EFFECTS OF LOCAL CULTURES ON THE TERRITORIAL MANAGEMENT OF FLOOD RISK AREAS IN THE BANGKOK METROPOLITAN REGION

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Keywords: local cultures, flood risk management, Bangkok Metropolitan Region (BMR)

This paper examines the applicability and limitations of the proposed analytical framework. The framework was developed to facilitate an analysis of territorial development processes taken culture as an important element shaping planning processes and spatial outcomes. Five main principles underpin the proposed analytical framework are the concept of social-ecological system (Folke *et al.* 2005), culture-changing dynamics (Gullestrup 2006), Institutional Analysis and Development framework (Ostrom 2005), five dimensions of cultures (Hofstede and Hofstede 2005) and cultural theory (Thompson *et al.* 1990). The analysis of territorial development of the Bangkok Metropolitan Region, with special emphasis on the impacts of local cultures on policy initiatives and spatial outcomes in relation to flood risk management in the region, is taken as an example for investigation. The analysis shows that despite its potential subjectivity resulted by heuristic interpretation, the proposed analytical framework tends to be a promising approach.

INTRODUCTION

Planners and policy makers have recently increased their concerns regarding effects of climate change on sustainable development of urbanised delta regions, in which approximately half of the world population lives and works (Aquaterra 2009). Flood risk management is an essential issue for development of these sensitive urbanised areas. Reformation in territorial management has been informed by transfers of technology, knowledge and policy to deal with common problems. Nevertheless, previous experiences have shown that applying a successful policy from one case to others do not always produce successful outcomes (Friedmann 2005; de Jong *et al.* 2002). Many scholars have argued that development processes are shaped not just by development plans and policies, but also significantly by local conditions, including cultures (Friedmann 2005; Ostrom 2005).

In order to improve territorial development goal achievement generated by transferred policies, developing notions on dynamics of cultures and their roles in shaping territorial development through planning and implementation processes appears to be of great importance. An understanding of such issues can be

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enhanced through a systematic analysis of territorial development processes from a cross-cultural comparative perspective. A number of studies address crucial roles of planning cultures in territorial development processes (Knieling and Othengrafen 2009; Sanyal 2005). Knowledge of such issues regarding cultures in a broader sense than just planning cultures is, however, still limited.

This paper is a working paper as part of a PhD research project *Dynamics of Cultures and Territorial Management of Urbanised Delta Regions* that aims to provide a systematic analytical framework and methods to take cultural dimensions into account for policy analysis. The study takes territorial development regarding flood risk management as a pioneer aspect for analysis. The paper explores the applicability and limitations of the proposed analytical framework to explain actual phenomena through an empirical analysis. Effects of cultures on the territorial development outcomes regarding flood risk management in the Bangkok Metropolitan Region (BMR) are investigated, using the proposed analytical framework.

The paper is divided into four sections. The first section summarises the proposed analytical framework by explaining the main components and their place in the institutional transformation processes. Section 2 provides a background of the BMR along with introducing the three periods of analysis. Section 3 investigates the territorial development processes, focusing on aspects relating to flood risk management in the BMR, in three periods of development. The last section addresses the applicability and limitations of the proposed tentative analytical framework resulted from the empirical testing.

1 THE PROPOSED ANALYTICAL FRAMEWORK

The analysis is carried out from planners and policy makers' point of view to understand the places and roles of cultures in development processes, focusing on influences of informal institutions on shaping development policies (formal institutions) and spatial outcomes. The term *institutions* in this paper refers to a broader meaning than just organisational forms. It refers to 'the prescriptions that humans use to organize all forms of repetitive and structured interactions at all scales' (Ostrom 2005: 3).

The proposed analytical framework is underpinned by five main theoretical frameworks, which are a concept of social-ecological system (Folke *et al.* 2005), culture-changing dynamics (Gullestrup 2006), Institutional Analysis and Development (IAD) framework (Ostrom 2005), five dimensions of cultures (Hofstede and Hofstede 2005) and cultural theory (Thompson *et al.* 1990).

1.1 Structure of the Analytical Framework

The proposed framework (see Figure 1) combines two building blocks for two action situations that interact, which will be called hereafter as 'planning situation' and 'implementing situation'. Each building block consists of three main components, namely conditioned factors, action arena and outcomes. The framework represents dynamic processes, with all components performing as dependent variables.

