

# **Institutions and Institutional Change in Land-Use and Flood Management in the Lower Chao Phraya River Basin in Thailand**

## ***Executive Summary***

### **Introduction**

Since the 2011 flood in Central Thailand, a wide range of structure-based solutions have been proposed to prepare for future deluges. But structural interventions alone cannot bring about successful outcomes in coping with extreme weather events induced by climate variability and uncertainty. The effectiveness, efficiency, and equity of flood management depend on the efficacy of land-use planning. Meanwhile, institutions are important, as they govern decisions on land-use and water consumption and management that would affect policy outcomes and the eventual impact on households and industries. Such institutions include: (1) operational rules govern the day-to-day actions dealing with the resources, including appropriation, provision, monitoring, and enforcement; (2) collective-choice rules that govern operational rules, including policymaking and developing master and action plans; and (3) constitutional rules, which decide who and what procedure to use to change collective-choice rules.

Non-structural solutions to flood management also require collective adaptation, which in turn necessitates institutional change, because collective action is required of stakeholders to adjust their behaviors in a coordinated fashion. Exogenous shocks may trigger institutional change. As such, an extreme weather event with a catastrophic level of damage, such as the 2011 flood, could potentially trigger institutional change for collective adaptation.

As part of the project “Improving Flood Management Planning in Thailand,” we examine the issues of land-use institutions in the context of flood management in the Chao Phraya river basin. Two key premises underlie our research: (1) any effort to improve water and flood management requires improvement in the institutions that govern land-use decisions and collective adaptation, and (2) exogenous factors induce institutional change. Based on the premises, the overall research question is: Since the 2011 flood, to what extent has there been institutional change for collective adaptation with regard to land-use and flood management?

### **Research Methods**

Our primary method of inquiry takes a comparative case study approach, with three case study areas in the Lower Chao Phraya river basin. In addition to documentary review, we conducted a questionnaire survey of 63 local governments and a series of focus groups, in-depth interviews, and citizen dialogues with key informants. We also conducted three scenario-based workshops, in which select stakeholders were asked to envision possible future land-use patterns in their respective areas.

Each of the case studies represents a different geographical scale, land-use and settlement patterns, flood management problems, and institutional issues in land-use and flood management. The first case of Bang Ban in Ayutthaya Province is characterized by a mixture between rural and peri-urban land-use patterns, and is annually affected by flooding. The second case of Bang Kadi in Pathum Thani Province is a suburban and peri-urban area of Bangkok, which is particularly vulnerable to natural disasters due to rapid land-use changes and inadequate planning control. The case study is unique in that the private sector plays an important role in promoting local partnerships for flood prevention and mitigation initiatives. The third case of the Bangkok Metropolitan Region highlights inadequacies of the Thai spatial planning system at the regional and national levels, which obstruct the integration of land-use and water management.

## **Findings**

### **Structure-based solutions still dominate**

We find limited shift in interest and attention of the government from structural to non-structural solutions and to institutional approach to flood preparation and management. Non-structural solutions have been discussed, but none is adopted, not to mention those involving land-use control such as floodways and floodplains. One key reason is the serious gap between mandate and capacity of local governments in respect to land-use and water management.

The key lesson from the scenario-based workshops is that certain institutional obstacles loom so large that they prevent stakeholders from even envisioning alternative land-use futures that are distinctively different from the current ones. The method to facilitate stakeholders' deliberation through land-use scenarios could only be effective when put into a regional or river-basin-wide context and with some possibility of institutional change.

### **Some collective action for flood mitigation**

Volunteer groups assisted in various activities before and during the flood, particularly the Civil Defense Volunteer and Village Health Volunteer groups. Both types of volunteer groups are established with specific legal frameworks, which allow the volunteers to receive monetary compensation and other rewards. This indicates the role of formal institutions in establishing and promoting local networks of volunteers for specific collective activities.

