

Research Report

**“It is Built Against Nature:”
Floodwalls Built After the
2011 Floods in Central Thailand**

Danny Marks

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Danny Marks*

* School of Geosciences, University of Sydney; email: marksdan05@gmail.com

ProjectImproving Flood Management
in Thailand**Research leader**

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Abstract

A political ecology of the Thai state's response to the 2011 floods in Central Thailand is developed initially by analyzing the discourses used by key state actors to describe the causes of the floods. Rather than blaming flooding on an overreliance on flood-control infrastructure, poor land use, and mismanagement in 2011, they blamed the floods on nature, too much water and encroachment of waterways. Government actors at all levels decided to build back Central Thailand by constructing more and higher floodwalls. They did this for a number of reasons, particularly their view of the unfeasibility of land use control, their attempt to please the electorate, and the opportunities they saw for patronage. Government agencies chose locations for these floodwalls that would enable them to protect urban centers, either at the regional level (the entire metropolis of Bangkok) or at the municipal level (the inner city). They claimed that these projects were necessary because they would protect spaces that are more valuable economically. The effects of these projects are inequitable and unfair. A number of groups, who are located on the periphery of society and will bear the costs of these projects, have opposed them. In most cases they were unable to bring about significant changes to the projects or plans for them. Rather, the more powerful government agencies, particularly leaders at the national level, succeeded in pushing through these projects which protected the interests of the elite and urban middle class and lacked consideration of the projects' long-term effects.

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Introduction

“The government shouldn’t block the water; they should let it flow.”

This is what the vast majority of over 100 Thais who lived in in the Bangkok Metropolitan Region (BMR) and experienced flooding in 2011 said as well as a number of bureaucrats whom I interviewed from 2014-2015. They were replying to a question about what the government should do to reduce the risk of future floods after the 2011 floods. Scientists, academics, and some policymakers agree with their opinion. These experts argue that flood walls, dykes, and levees are a “maladaptive solution” (Wenger 2015, 22) for a number of reasons, including their high cost, heightened long-term flood risk, and social injustice (Liao 2013). In Central Thailand, however, even after over a dozen dykes failed in 2011, which worsened the flooding that year, Thai government agencies, at both the national and provincial levels, have acted against the wishes of local citizens. These agencies built new dykes or raised the level of existing ones in the BMR or they are planning to do so. They also have strategically placed these floodwalls to create uneven exposure to future floods, protecting valuable economic areas in the inner city while imperiling inhabitants of the outer and less economically-valuable areas. Their responses raise questions of equity, justice and economic effectiveness in the long run.

Why were these dykes being built—meaning that the government has not significantly altered its flood management after the great flood of 2011—and why were they being built in these locations? And what has been the response of local communities to these dykes? In this paper I use a political ecology approach to analyze the government’s and local responses to the 2011 floods in the lower Chao Phraya flood basin and suggest five reasons why the national and local governments have built these floodwalls in these locations. This political ecology can be understood through political economy drivers (see DFID 2009), the physical geography of the basin, and the discourses used by key state actors regarding the causes of the 2011 floods and needed responses. Using an environmental justice framework, I assess whether these projects are just. To help illustrate answers to this set of questions, I use two case studies: a major highway road heightened in the Thung Pra Pimol sub-basin in Nakhon Pathom Province and a proposed dyke along the Chao Phraya River in Pak Kret Municipality in Nonthaburi Province.

While governments in a handful of countries, such as the Netherlands, UK, and China (Wenger 2015), are now removing dykes and using non-structural solutions to flooding, the most common approach taken by both national and local governments worldwide is to build dykes and other flood-control infrastructure (Jones et al. 2012, Liao 2013). Although scholars have explained theoretically why these governments continue to choose this option, they have not provided any case studies in Southeast Asia that provide an analysis grounded in interviews and case studies of why state actors today are choosing dyke building as a response to major flooding, why they are building them where they do, and what are the contestations arising over them. Central Thailand is an especially interesting case because not only do the majority of the population and numerous bureaucrats disagree with this approach and it is taking place in a highly politicized environment but also flooding occurs in a mostly flat terrain meaning it is not difficult for actors to divert flood water from the north unlike if they were operating in a steep terrain. This paper seek to help fill this gap in our knowledge and to stimulate discussion and further research on the political ecology of dyke-building in urban areas after major floods.

In this paper, I first briefly discuss why there are many drawbacks to building flood-control infrastructure and then review the literature on the political ecology of flooding to help us understand why governments continue to build this type of infrastructure. I also introduce Schlosberg’s environmental justice framework in this section and link the literature on political ecology to that on environmental justice. As a way to introduce the case studies, I then summarize some of the causes of the 2011 floods and the state’s subsequent efforts to prevent future floods. Next I address the questions of why the government has chosen to build dykes as a response to the 2011 floods and why the government has chosen to build them in the locations it chose. Last, I discuss the contestations that have arisen over the floodwalls, particularly opposition from local-level actors, and why these floodwalls continue to exist or are still being planned. I conclude by discussing how these government responses to the 2011 floods affect vulnerability and whether they are fair. This paper uses some secondary but mostly primarily sources, drawing on numerous interviews conducted during 2015.

The Political Ecology and (In)Justice of Dyke-Building: Still Building Them despite Their Drawbacks

The question of whether flood-control infrastructure is the best way of dealing with flooding has generated disagreement and criticism during the past few decades, but the majority of cities worldwide continue to rely upon such infrastructure to protect them from floods. The benefits attributed to flood-control infrastructure include reducing the frequency of flooding and stabilizing floodplains to enable urbanization and economic growth (Liao 2013). However, critics point to several drawbacks in relying upon flood-control infrastructure. First, although it lowers the frequency of ordinary flooding, it increases the amount of catastrophic damage during extreme flood events. Relying solely on levees leads to an ‘all or nothing’ approach because of the associated belief that no other actions to reduce flood risk are needed, such as insurance, raising the height of buildings, and constructing urban drainage systems. This approach to flooding also leads to increased development behind the dykes without any control of land use which is needed to reduce damage if the flood-control infrastructure fails (Larson 2010). This overdependence on floodwalls led to increased losses when Hurricane Katrina struck New Orleans in 2006 (Bankoff 2006). Second, by reducing periodic flooding, flood-control infrastructure reduces the resilience of a river’s ecosystem and thus the city’s resilience to floods (Liao 2012). Periodic flooding enables the river to maintain its ecological functions and host a higher level of biodiversity, whereas altering the flood regime could push the river system to collapse (Tockner et al. 2008). Third, flood-control infrastructure does not always reduce risk, but instead merely re-distributes it. It may simply raise flood levels in other areas—escalating flood stages upstream, hastening the flow of water downstream, or increasing flooding on the other side of the river. These effects can harm areas that are already developed or which have less flood-control infrastructure (Kousky et al. 2011).