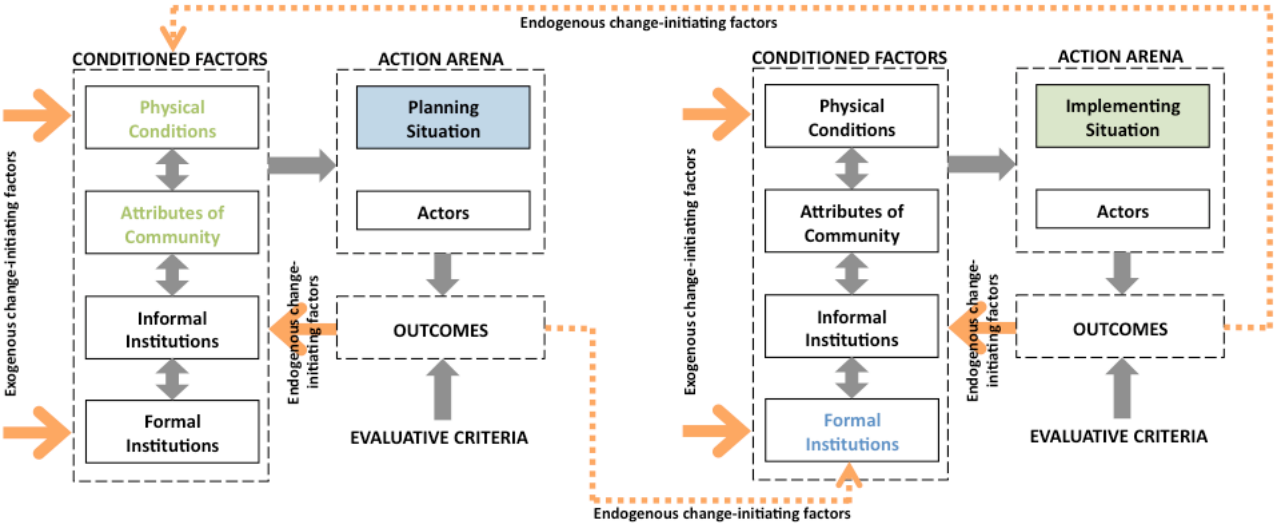

Figure 1 Structure of the proposed analytical framework

The structure of the proposed analytical framework is based on the Institutional Analysis and Development (IAD) framework developed by Ostrom (2005), with some modifications. The major modification is made to the so-called exogenous variables in the IAD framework, which is replaced by the term '***conditioned factors'*** in this paper. The three elements of the exogenous variables are reclassified into four elements: physical conditions, attributes of community, informal institutions and formal institutions. This reclassification results from the integration of the IAD framework and concepts of culture-changing dynamics developed by Gullestrup (2006) to fit the research's purpose.

Physical conditions refer to attributes of the bio-physical and material world of the resource units (Ostrom 2005) - which are, in this case, land and water (in the sense of flood) of the urbanised delta regions. *Attributes of community* refer to Gullestrup (2006)'s 'difficult-to-perceive structural layers', which include social, economic, political & administrative and language & communication structures. *Formal institutions* refer to Gullestrup (2006)'s formalised layers of norms and rules, such as legitimised regulations, instructions, precepts and principles in a form of rules, laws, constitutions and contracts. This includes legitimised rules and laws that regulate the forms of structural layers. These three elements are called in Gullestrup (2006) as manifest culture layers. All layers of Gullestrup (2006)'s core culture layers are considered in this study as *informal institutions*. This includes worldviews and general accepted values and believes, both in partly legitimised or non-legitimised forms.

Conditioned factors are significant variables that structure or condition the action arena. They are continuously changing, influenced by either endogenous or exogenous change-initiating factors or both (Gullestrup 2006). In this study, exogenous factors refer to the driving forces generated or conditioned by agencies or factors outside a given territory, with special focus on technology, knowledge and policy transfers. This includes both voluntary and imposed transfers. Endogenous factors refer to all the changes or

conditions generated by local agents or local conditions, including effects induced by exogenous factors that turn to local conditions. Examples are changes in social class and discourses generated by economic development or political shifts. Despite of their dynamics, the conditioned factors are assumed to be constant within a certain period of time. This is for the purpose of analysis (Gullestrup 2006).

