trust, have led to a somewhat haphazard development of environmental protection initiatives, which tend to serve interests other than those of the local communities. This lack of coordinated development is also in part due to the increasing number of actors involved in the environmental initiatives. While the growing participation by both governmental and non-governmental sectors is commendable, coordination and communication among these various groups will need to be further improved upon – not only within the BKT district, but also at the inter-district (collaboration with districts from other provinces along the coast), provincial and national levels.

Lack of Trust

Building trust is crucial to facilitating communication and engagement among communities, governments and experts. While there have been initiatives such as the Sea Conservation Network by the Chumchonthai Foundation to enhance community engagement, the process can only be deemed effective if the engagement is based on trust and is sustained over a length of time. The lack of trust is a challenge. It was noted that some members of the Chumchonthai Foundation had initially encountered significant resistance from BKT residents they sought to help; they spent a year listening to villagers' concerns in order to gain their trust (interview with Sarinporn Poommanee, 29 May 2011, in Bangkok).

Local community leaders, who should ideally have the community's interests at heart, can play a significant role in bridging this trust gap by acting as interlocutors between villagers and visitors to the district (such as researchers, volunteers from the public and private sectors and governmental officials). As the main point of contact, community leaders could help to avoid issue fatigue among villagers who are often approached on an individual basis by members of the public who wish to render help. That said, it is important to ensure transparency to avoid instances where these leaders act in their own interest rather than in their community's interests.

Lack of Transparency

The lack of transparency related to breakwater construction and mangrove rehabilitation projects has contributed to problems of effective coordination and cooperation in addressing the BKT district's environmental hazards. This was seen when disagreements arose among stakeholders on the varying breakwater technologies and methods to be adopted. Some civil society practitioners contend that the actions of the Bangkok Metropolitan Administration (BMA) and the technical experts involved did not reflect concern for the grievances of local communities in the BKT district, but rather, demonstrated the desire to advance investments that develop specific profitable technologies. This is further aggravated by the lack of consultation with local communities when these technologies were pursued (interview with Rawadee Jarungrattanapong, 29 May 2011, in Bangkok).

Also exemplifying the lack of transparency is the superficial environmental impact assessment (EIA) conducted by the BMA. The EIA's conclusions were in line with the preference of the BMA and the engineers involved, favouring highly technical and capital-intensive (concrete) breakwaters over inexpensive bamboo dikes that facilitate aquaculture and ecotourism – this was even though the report highlighted the shortcomings of concrete dikes. Such an incongruous conclusion would seem to suggest that the local communities' interests in the BKT district are being sidelined by ineffective and irresponsible leaders.

Lack of Leadership

The lack of leadership can in part be attributed to the lack of interest by government officials in enhancing aquaculture or supporting relatively inexpensive breakwater projects. This is due to two factors. Firstly, there is the perception among some BMA officials that the BKT district has little or no economic value (interview with Sarinporn Poommanee, 29 May 2011, in Bangkok) and hence would provide little or no gain to the BMA. Secondly, there is the perception that engagement in the BKT district is only beneficial if it includes capital intensive projects such as the construction of concrete dikes. Such attitudes mean that there is an unwillingness to listen to local community concerns and a tendency to cater to investors' demands, all in the quest for economic gain.

The lack of leadership at the community level can also prevent strong and coordinated local community engagement. This is seen when leaders choose to enrich themselves rather than promote the interests of their communities. This apparently occurred with regard to breakwater construction and mangrove rehabilitation in the BKT district. Concerning the former, volunteers working in BKT observed that a

community leader had supported the proposal to build concrete dikes despite opposition from his community. Fortunately, other community leaders voiced their strong opposition to the proposal by raising the issue with a former BKT district governor and engaging the media to publicise the issue. As a result, the BMA revised their plan and used sandbags instead of concrete for the breakwaters (interview with Sarinporn Poommanee, 29 May 2011, in Bangkok).

In the case of mangrove rehabilitation projects, companies would contribute to the purchase of costly mangrove seedlings. Local communities would then take charge of the processes of monitoring and evaluation to ensure that the saplings do not die over time and to sustain the project over the long term. However, there have been instances of local leaders not developing fully the links of engagement between their local communities and private companies in the processes of monitoring and evaluation of the saplings, which led to death of the saplings and subsequent failure of these projects. This occurred because local leaders stood to gain financially (from commissions) when other companies are engaged to fund new mangrove planting activities (interview with Pakamas Thinphanga, 29 May 2011, at the Thailand Environment Institute).

The central government and leaders from various provinces have also not effectively coordinated their solutions to common environmental problems. Such leadership would be necessary to ensure that breakwaters built across provinces along the Thai coast (along the Gulf of Thailand) contribute to fortified and effective coastal erosion defences. Given the lack of leadership, and hence coordination, among the numerous actors involved, the building of breakwaters along the coastline has been relatively haphazard. The different types of breakwaters thus have varying levels of effectiveness in preventing coastal erosion.

Dr Vilas Nitivattananon from the Asian Institute of Technology, Thailand, highlighting the various types of breakwaters built along the Gulf of Thailand. The presentation was made during a meeting with faculty and students of the Asian Institute of Technology and members of the Chumchonthai Foundation on 30 May 2011 in Thailand.

Credit:Sofiah Jamil/Centre for NTS Studies.

A contributing factor to the haphazard construction of breakwaters along the Gulf of Thailand is the varying amount of financial resources available to assist coastal communities. This is in part dependent on economic activity in the area; the nature of the economic activity has had some influence over the actions taken to address coastal erosion. For example, industrial areas near the coast may have more funds available for building breakwaters than agricultural areas as factory owners are more financially able to invest in projects that ensure that their industrial operations are not affected. It is therefore important for leaders of affected provinces to be aware of the capabilities of each other's provinces and to identify the gaps which would perhaps have to be addressed at the national level. Doing so would help to reduce the tendency for provincial leaders to excuse their own inaction by placing the blame on the lack of cooperation from neighbouring provinces in coordinating the building of coastal defences.

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Conclusion

As seen from this BKT case study, solutions to addressing environmental concerns are readily available but require funds to be effectively realised. The challenge is that the implementation of solutions hinges on whose interest they benefit. While local community interests – in terms of a safe environment that provides sustainable sources of livelihood – ought to be met, these are often superseded by the interests of government officials or local leaders. Effective multilevel governance is needed to ensure that community based initiatives can contribute to a more coordinated response to environmental hazards at the national level. As such, it is paramount to have mechanisms that ensure transparency, improved inter-district coordination and enhanced provincial and national political will to address local issues.

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