Overall, becoming dependent on flood-control infrastructure means that cities are “highly resistant—but not resilient—to floods because they have physically adapted to the artificially expanded dry-and-stable conditions to become intolerant of wet conditions” (Liao 2012, 6). This resistance means that floods are merely being postponed, causing risk to accumulate in these areas and disasters to become more severe (Etkin 1999). Climate change adaptation experts add that flood-control infrastructure is seen

as a ‘bad’ response because of not only those aforementioned negative side-effects but also it can lead to the entrenchment of ‘business as usual’ without needed major transformations (Wenger 2015).

To understand why governments continue to build dykes and other flood-control infrastructure after floods and where they build them, it is useful to review the political ecology literature on flooding. Political ecologists argue that the location and patterns of this infrastructure reflect flows of power and the circulation of capital, rather than necessarily decisions made based on long-term risk and resilience calculations. Often the state, rather than the private sector, has undertaken investments in flood risk reduction, such as flood protection structures, designation of public floodways and land-use controls, and therefore plays a key role in determining how vulnerable people are to floods. Hence, the state is a crucial arena of contestation over flood protection. In this contemporary landscape, the elites often have been able to use the state to accumulate social surpluses in areas where they live, invest, and work at the expense of other groups (Collins 2010). Studies of New Orleans before and when Hurricane Katrina struck revealed that differing levels of vulnerabilities had arisen largely due to pre-existing structural inequalities (Cook and Swyngedouw 2012). However, the structures of power governing floods and their effects are not static. Rather, by opening political space, floods can act as catalysts or tipping points shaping “the future political trajectory towards an accelerated status quo or a critical juncture” (Pelling and Dill 2010, 29).

The tensions arising since 2011 in urban and peri-urban Central Thailand over the location and height of the dykes and roads, compensation schemes, and new water management policies reveal a deeply politicized floodplain marked by socio-political conflicts. Urban floodplains not only in Thailand but throughout the world have become highly contested terrains because of “local socio-natural relationships that encapsulate past legacies and arrangements, as well as interactions happening at other scales, such as anthropogenic climate change” (Barbedo et al. 2015, 1). By situating these contestations and trends as political problems reflecting differing interests, agendas, and levels of power, political ecologists argue that flood response analyses must also include human agency, institutions and policies as a key component (Aragón-Durand 2007). Adger (2006) usefully adds that those who are vulnerable to disasters, such as floods, are often excluded from decision-making processes and lack access to power and resources.

Environmental justice (EJ) scholars argue that socioeconomic processes create unjust vulnerabilities to flooding. They argue that the “distribution of environmental goods and harms” has a tendency to “follow that of economic goods and harms, particularly within cities” (MacCallum et al. 2011, 1). Schlosberg (2007) theorizes that there are three types of environmental injustices: distributive (how environmental goods and bads are unevenly distributed), procedural (whether different groups have equal access to decision-making regarding the environment), and lack of recognition (whether groups have been discriminated against due to their identity). Debbane and Keil (2004, 210) add that EJ is “conceptually and practically a complex web of multi-scalar relationships” which “create a unique event of environmental injustice at a given location.” And therefore EJ analyses should compare spatiality, such as sites of toxic hot-spots in communities of color or, in this case, sites of potential exposure to future floods. Further, EJ issues should not be analyzed as a local, singular event but instead within larger “socio-economic problematics and political realities” (Debbane and Keil 2004, 222). Therefore, the floodwalls built in Central Thailand should be placed within a larger discussion not only of the history of uneven exposure to floods in Thailand, particularly in 2011, but also of the history of uneven development in Thailand.

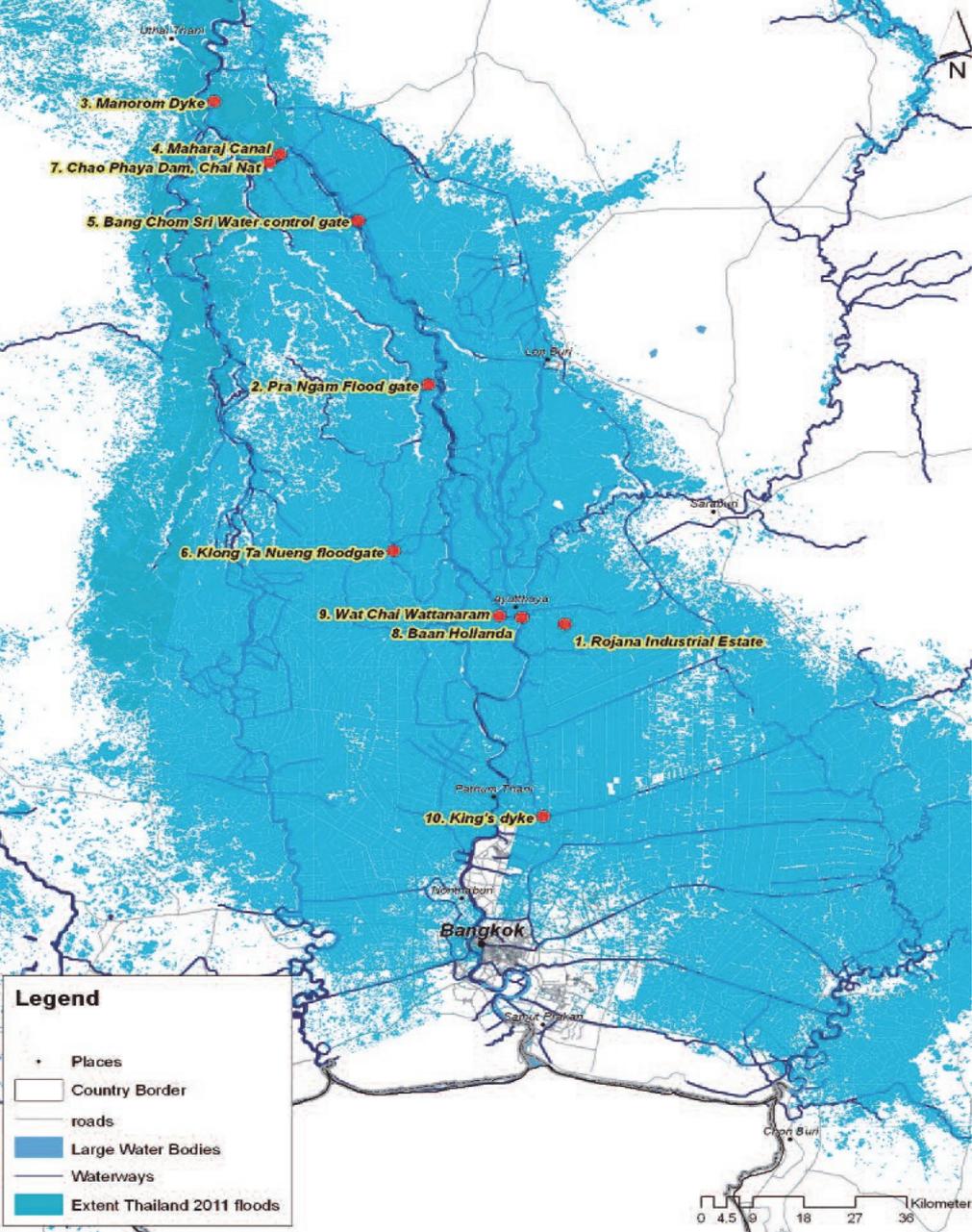
This section argues that there are advantages and disadvantages to building dykes but in the long-run, the latter outweigh the former. The decisions on whether to build them, where they will be located, and how high they will be reflect the outcomes of political contestations. The reason why key state actors continue to build them is that they seek to protect their assets. However, the most vulnerable have rarely been involved in these decisions. In addition, EJ theorists argue that analyses of decisions of where to build floodwalls should investigate whether these decisions are just distributively, procedurally, and in terms of recognition. Now we turn to Central Thailand to review what happened during 2011 and state responses after the flood subsided.