Action arena refers to activities created by actors in the action situations (Ostrom 2005). As mentioned earlier, there are two linking action situations in this case. The outcomes of one action situation lead to changes in the conditioned factors of another situation (see Figure 1). *Planning situation* refers to processes of policy preparation, whereas *implementing situation* refers to processes of policy implementation. In this study, actors are classified into four main groups: providing agent, intervening agent, affecting agent and monitoring agent. Some situations may not comprise all groups of actors.

Outcomes are identified according to the resource systems and units together with the governance systems and users for the analysis. The outcomes are evaluated by evaluative criteria, which in turn effect the adaptations of the conditioned factors and action arena (see Figure 1). Examples of evaluative criteria are efficiency, equity and adaptability. It is important to be clear which group will evaluate the outcomes from which perspective. This is because evaluative criteria may differ between actors.

When outcomes are evaluated by the involved actors as productive or positive, they may increase their commitment to following the institutions that have evolved over time; institutional transformation takes place as a way to change the structure of the situations in the action arena when the outcomes are evaluated as destructive or negative (Ostrom 2005). This refers to changes created by endogenous change-initiating factors. Institutional transformation sometimes occurs due to other reasons, such as, the imposition of a powerful actors. This refers to changes created by exogenous change-initiating factors

1.2 Analytical Approaches and Parameters

Territorial development in this context is considered as a result of the complex and dynamic institutional arrangements of interconnected social-ecological systems in a given territory. This study, therefore, applies two approaches for analysing of governance, which are in terms of human-nature relationships and human-human relationships. Each approach consists of different sets of parameters. Each parameter is analysed and interpreted using common set of cultural dimensions, basing mainly on the combination of Douglas (1970) and Thompson *et al.* (1990)'s cultural theory and part of the Hofstede (2005)'s five dimensions of cultures. This is to make the parameters comparable. The study applies only three dimensions of cultures, which are power distance, integration and uncertainty avoidance.

The *power distance* (PD) indicates degree of control of a unit in the system over others, ranging from symmetrical to asymmetrical transactions. The *integration* (In) indicates level of contact between units in the systems, ranging from individualised to collectivised relationship. The *uncertainty avoidance* (UA) refers to

degree of (in)tolerance of ambiguity, ranging from tolerance to intolerance. The application of these dimensions still requires great efforts for further development. Some tentative applications are, however, proposed and explained along with parameters as shown in Table 1.

Table 1 Summarised parameters and their cultural dimensions for analysis

	Human-nature relationships (H-N) - resource management -		**Human-human relationships (H-H)** - social organisation -	
	Parameters	*cul.dime.*	*Parameters*	*cul.dime.*
Physical conditions	Land: topography, soil type, settlement patterns and urbanisation level (population size and density) in terms of limitation, opportunity and risk for development in relation to flood risk Water: characteristics of rainfall, rivers and sea in terms of degree of severity, uncertainty and probability of flooding		Characteristics of land and water in terms of excludability and subtractability of flow: for instance, as public goods, common goods, club goods or private goods	
Attributes of community	Civil society and private sectors: GDP and employment by sectors Public sectors, governments and lobbyists: involving departments and their funding	PD, In	Relationships between social groups and their positions in the community, presenting in accordance to the 2D diagram of (Thompson *et al.* (1990)'s *Cultural Theory*	PD, In
Informal institutions	Conceptions of H-N: principles in religious, rituals, idioms, agricultural practices, meanings given to some terms such as flood	PD, In, UA	Conceptions of H-H: social and economic model of the society, idioms, the principles in religious and language	PD, In
Formal institutions	Legitimised rules, laws, constitutions and contracts relating to land use, flood risk, water and environmental management	PD, In, UA	Legitimised rules, laws, constitutions and contracts relating to land tenure/ownership	PD, In
Development outcomes	Planning Situation: same as the formal institutions Implementing Situation: patterns of land utilisation and land value	PD, In, UA	Planning Situation: same as the formal institutions Implementing Situation: patterns of land tenure/occupation	PD, In

Apart from actors, all parameters are identified in accordance to the two approaches of analysis. Parameters for planning situations and implementing situations are separately identified if they are different; otherwise it means they are similar. Formal institutions between both situations are generally the same set of institutions. Development outcomes of planning situations are basically formal institutions of implementing situations.