After the 2011 flood, almost all localities developed flood prevention and mitigation plans. Many local governments have set up committees for such plans, indicating institutional development and changes at both operational and collective-choice levels. But there are no changes at the constitutional-choice level, because there have been no major legal or policy changes that would form new institutional bases for collective-choice institutions. The change is also confined within the realm of flood management, not covering land-use institutions.

### **Signs of household adaptation but limited collective adaptation**

There are signs of flood-induced adaptation at the individual and household levels, but little collective adaption for long-term solutions. Most communities have evacuation plans and designated safe havens, but none in the case studies has developed or implemented additional land-use controls that aim to prevent or mitigate future floods. While adjacent local governments have existing collaboration in regard to flood management, the partnerships are confined to year-to-year preparation for seasonal floods. There is limited discussion on long-term planning that deals with settlements and land-use issues.

### **Lack of institutional capacity for systemic adaptation**

Collective and systemic adaptation requires institutional capacity. Due to the decentralization policy, local governments now have legal and administrative authorities to develop their own Comprehensive Plans with zoning regulations. But most local governments do not have enough budget and capacity for land-use planning and controls. So they continue to rely on provincial planning offices to develop land-use plans on their behalf.

### **The limit of informal partnerships**

Bang Kadi represents a case in which the private sector could play significant and successful roles in promoting partnerships with the local communities and governments in flood prevention and mitigation. But the existing institutions based on mutual understandings and relationships cannot deal well with newcomers. Even though some institutions and processes could be built among local

stakeholders, there are limits to them. Such partnerships may not allow for long-term and wide-scope interventions as in the case of land-use planning. Moreover, institutionalization from the bottom tends to be locality-specific, so they are not conducive to dealing with issues that transcend boundaries. Any interventions that aim to rearrange land-use patterns to prepare for possible floods may have to rely on the authority and coordinating instruments of the national government.

### **Limited set of measures to control land-use density**

The case studies also indicate a serious lack of regulatory measures to control land-use intensity. Zoning regulations under Comprehensive Plans may already include the control of land-use types, but they do not include a fundamental measure that controls building density. Without fundamental measures such as bulk controls, an integrated land-use and water management plan is of limited use, because land development can still occur in inappropriate locations at undesirable density levels.

### **Institutional inadequacies at the structural level**

Despite the scale and scope of the damages caused by the 2011 flood, there is still very little institutional change at the regional and national levels that aim to integrate land-use planning and flood management. The key institutional problems include:

- Lack of policy frameworks and statutory plans at the national and regional levels;
- Lack of organizations with statutory authority to implement regional plans;
- Institutional fragmentation and overlapping functions among national agencies dealing with land-use and water management; and
- Limited participation in planning processes. The networks of citizen groups on water resources and flood issues do not involve in land-use planning activities.

### **Conclusions**

The findings confirm our hypothesis that the current institutional set-up that governs land-use decisions in Thailand is not conducive to integrating land-use planning into water and flood management. Despite some adaptation at the household level, there is limited institutional change at the collective levels even after the 2011 Great Flood. Most institutional changes were primarily aimed at short-term flood prevention and mitigation, with little change that would affect medium- and long-term decisions on land use.

Because institutions that govern operational and collective-choice rules are based on constitutional-choice rules, the limited institutional change in land-use and water/flood management could be attributed to the prolonged political uncertainty and intense political climate in Thailand. Nonetheless, an extensive number of interventions should be pursued to overhaul the land-use planning system here. A few of them deserve immediate attention and action, as follows.

- A national policy framework for spatial planning should be developed in a comprehensive and integrated manner;
- A new office under the Office of the Prime Minister should be established to take charge of the process of developing the policy framework and associated watershed-based regional and national spatial plans, and to oversee, monitor and evaluate their implementation;
- A Parliamentary committee on land-use planning and water management should be established to put forward substantial legal changes; and
- Increase deliberative activities in the planning process, and promote inclusion of the existing networks for flood prevention in the participatory process of land-use planning.