2011 Floods and Reconstruction Efforts Afterwards: Background of the Case Studies

The failure of flood-control infrastructure certainly contributed to the high level of devastation experienced during the flooding in 2011. One reason they failed is that before 2011, local government public work agencies often constructed dykes ad hoc to address local flooding problems or improve irrigation without using any integrated plan. However, since many dykes function as access roads, the Department of Rural Roads is responsible for their maintenance. The construction of dykes along riverbanks in many upstream provinces has reduced the capacity of dykes downstream to handle a 1-in-100 year flood (Manuta et al. 2006).

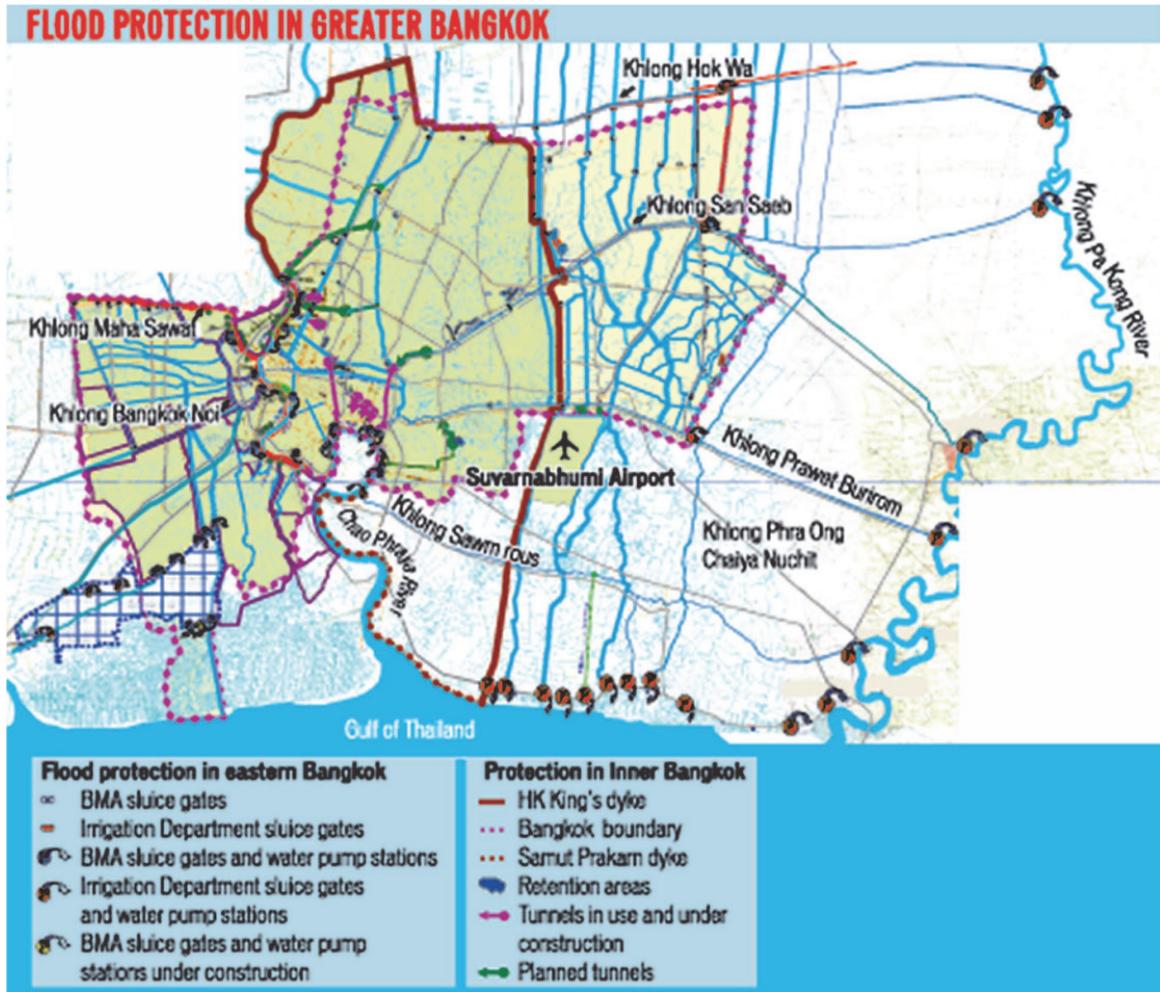
In 2011, flood-control infrastructure failed along the Chao Phraya upstream of Bangkok. At least 13 dykes and water gates broke partially because local government agencies had not adequately maintained these ageing structures. The breaking of this infrastructure, especially the Bang Chom Sri water gate in Singburi Province (see #5 in Figure 1), caused the flood protection embankment along the river to be breached (Poapongsakorn and Meethom 2013). In addition, the King's Dyke (see Figure 2) which is supposed to protect northern Bangkok is designed primarily to address low-level flooding rather than infrequent but high-level flooding events and subsequently was breached in two places in 2011.

Figure 1: Overview of the 2011 Flood Extent and Location of Key Sites, including Bang Chom Sri Watergate



Source: ENW 2012.

Figure 2: Flood Protection Infrastructure in Greater Bangkok



Source: The Department of Drainage and Sewerage, Bangkok Metropolitan Administration

Source: Fernquest 2011.

To make matters worse, non-structural measures were insufficient. In particular, the number and size of the retention ponds in the BMR were too small to hold the floodwaters in 2011 and they are less effective than they could have been because they are not connected to a network of other ponds and canals. In addition, poor regulation of land-use contributed to the floods. The excessive pursuit of property development, however, contributed to overbuilding in the BMR, including housing estates built illegally in green zones, which were supposed to serve as reservoirs to store floodwater, and in floodways, such as industrial estates in Ayutthaya (see Marks 2015). Moreover, poor coordination between provincial governments weakened land-use planning. For example, the Bangkok Metropolitan Administration (BMA) had designated a water catchment area (green and grey areas) to be undeveloped in northwestern Bangkok before 2011, but north of this area, the Nonthaburi provincial government has allowed extensive development (yellow, orange, and red zones), thereby rendering this catchment area ineffective (Marks 2015).