1.3 Institutional Transformation Processes and the Change-determining Factors

In this study, an analysis of institutional transformation determination is mainly applied from a concept of culture-changing dynamics developed by Gullestrup (2006). The term 'cultures' in Gullestrup (2006) is interchangeable with the term 'institutions' in this context. Gullestrup (2006) addressed that institutional changes are driven by change-initiating factors, but whether and to which direction that changes will actually occur depends on change-determining factors. Actual changes refer to changes that take effects to a broad scale in a society across actors and across levels of institutions. In this study, whether a real culture change does take place is evaluated from reflections of the change initiatives (emphasising on changes in formal institutions) in spatial outcomes.

The probability of actual culture change/institutional transformation (P.CC) is determined strongly by the relationships amongst four factors, which are degree of integration (DI), degree of homogeneity (DH), contents of change-initiating factors (CiF) and culture-internal power relations (CIPR), as shown in Figure 2 and Figure 3. Figure 2 indicates two different P.CC values at a given combination of DH and DI, influenced by two other factors, which are explained as follows.

The probability of actual institutional transformation is first determined by *degree of homogeneity* (DH). It presumes that a community associated with more diverse knowledge, experience and practical skills will provide more chances for change initiatives to penetrate into and reach a stage, where actual institutional transformation can (but may or may not) take place (Gullestrup 2006). Degree of homogeneity can be assessed from analysing attributes of the community. If the community is greatly uniform, the content of the change-initiating factors (CiF) have to be tailor-made to fit the existing attributes of the community (Gullestrup 2006); otherwise the change initiatives will be rejected from the community.

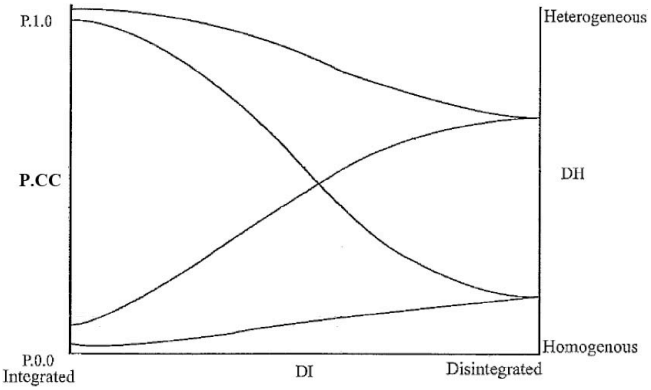

Figure 2 A theoretical relational diagram of change-determining factors

Source: Modified from Gullestrup (2006: 145)

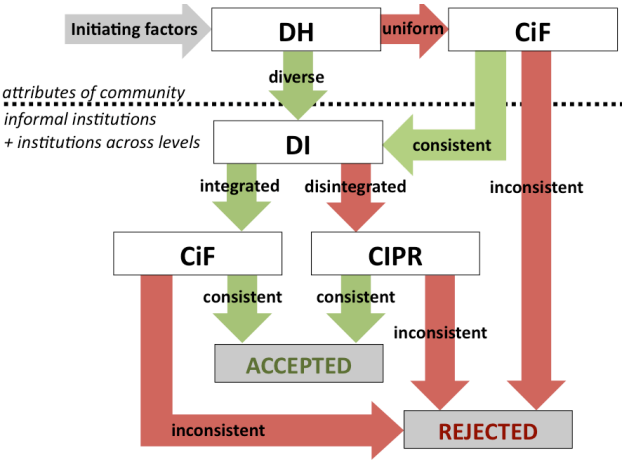

Figure 3 A relationship diagram of four determining factors and their impacts on institutional transformation

The next step is to analyse *degree of integration* (DI) in terms of (i) integration of informal institutions across actors and (ii) logical reflections across levels of institutions. The more integration the cultures/institutions, the higher tendency the institutional transformation will take place to react, either positively or negatively, towards the change-initiating factors (Gullestrup 2006). Positive or negative reaction crucially corresponds with the CiF. The higher corresponding between the CiF and the existing institutional settings, the higher probability is that positive reactions can be expected (Gullestrup 2006), and vice versa (shown in Figure 2 as the above line and the underneath line accordingly).

If the existing institutional settings are highly disintegrated, it is then essential to consider culture-internal power relations (CIPR). CIPR refers to power of a specific group to determine changes over other groups in the community. The decisive factor in a highly disintegrated condition is degree of integration of the change initiatives to the existing institutions of the most powerful actors.