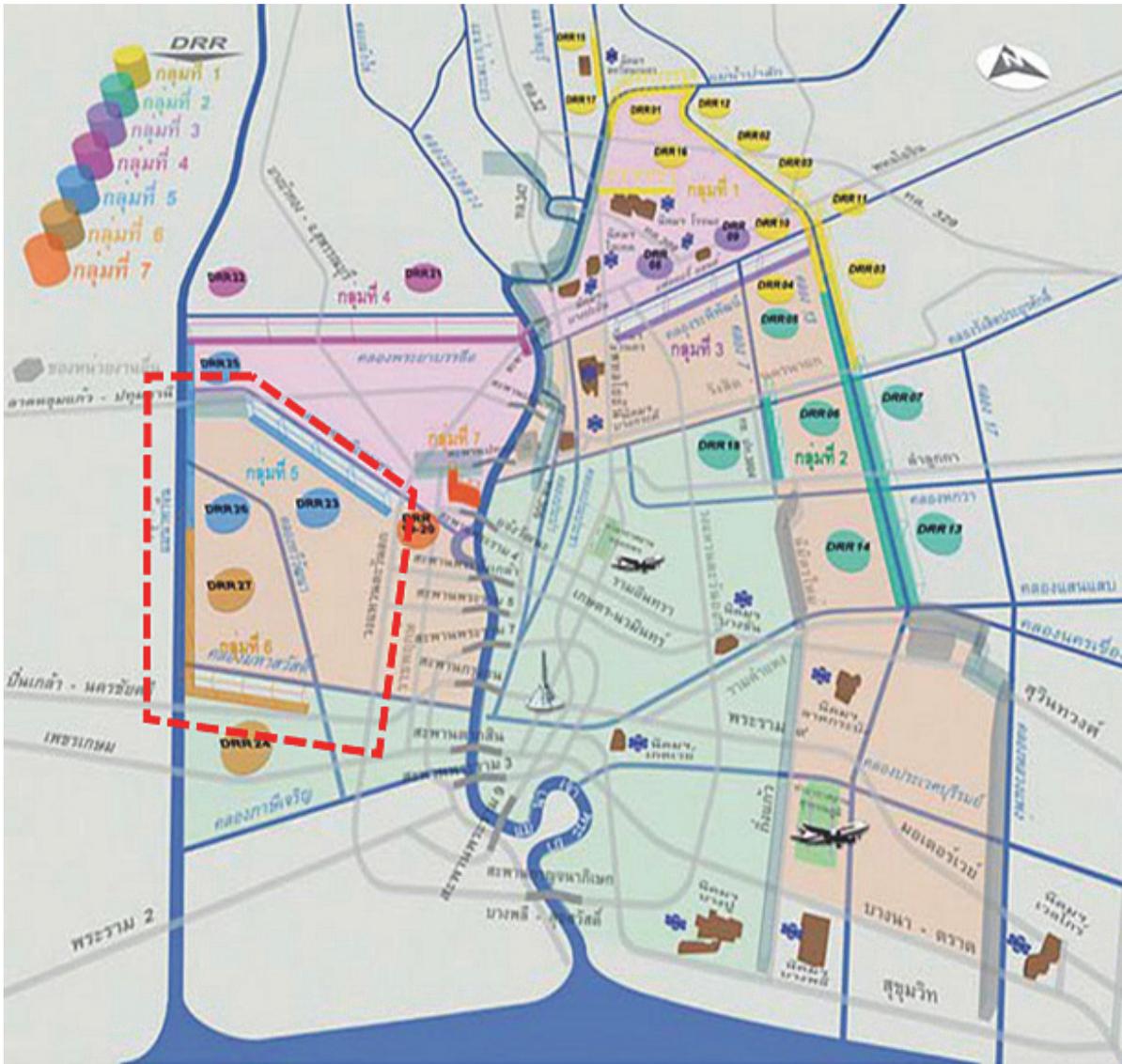
In 2011, existing dykes, roads, and temporary floodwalls created highly uneven vulnerability to the floods. In particular, BMA erected huge sandbag barriers, closed water gates, and diverted water to the west to protect the city's central districts. As a result, communities on the outskirts of the city were subject to substantial flooding and their assets were heavily damaged, but those living in the inner city stayed dry. At the same time, local politicians and community leaders, seeking to protect their own turfs, set-up their own temporary dykes which created numerous conflicts and worsened the overall response to the floods.

During the flood and after it subsided, key government actors, such as the Prime Minister and Deputy Prime Ministers blamed the floods on nature, climate change, and excessive water. For example, Deputy Prime Minister Plodprasop Suraswadi said in an interview, “There was too much water. We could not handle it.” Deputy Prime Minister Kittiratt Na-Ranong declared that the flooding “has to be the result of climate change and global warming” (NBC News 2011). Given these discourses about too much water causing the flooding, two potential responses could follow. One is, following the lead of Netherlands and the city of Sacramento (which created the Yolo Bypass), to accept and live with this type of water by removing polders and using non-structural measures to build resilience to floods (Liao 2012). The other is to try to block water and keep certain areas dry, thereby potentially creating uneven vulnerabilities. Despite widespread anger against the government’s response to the floods and high devastation and number of deaths, the national government chose the latter option and viewed flood-control infrastructure as the best response to the risk of future flooding.

The previous government, headed by Prime Minister Yingluck Shinawatra of the Pheu Thai Party, proposed a massive US\$11.3 billion water infrastructure improvement plan to increase protection in 2012, with almost 90 percent of the budget allocated to manage water in the Chao Phraya River basin. It implemented some of the plan before being removed by the military coup in 2014. One key project in the plan already completed was raising a series of roads on the periphery of the BMR by the height of the 2011 floods plus 50 cm (as seen as the DRR projects in the Figure below). This project cost 8.9 billion Baht (US\$ 261 million).

In this paper, I focus on projects DRR 24-27 (the red polygon in Figure 3) which are the roads raised on the western side of Thung Pra Pimol in Nakhon Pathom (see Figure 4), a province approximately 30% urban and 70% agriculture. The roads (the purple line in Figure 5) are on the eastern Bank of the Ta Chin with a small area existing between the road and the river. These projects are part of the greater project of DRR 21-27 which is to prevent floodwater from entering the Khlong Phraya Banglu in the north of Nonthaburi (DRR 22) and from flowing from the eastern side of the Ta Chin River into Nakhon Pathom.

Figure 3: Figure of the Roads Raised in BMR after the 2011 Floods



Note: Each DRR color represents a different group of projects. In its each group, a different company was responsible for raising the road. The light green area which is the metropolis of Bangkok in the map is the area that the national government wanted to protect the most from future flooding, followed by the orange area. DRR stands for disaster risk reduction and each number was a different stretch of road that was raised.

Source: Department of Rural Roads 2014.