2 SIGNIFICANT SHIFTS OF TERRITORIAL MANAGEMENT IN THE BANGKOK METROPOLITAN REGION

The Bangkok Metropolitan Region (BMR) is located on the lower delta of the Chao Phraya River Basin, where the river meanders through the city and extends to the gulf of Thailand. Its territory is defined in accordance to the administrative boundary, covering six provinces: Bangkok Metropolis, Nonthaburi, Pathumthani, Samutprakan, Samutsakhon and Nakhonpathom (see Figure 4). Since Bangkok was established as the capital of the kingdom in 1782, a small commercial community covering an area of 4.14 km^2 (BMA 2009) has developed into a large diversified and growing industrial metropolitan region. The BMR now covers an area of 7,761.50 km² and accommodates more than 10 million people (BMA 2009). The region has continued to expand its connection to other more peripheral provinces, particularly to the north and the east within the distance of 80 km from the Bangkok CBD since 1990s, and consequently formulating the extended BMR.

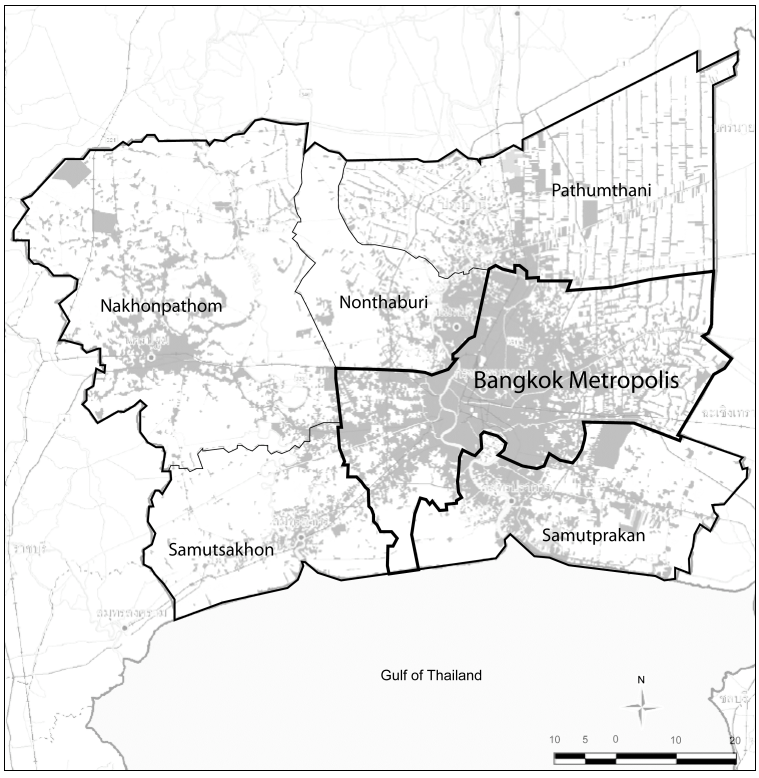

Figure 4 Administrative boundary and settlements in the Bangkok Metropolitan Region in 2002

Source: Reproduced from the map provided by the National and Regional Planning Bureau, Department of Public Works and Town & Country Planning – DPT (2008)

The traditional Thai social and territorial organisations had been maintained until around the turn of the nineteenth century. This includes the decentralised structure of social organisation under the absolute monarchy and the Thai traditional economy, which was based on subsistence economy. Radical shift of the Thai social and territorial development started in the mid of the nineteenth century, underpinned by the development objectives to modernise the country and the liberalised trade agreements first signed in 1855 with the United Kingdom, followed by many other countries.

This resulted in a shift of the Thai economy from subsistence to export-oriented agricultural economy integrating into the world market, and consequently the expansion of land reclamation for rice production further a field, especially into swampy lowlands. The modernisation of the country included changes in administrative structure, social structure as well as political structure. Many strategies for territorial management and regulation were introduced. The society dramatically adapted to the new conditions for development through institutional arrangements. Impacts on spatial development, resulting from these changes were not evident in this period; it became more apparent in the following periods, soon after the World War time.

After World-War II, the country experienced another significant shift in institutions, driven by three main forces: (i) financial and technical aid from international agencies, such as the World Bank and the Asian Development Bank, (ii) dramatically increasing investment of Sino-Thai communities due to political changes in China and (iii) induced effects from the money spent by the American Army, which had military camps in Thailand during the Vietnam War. These factors initiated a rise of middle class with a high purchasing power, changing life styles of urban families and an influx of rural immigrants drawn by economic development in Bangkok. These effects were important factors driving rapid urban expansion in the BMR stared in the 1970s, including the expansion to the former swampy lowlands initially reclaimed for agricultural purposes.