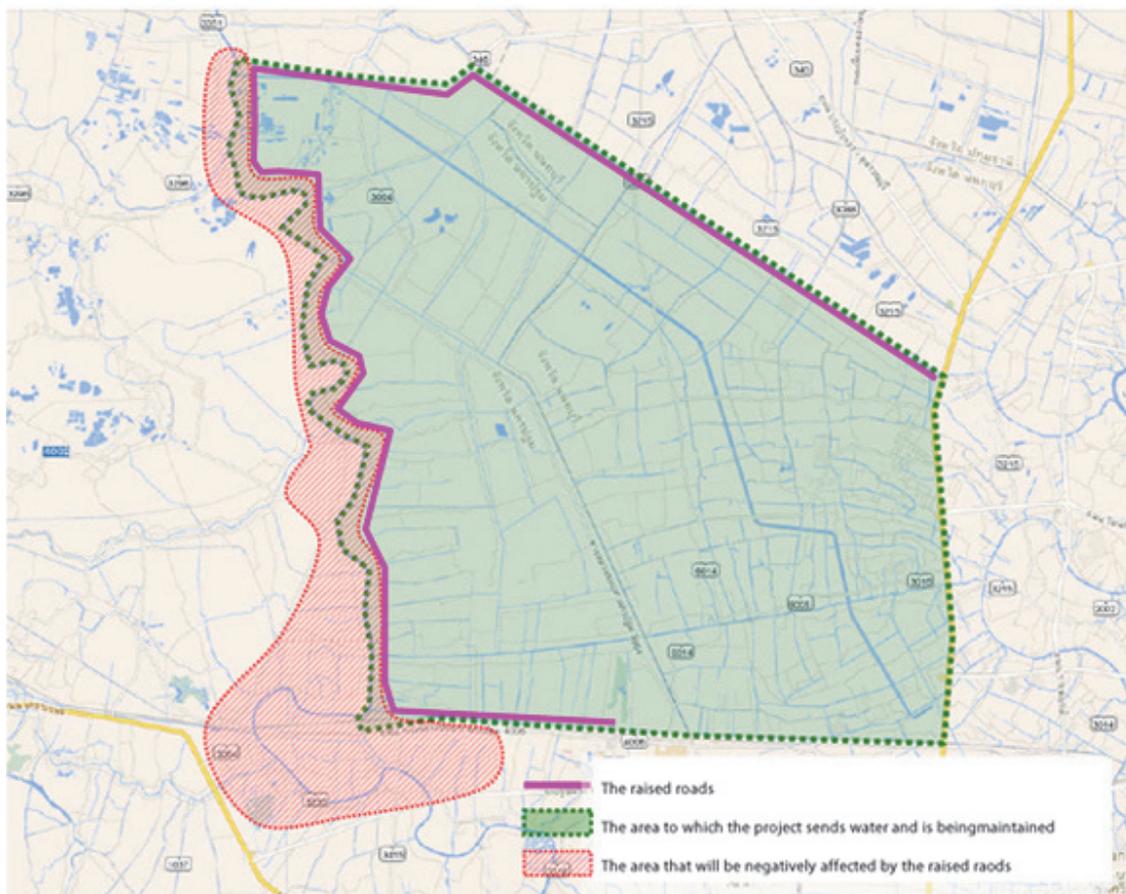
Figure 4: Map of Nakhon Pathom Province



Source: Mapsofworld.com 2015.

The military government, which launched a coup in 2014, has scrapped other projects of the previous government, particularly a lengthy floodway in Western Thailand against which civil society organizations and local communities protested, or delayed them, such as some dykes along the Chao Phraya River. While some of these dykes have been built, others have yet to be constructed, including a 29-km dyke along Pak Kret municipality in Nonthaburi Province, the second-biggest city in the BMR after Bangkok. In Pak Kret, most of the city stayed dry in 2011 after monumental efforts by the municipal government to build a temporary dyke along the river. However, a few communities outside this dyke experienced heavy flooding. After the floods, the previous government proposed to build a 29 km dyke along the Chao Phraya River but the military government has delayed the plan. A municipal officer told me in April 2015 that he thinks that the dyke will be built in the next five to ten years. The vast majority of the buildings in Pak Kret will be inside the dyke while a small minority will be outside. This dyke is the paper's second case study.

Figure 5: Map of Raised Road in Thung Pra Pimol and the Projected Affected Areas



Source: Thailand Development Research Institute 2015 (translated into English by author).

Why State Actors Built More and Higher Dykes After 2011

I return to the question of why did state actors, ranging from the national to the local level, decide to continue ‘business as usual’ and to build higher and more dykes in response to the floods despite this strategy backfiring in 2011 and despite numerous local communities and governments not recommending this strategy? As mentioned in the introduction, their disapproval is demonstrated by their answers to my questions of what should be done to prevent future floods. Drawing upon these case studies, I suggest five reasons.

First, improving land-use planning and more strictly controlling development was unfeasible before 2011 and is still so afterwards given numerous current political economy drivers in the BMR. The state has so far also not invested in green infrastructure, such as permeable pavements and parks, and retained or restored canals and natural detention basins in urban areas. It is unfeasible partially because while the Department of Town and Country Planning at the provincial level has become stricter and improved its capacity, the state’s capacity remains feeble and developers have found ways to bypass the plans. For example, according to a provincial planning officer, in Nakhon Pathom, when the five-year plan expired and the new plan had not yet passed, developers rapidly built housing estates during this gap

period because there were no restrictions in place during that time. Also, in Phuttamonthon District, because developers cannot develop 10 rai (1.6 hectares) at a time, they have developed five two-rai pieces next to each other and have found other ways, as stated by the officer, “to circumvent the law.” Likewise, in Nonthaburi Province, despite being heavily flooded in 2011, the most recent plan allows additional residential development than the previous plan did (yellow areas in the provincial plan). According to a provincial planning officer, this is because in areas such as Bang Yai and Sai Noi, which were previously green zones, developers had disobeyed the plan, “built houses here and then people moved here.” Thus these areas have become more urbanized despite planners’ intention to keep undeveloped and using them as retention areas. The provincial government handed the responsibility to each local government to restrict development in each area but some did not enforce these restrictions.

Patronage and fragmentation have also weakened and slowed down the planning process. In Nonthaburi, a provincial politician hired his friend’s company to design the most recent plan but this company had no experience in planning so the department had to scrap the plan a year later. Once these plans are drafted, they must be vetted by over 200 other agencies, thereby also delaying their passage. Last, according the Ministry of Interior gives low priority to passing the plan compared to other laws, thereby hindering its implementation.

Further, even if these plans somewhat restrict future development, there is already significant urban and industrial development in the floodplain, such as many areas in Nonthaburi and Pathum Thani. These areas have consequently become economically valuable, such as the municipality of Pak Kret. Planning laws have ‘grandfather clauses,’ meaning that the government will allow buildings which have been built before the passage of new plans but which are now inconsistent with the current plan to remain. Unlike in the US and other countries, the Thai government does not have any programs or reserved budgets to buy back land which violates city plans or are areas which face a high risk to disasters to be used as floodways and green spaces (Mekvichai 1994).