The third significant shift occurred in the 1990s. This stated clearly first time in the Seventh National Economic and Social Development Plan (1992-1996). It called for a more balanced development, concerning social, economic and environmental aspects, fostered by global trends in sustainable development. Although spatial development in this period is mainly a product of institutional arrangements in the previous periods, significant changes have been observed both in planning sphere and spatial outcomes.

3 LOCAL CULTURES AND TERRITORIAL DEVELOPMENT IN RELATION TO FLOOD RISK MANAGEMENT

The results illustrating in this section are still on a process of development. It contains not all the elements mentioned in the analytical framework. However, it provides a good overview for an application of the proposed analytical framework to explain actual territorial development processes. The analysis is divided

into three parts, according to three development periods in the Bangkok Metropolitan Region (BMR). The periods of development are classified according to major shifts in formal institutions and their significant impacts on spatial transformation as earlier explained. They are (i) the period of country modernisation (1850s-1940s), (ii) the beginning of international agencies and rapid growths period (1950s-1980s) and (iii) the period of reorientation towards balanced and sustainable development (1990s-2009).

3.1 The Period of Country Modernisation (1850s-1940s)

Change initiatives and their reflections in formal institutions

This period was affected mainly by exogenous change-initiating factors, which led to transformation of the modes of land control as well as capital and labour (Phongpaichit and Baker 1995; Molle 2005). A significant shift in formal institutions during this period was the administrative modernisation, taking a model from the colonial apparatus of administration established by the British in India (Arghiros 2001). The process started in 1892 to ensure effective central control of rural areas. Major changes were related to new forms of territory division and the transformation of the traditional administration to a more western-like ministerial system. A rather decentralised with area-oriented development approach was reformed to a more centralised with sector-oriented development approach. As a result, common sector-oriented development policies were created by the ministries at the national level and implemented to the whole country.

Furthermore, a modern legislation for land ownership, of which occupancy by utilisation was replaced by title deeds, was introduced. As a result, land, which was recognised as a factor of production, acquired value in itself and became a tradable commodity. Additionally, a new land policy that granted ownership of land to the land developers (concessionaires for canalised projects), subject to whether or not the land has already been utilised and claimed, was introduced in the 1880s (Molle 2005). This created an enormous expansion of land reclamation in the region. This expansion processes were enhanced also by the gradual abolition of *nai-phrai* system (the Thai traditional hierarchic social structure with some similarities and differences comparing to a feudal system) from 1874 to 1905, which generated increasing demand of land. This is due to increasing of monetisation of the peasant economy brought by the independence of *phrai* (commoners) and *that* (slaves).

After a few decades of launching the aforementioned new land policies, awareness of potential inconsistencies in development approaches created by landlordism within the Thai traditional mode of agricultural subsistence were raised. This led to the reorientation of the land policy in the beginning of the twentieth century. In 1936, the government fixed the limit of land ownership at 50 *rai* (8 ha) per household (Peleggi 2007), aiming to prohibit large-scale concession of land and promote small-scale concession to peasants.

Analysis of the conditioned factors and their influences on the change determination

As mentioned earlier, the social, economic and political reforms in this period encouraged the rise of a middle class. The abolition of the *nai-phrai* system and the influences from increasing associations with westerners made the community a more diverse society. Although the main player guiding development of the region remained the state (or in other words, the aristocracy), private investors and civic society gradually gained more power and involvement in territorial organisation. This created a high probability to accept transferred technology as well as development concepts and policies in the following periods.

The new land policies created different spatial development patterns in different parts of the region. This depended mainly on relationships between physical conditions and attributes of the community who occupied the land. Despite conflicts of the new development approach with traditional conception as living in harmony with nature, a development policy to transform swampy lowlands into cultivated lands using technology to drain and control water was implemented. This is mainly because of its consistency to the institutions of the aristocrats, which were the most powerful in territorial development of the region in this period. They played a role of both policy makers and land developers (concessionaires). They were western-trained technocrats, and thus rather easily agreed and adopted those transferred ideas. Concessionaires chose swampy lowlands, which remained free from occupation, as the priority areas for development. Lands were then parcelled and rented out to tenant peasants who were just free as a result of the abolition of *phrai* and *that* system a few years before (Peleggi 2007). This led to urban expansion to unattended areas, starting in the 1880s.

However, this did not apply to the peasant groups, with which traditional conception as living in harmony with nature was closely associated. This explains why they chose the fertile with low flood prone as priority areas for their settlements, and left the unfertile areas with high flood prone rented from the landlords after a few years (Molle 2005). This is underpinned by their close relationship to physical conditions of the land as a production factor for agricultural uses.

3.2 The Beginning of International Agencies and Rapid Growths Period (1950s-1980s)

Changes in conditioned factors resulted from development in the former period

As mentioned earlier, the former period created conditions that enhanced the rise of middle class. It generated also an expansion of land reclamation, initially for agricultural uses and became urbanised areas during this period. Settlements took place in various high flood prone areas in the region. Those high flood prone areas were left unattended mainly for speculative purposes at the beginning of this period; however, urbanisation started taking place in such areas at the end of the period. This was partly due to a great shift of the Thai economy from an export-based agricultural economy towards a more service and manufacturing-

oriented economy (Askew 2002). This reduced the level of integration regarding human-nature relationships that was closely related to perceptions of people connecting to agricultural practices.

Change initiatives and their reflections in formal institutions

In this period, development direction was influenced by development approaches suggested by the international development agencies and western-trained technocrats. These technocrats formed a significant professionalised subculture within the customary bureaucratic polity (Askew 2002). This resulted in the establishment of various planning agencies, including the National Economic and Social Development Board (NESDB), the Board of Investment (BOI) as well as the Department of Public Works and Town & Country Planning (DPT), in the 1950s. The new approaches were associated with a higher level of controlling (PD) both in terms of human-nature relationships and human-human relationships with lower uncertainty avoidance (UA) and degree of integration (In) of human and nature. This represented in a form of land use plans with regulations that promoted development in flood risk areas with flood prevention measures.

In addition, the National Economic and Social Development Plans during the 1980s emphasised the significant of privatisation and increasing in engagement of private sectors in development planning (NESDB 2008). This resulted in increasing of establishment and engagement of private agencies, such as chamber of commerce, in development planning processes. In other words, spatial development during this period was oriented by a new form of economic and political organisation in the Thai society, led by market forces and the technocrat governments.

Analysis of the conditioned factors and their influences on the change determination

In this period, the society consisted of diverse groups of actors in both planning situations and implementing situations. This created a high probability to accept the policy initiatives. The contents of the new technocrat-oriented development approaches were rather conform with the informal institutions of policy makers and upper-middle class groups, which were the most influential groups in the society in shaping territorial development in the region. Despite their inconsistency to physical conditions of the proposed development areas in terms of flood risk, the plans were still taken into actions.

How plans and projects were implemented was, however, another story. Rather than shaping development through comprehensive planning, the state employed the provision of main transport networks and basic infrastructure as a principal measure to encourage economic growth and direct spatial development (RIDA 1996). This development strategy, of which only the main networks were constructed by the state and the communities were in charge to extend those services to further areas on their own, was rather similar to the strategies employed in the former periods. Yet they associated with two main different features: (i) change in types of infrastructure provision from canals excavation to road construction and (ii) change from community-led organisation to private sector-led investments. This clearly showed inconsistency between

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Considering the social structure, the number of middle class people and their power in shaping development of the region essentially increased. This partly led to significant shifts of formal institutions in this period as explained below.

Change initiatives and their reflections in formal institutions

The shifts in formal institutions in this period resulted from both endogenous change-initiating factors (increasing in number and roles of middle class groups) and exogenous change-initiating factors (sustainable development discourses - including green movements, balanced development, and cooperative and participation planning). The former extremely centralised state power gave way to a higher degree of devolution and public engagement, as explicitly focused in the 1997 Constitution. These changes are the consequences of the struggles of the middle class through key civic movements in 1973 and 1992. The rise of the middle class resulted in a number of changes, reflecting both directly in the governmental administrative reforms and through indirect interventions. A number of NGOs-based for green movements and public engagement initiated by the middle class were examples of such indirect involvements. In other words, a bureaucratic polity was shifted towards a civic polity and was apparently in sight since the 1990s (Arghiros 2001).