Another problem was the lack of coordination in the planning and water management sectors. Other departments sometimes do not collaborate with the planning department. For example, the planning officer in Nakhon Pathom stated that the Department of Rural Roads raised the aforementioned roads in this province without consulting or coordinating with the planning department. Another problem was that Nakhon Pathom and BMA had previously jointly designated an area as a green zone and hence a floodway, Nakhon Pathom being the northern part of the zone and Bangkok the southern part. But after 2011, seeking to keep Bangkok completely dry, BMA built a dyke along the border: the Tawee Wattana canal. This dyke has blocked the water in this floodway from flowing down from Nakhon Pathom, thereby making this green zone useful now only for storing rainwater but not for fluvial flooding.

Second, land is now very valuable in certain areas of the BMR, including those outside the King’s Dyke. This high value of land gives the government a greater incentive to allow it to be developed, collect taxes from the land, and protect it from flooding, rather than buy it and maintain it as a green space or convert it into one. For example, along Rattathibet Road in Nonthaburi Province, an area outside the King’s Dyke, previously had been farmland until the last few decades. The land along the road was converted into residential and commercial space. Any remaining unconverted private land is very valuable. According to a Provincial Council Member of Nonthaburi, who is in his 50s, when he was a child the price of the land in this area was about 2,500 Baht (\$US 74) per rai (0.16 ha) and now some patches are as high as four million Baht (\$US 59,000) per rai.

Third, the Yingluck government as well as locally-elected governments built floodwalls to please the electorate. According to a Department of Rural Roads officer, raising the roads on the northern and western outskirts of the BMR was a Pheu Thai “party policy to make people choose them during the next election. They are showing the people they are trying to fix [the flood] problem as quickly as possible.” Pheu Thai leaders sought to convince voters that they are making an effort to protect Bangkok and will prevent future flooding. Floodwalls and dykes are easy for beneficiaries to observe and they can be located in areas to target favored constituencies (Keefer 2009). Additionally, these leaders hoped that these projects would please voters by stimulating the economy, which suffered heavily in 2011.

Fourth, building floodwalls can become a lucrative source of rents: politicians can give contracts for infrastructure projects to their key supporters, or earn money from bribes, and infrastructure can increase the value of flood-protected land to owners, which exclusively benefits landowners rather than taxpayers (Keefer 2009). In 2008, Nishimatsu Construction confessed that in 2003 it gave a bribe of more than 400 million yen (\$US 4 million) to senior BMA officials in order to win the right to build a drainage tunnel project in Bangkok (Wongpreedee 2008). In the case of raising the roads in BMR, the Yingluck government not only hired engineer companies as consultants to design these projects but also contracted construction companies to carry out these projects. These companies are often owned by Pheu Thai key supporters. Further, according to a Nakhon Pathom Provincial Council Member I interviewed, these projects help enhance the alliance between politicians and certain bureaucrats. Politicians allocate large budgets to their allies in the bureaucracy who then gain prestige and opportunities to collect rents by using this budget to build these projects.

Fifth, local governments build floodwalls in response to other local governments building them upstream or across the river. As one local government head in Nakhon Pathom said, “It is difficult not to build dykes because everywhere else is doing it. If we do not do it, we will not have anywhere to provide shelter and food to victims.” This official also recognized that building dykes ad hoc “will make the situation worse. The water will come faster and harder.” However, government units do not coordinate with each other on their flood protection plans. Subsequently, once upstream units start building them, a domino effect ensues: other units build dykes as well. One instance is that once the provincial government in Suphanburi Province built dykes upstream along the Ta Chin River, government units downstream, including in Nakhon Pathom, followed suit. Another local government official in Nakhon Pathom said, “Everybody is trying to block the water from Suphanburi until down here.” One reason no coordination exists is that the Disaster Prevention Law grants power to local administrative organizations to prevent disasters.

These five factors are some of the key reasons why governments at all levels, but particularly the national one, has continued to build floodwalls in Central Thailand as a strategy to prevent flooding, despite this strategy making the floods worse and more unequal in 2011.

Why Floodwalls in These Places?

As in 2011, the state’s reconstruction efforts have created uneven exposure to future floods. The national government’s key goal is to protect Bangkok at all costs, even if achieving this goal will subject areas on the outskirts of the BMR, such as Nakhon Pathom, or above the BMR, particularly Ayutthaya, to greater flooding in the future. Deputy Prime Minister Plodprasop opined in an interview, “The water has to go somewhere and the government has chosen to protect Bangkok as the major economic driver of

GDP – consequently other areas will have to flood.” Local governments in Nakhon Pathom outside the floodwall were aware of the adverse effects of this project. According to a local government official, “Bangkok will be more protected because of this project but we are worse off. The government wants this area to flood in order to keep Bangkok dry.” The space that will be flooded in the future is that outside the roads (Figure #3). Much of this space is farmland. At the same time, by raising the road on the northern border of Nakhon Pathom at Khlong Phraya Banglue (DRR 21 & 22 in Figure 3), future floodwater will accumulate in Ayutthaya above this canal. BMA also has erected or heightened dykes along its northern boundaries, such as at Tawee Wattana canal and the King’s Dyke, so that these dykes will, BMA hopes, block the water from entering into Bangkok. A national government official who supports raising the roads asserted, “Bangkok is the heart of the country. We might sometimes have to cut off the hands to protect the heart.”

Moreover, national and local governments have placed these floodwalls in order to protect the center. This is being done at different scales. As mentioned, the national government is protecting BMR’s core at the expense of the periphery. Provincial and local governments, on the other hand, have sought to protect the inner city at the expense of the outer city. This is seen in Pak Kret where the dyke will protect most of the city but houses outside the dyke, located on the edge of the river, will likely experience greater flooding in the future. According to a local community leader here, the dyke will also make it more difficult for fishers to catch fish along the Chao Phraya River.

Third, floodwalls in the case studies have been built in these spaces due to the geography of the flood basin. The roads that have been raised in Nakhon Pathom are either along canals or near the bank of the Ta Chin River. Likewise, in other provinces, dykes have been built along waterways, especially the Chao Phraya River. However, due to the elevation and physical geography of some areas, some of these dykes have been built a distance away from the waterways, hence there are houses between the floodwalls and the waterways. Further, because the inner city of Bangkok is low-lying and below sea level, the government has built these dykes to protect this area.

Local Responses to the Floodwalls

The floodwalls in the case studies have not been built or been planned without contestations. Rather, in both cases, local groups have either opposed the planned construction of the floodwalls, or after they have been built, sought to either remove them or improve the government’s flood management. In this section, I first summarize what has happened in each case and then draw out similarities between the cases.

Case Study #1: Road Raised in Thung Pra Pimol

In order to not slow down the project, the national government raised the road stealthily without conducting an environmental impact assessment (EIA), even though it should have done so according to the 1992 Conservation of National Environmental Quality Act. According to the Department of Rural Roads officer, it was able to avoid doing this by dividing the project into four separate smaller projects (DRR 24-28 – see Figures 3 and 4 for visual representation), each short enough in length so that legally an EIA was not required. A local government official in Salaya complained, “They didn’t tell anybody before raising the road.” While the government did conduct limited public hearings (but not in Salaya), it

did so only after the project had already been started and invited only people who lived inside the road to attend. Those in charge of the project instructed the Department of Rural Roads, the agency who raised the road, to neither invite on the other side to the hearing nor “tell them that it will flood more here” According to an officer in this agency, “if these people protested or opposed the road, the government would have blamed us.” He added that even though some officers like himself disagreed with this project but they still followed the government’s orders because “during that time politics was strong so people here in this department could not publicly oppose the project even though they do not agree.”

He was not only the government official who disagrees with this project. An officer in the Nakhon Pathom provincial Department of Town and Country Planning likewise believed that this project is a bad idea, stating:

“It is built against nature . . . The eastern area is lower than this area. By blocking the water from not going into Bangkok on the East, it is planned to protect overflow from river. But what about rainfall? If it rains on the eastern side, it will be stuck. The area is very low. They should have another canal to release the water. If they want to block the water, they should have better water management – like a canal or floodway.”

All of the eight local administrative organizations (tambons) outside the road whom I interviewed during April-May 2015 believed that the project would make flooding worse in their areas and most disagreed with the project. This area had flooded heavily in 2011 and they were worried that it would flood heavily again in the future because of the dyke. For example, one tambon head said, “Now there is less room for water to flow. The road will be another cause of flooding.” Another added, “The dyke is not necessary. It’s only one solution which might not work.” In the one tambon which the road cuts through, the tambon head agreed that the road would make flooding worse for those on the outside. However, he said that some of these people were misinformed and thought that the road would make protect them from flooding. They also complained that because the road was so high, it was difficult for some houses to access it. The tambons agreed that the road would be a useful route on which people could drive and the government could provide relief during floods. One person in the province who defended the project was the unelected deputy provincial governor. He claimed, “if the road is used for 50 years, for only one year it is bad.”

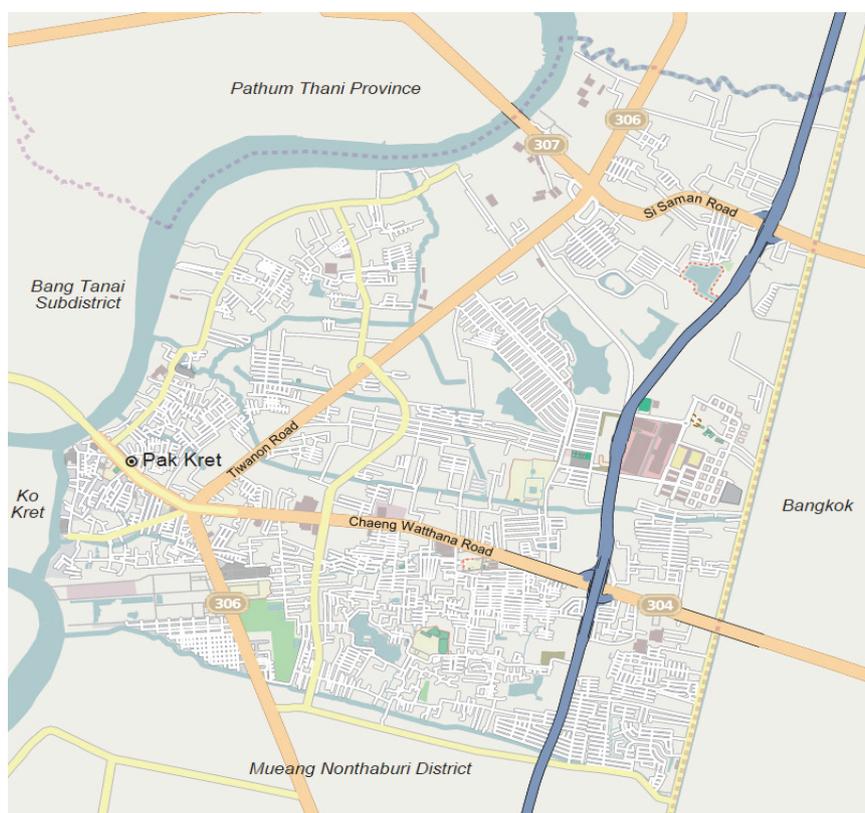
Most of these tambons felt powerless to oppose the project. For example, the head of one said, “The project comes from the central government. We cannot do anything much. We have to receive whatever they order.” However, led by some of the same civil society leaders who opposed the Yingluck government’s proposed Western floodway, local government leaders and civil society activists have publicly expressed opposition to the road. In a meeting of about 70 community leaders and activists in early 2015, they spoke against the project and many signed a petition complaining about the road. They submitted it to the military government which has so far not given any response to the petition. According to one of the group’s leaders, “We cannot do much now because the project is already done.” They do not want to raise the road because that would cost a lot of money. However, another group successfully lowered the height of the road. Along Khlong Rapeepat, the border of Ayutthaya and Pathum Thani, a group in Ayutthaya who would be negatively affected by the road, sued the Department of Rural Roads. In the end, according to the department of rural roads officer, the two sides compromised and the Department of Rural Roads lowered the road by 50 cm.

One tambon head did not sign the petition and did not criticize the project. He asserted, “It is no problem to raise the road because it is an industrial and economic area [inside the road]; we understand

that this will be a flood zone but we need a compensation scheme for our agricultural products.” All of the leaders, regardless of whether they agreed or disagreed with the project, however, beseeched the government to provide a fair and transparent compensation scheme. Some people in these areas have sold their land because they are worried about future floods and do not know whether they will be compensated. They stated that the compensation was not fair in 2011 so it needed to be better in the future. They also requested that the government improve its flood warning system because it provided contradictory and confusing information in 2011.

Case Study #2: Pak Kret

Figure 6: Map of Pak Kret Municipality



Source: Openstreet.org 2015.

From interviews with a dozen community leaders and government officers, the majority of those living in Pak Kret agreed with the construction of the dyke. They believe that it will prevent flooding in most of the city. One community leader pronounced, “My community does not have a problem with the dyke. The government should build the dyke along the river.” Another echoed his support for the dyke, “Most people are happy with the project. It will help not only for flood but also for erosion protection. It will stop houses from being destroyed.” Two of them said that about 80-90% of participants in public hearings on the dyke expressed support for the project. One leader said that those who disagreed with the dyke should change their mind, “They should think about benefits for the entire community. The world is

changing.” The municipality’s head of public works also supported the project, arguing that it would protect most of Pak Kret from future flooding and would save the municipality a lot of time and money because it would no longer have to build temporary dykes annually during the rainy season.

Reflecting the uneven split in public hearings on the dyke, a minority of interviewees opposed the project. They were the community leaders who would be outside the dyke. One leader said, “We are not happy with it. We are frustrated that we will only see the wall behind them and instead of seeing the nature and think it will be harder to get inside our houses.” Another added that there yet to be an impact assessment or studies on the dyke. Consequently, she said, “People here are still scared of what will happen – such as if the dyke collapses and then water will be stuck here.” She believes that it would be better if “the water comes naturally, will increase naturally and will decrease naturally.” She also lamented that the community does not care about the fishers who would be adversely affected because fishing “is perceived as an older generation job, not a new generation job.” In her community, 20 people signed a petition opposing the dyke. A Nonthaburi provincial leader also disagreed with the project because “other areas [in Nonthaburi] will have more work to prevent floods.”

Similar to the situation in Thung Pra Pimol, people who lived outside the temporary dykes did not receive enough compensation to cover their damage. For example, in one community the average loss was 60,000 Baht (\$US 1,800) but they received only in average 25,000 Baht (\$US 740) in compensation. Some people were upset about this. Communities outside the proposed dyke therefore requested that they receive adequate compensation in the future.

Similarities between These Responses

While the floodwalls in the case studies have been or are planned to be built in different locations in the BMR, by government agencies at differing levels—the national and municipal level—and different groups oppose them, a number of similarities between them exist. First, they have been planned or built in an autocratic and non-participatory manner. While the government held a public hearing in Nakhon Pathom, it had already decided to build the project. Further, agencies have yet to conduct any EIAs for these projects, suggesting that the projects’ proponents have decided to proceed with the projects quickly without fully examining these projects’ impacts on the environment.

Second, these cases suggest that decentralization is incomplete. In these cases, the central government is more powerful than provincial and local governments who oppose the projects but feel powerless. Even at the national level, government agencies, such as the Department of Rural Roads and RID felt compelled to follow the orders of the national leaders even if they disagreed with them.

Third, relatedly, it is more difficult to oppose these projects once they have already been built. While activists and local government leaders in Nakhon Pathom and neighboring provinces were able to successfully halt the planned Western floodway, they have so far been unsuccessful to change the location or height of the road after it was built. One local government leader declared, “Whether we accept the road or not, it has already been built. We cannot say anything.” Leaders of those opposed to the project believed it would be too costly to raze the road.

Fourth, in both cases, the effects of the dykes in terms of future flooding are likely to be uneven. The losers are the periphery of society, both geographically and socioeconomically. In case 1, they are mostly farmers who are located on the outskirts and live in the least economically valuable part of the BMR. In the other case, they live in the outskirts of a city. In all cases, they are lower or lower-middle

class Thais and, since they have the limited assets and access to power, are highly vulnerable to disasters. However, not all of these victims have been passive. Instead, some have protested, signed petitions, and sued the governments.

The winners are those who live or work in the urban centers, which in these cases are mostly the middle class and the elite. For example, Muang Thong Thani, a complex consisting of an arena, convention center and exhibition hall in Pak Kret, stayed dry in 2011 and will be protected by the propose dyke. Likewise, the inner city of Bangkok stayed dry in 2011 and the raised roads were built with the goal of protecting the inner city again in the future.

Conclusion

This paper has provided a political ecology analysis of the Thai state's response to the 2011 floods in Central Thailand. To be able to understand the response, it is first necessary to understand the discourses used by key state actors to describe the causes of the floods. Rather than blaming the flooding on an overreliance on flood-control infrastructure, poor land use, and mismanagement in 2011 (see Marks 2015), they blamed the floods on nature and too much water and the encroachment on waterways. Government actors at all levels decided to build back Central Thailand by constructing more and higher floodwalls. They did this for five reasons: their view of the unfeasibility of land use control, the high value of land in some areas of the BMR, their attempt to please the electorate, the opportunities they saw for patronage, and a response to other government units building floodwalls upstream. Government agencies chose locations for these floodwalls that would enable them to protect urban centers, either at the regional or at the municipal level. They claim that these projects are necessary because they will protect spaces that are more valuable economically.

A number of groups who are located on the periphery of society and who will bear the costs of these projects have opposed them. However, in most cases they have so far been unable to bring about significant changes to the projects or plans for them. Rather, the more powerful government agencies, particularly leaders at the national level, have succeeded in pushing through these projects that mainly protect the interests of the elite and urban middle class, revealing clear instances of environmental injustice. In Thailand's flood control projects, all three types of injustice occur. First, the floodwalls will create uneven exposure to future floods, a distributive injustice. While the Thai government has installed more water pumps and dredged some canals, these actions do not significantly reduce the risk of flooding to communities residing outside the walls. Instead, as both government officials and local community leaders believe, these communities will be exposed to future flooding, particularly those located outside the raised roads and the dykes along the Chao Phraya River. Further, when floods occur, these communities will have to bear the costs of renovating their houses, of lost income from not working, and of buying relief supplies and new possessions, while urban centers will remain dry. One local community leader demanded that people living in the center should pay a dry tax that would compensate people living in outlying flood zones. Second, these communities have suffered unequal access to the decision-making process. Some have not been included in public hearings and their inputs have not been included. Last, these groups have been discriminated against and not recognized. One local government leader in Nakhon Pathom lamented that the national government cared more the interests of those living in Bangkok, declaring, "Bangkok is an economic center but . . . this side is an agricultural area – people in Bangkok rely on people outside to eat . . . We are Thai people too."

Injustices also occurred in 2011 as a result of the state's response during the floods. The state prioritized the interest of the elite over the most vulnerable. Power structures determining inequality and injustices in the city and privileging certain actors, strategies, and discourses over others had not changed much after the floods. On the other hand, while there was no tipping point, the floods acted as a catalyst for some groups to contest these structures. Groups in Nakhon Pathom and neighboring provinces were able to stop Pheu Thai's proposed floodway in the western part of the Chao Phraya floodplain which would have further created uneven vulnerabilities to future floods. Less positively, they have not been able to stop most of the projects discussed from proceeding.

The Thai government, at both the national and local level, has reacted in a manner similar to that of many other governments worldwide. By building these floodwalls, these governments are protecting urban economic areas which have more value while exposing farmers, fishers, and rural populations, raising questions of justice and inequity. While such decisions might seem fair from a distributive perspective in terms of assets, not only do they clearly fail the tests of procedure and recognition but also the solution does not have to be the future flooding of one group and protecting another. Instead, alternative solutions to a complex problem, such as not building these dykes, could be done. Additionally, concerns wider than short-term flooding prevention should be considered, such as rural livelihoods and climate change (Marks 2011). But instead, due to power structures and political interests of those at the top of the structure, they not been considered and a simplistic solution has been done or proposed to benefit a few without consideration of the projects' long-term effects on vulnerability. Future research analyzing the justice of floodwalls built in other urban areas from a political ecology perspective would be helpful to see whether a broader pattern of decision, contestations and injustices have arisen.

Note

Quotes are from interviews conducted by the author with community leaders, government officials, and activists from January to May 2015.

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สถาบันวิจัยเพื่อการพัฒนาประเทศไทย (ทีดีอาร์ไอ)

565 ซอยรามคำแหง 39 เขตวังทองหลาง กรุงเทพฯ 10310

Thailand Development Research Institute (TDRI)

565, Soi Ramkhamhaeng 39 Wangthonglang,
Bangkok 10310 Thailand

Tel. 02-718-5460

Fax. 02-718-5461-2

Website: <http://tdri.or.th>