These driving forces resulted in the governance and ministerial reformations as well as enacting of laws and regulations, aiming to enhance sustainable development. Major relevant organisation and legislative changes regarding territorial development in relation to flood risk management were, for examples, the Seventh National Economic and Social Development Plan (1992-1996) – the first plan that explicitly addressed balanced and sustainable development concepts as the main objective for development, the 1997 Constitution – which strongly enforced devolution, public participation and citizen engagement processes, and other consequential actions, such as the establishments and legislations of Local Administration Authorities and Ministry of Natural Resources and Environment, Environmental Protection Act 1992, Land Appropriation Act 2000, Land Readjustment Act 2004, Land Development Act 2008.

Trends in spatial planning also moved towards a more civic approach. Apart from controlling spatial development through *phang-mueng-raum* (a land use zoning plan with restrictions), the Department of Public Works and Town & Country Planning (DPT) began to cooperate with private investors through negotiation processes, soon after the 2003 Land Readjustment Act was launched. Furthermore, the role of the DPT under the central government was changed according to the 1999 Devolution Act. The role of planning was greatly transferred to local authorities. The role of the DPT was changed into preparing the regional and the national level as to provide strategic development frameworks to the locals. This approach was well cooperated by the local communities in which the customary social organisation was maintained.

Furthermore, the most recent significant change initiative was the introduction of the philosophy of 'sufficiency economy' by His Majesty the King. This concept was stated first time as a development approach for the country in the Ninth National Economic and Social Development Plan (2002-2006). The concept was applied not only to economic field, but rather to a broader aspects of development. Regarding flood risk management, it reflected in various new measures of dealing with flood at different scales, such as using of flood retention at the regional scale, replanting mangrove at the district scale and regulations and guidelines for green-blue-brown coverage ratio at the plot scale.

Analysis of the conditioned factors and their influences on the change determination

Considering the shifts of formal institutions in terms of human-nature relationships, the concepts that increased level of integration (In) to nature resulted by the sustainable development concepts, were likely well accepted in planning situations. However, the degree of acceptance was different amongst actors. For instance, the DPT noticeably applied the concepts in the most recent strategic plan for the BMR; the preventive measures, however remained dominant in flood risk management approach of the Royal Irrigation Department. In implementing situations, the degree of acceptance varied also amongst different actors. This highly connected to their attributes of community. Actors whom their occupations were closely related to nature were likely to accept the new approach more than actors associated with urban life styles. In addition, those who lived in well flood-protected areas were less likely to take the new approach as necessary.

Nevertheless, explanation of the rather high degree of acceptance of new approaches that encourage less control (PD) over nature and being more integrated (In) to nature is quite complicate. Analysis of spatial outcomes alone does not inform whether the acceptance resulted from the consistency of informal institution regarding human-nature relationships or human-human relationships. This is doubtful because the concepts were introduced by H.M. the King, which is greatly respectful in the society; they are also conform with the conceptions of human-nature relationships representing in Buddhism – the main religious of Thai people. Further investigation on relationships between effects of informal institutions on decision-makings thus appears necessary.

Regarding the shifts of formal institutions in terms of human-human relationships, the concepts of devolution and public engagement in planning, which lowered the level of control (PD) and encouraged a better integration in the society (In), were currently not quite well implemented. This was likely to cause by inconsistency between the policy initiatives and the dominant informal institutions in the society. The customary social organisation at all scales, from a family to the national scale, was based on a high power distance (PD) model with different levels of integration (In) of each social group. The inconsistency regarding power distance to the constitutional level of institutions of the society thus played a crucial role in preventing successful changes to take place, despite the significant changes at the structural level.

4 OBSERVATIONS AND CONCLUSIONS

This paper presents preliminary results of the first test of applicability of the proposed analytical framework to explain the actual phenomena, taking territorial development regarding flood risk management in the Bangkok Metropolitan Region (BMR) as a pioneer case for analysis. The analysis interpreted cultures and their effects on territorial development processes, mainly from spatial outcomes as well as organisation and policy analysis. This may involve significant deviations resulting from the author's interpretations.

Nevertheless, the analysis shows that the proposed analytical framework tends to be a promising approach to explain territorial development processes from a cultural perspective, despite its potential subjectivity resulted by heuristic interpretation. It shows a high correlation between the four conditioned factors and development outcomes, both in terms of development policies and plans and spatial outcomes. The three cultural dimensions employed to categorise cultures regarding flood risk management also help to facilitate a better understanding on determination of policy acceptance according to the four change-determining factors proposed by Gullestrup (2006).

Further investigation by other methods that may help improving subjectivity of cultural interpretations, particularly of informal institutions, appears necessary. This includes interviews of focus groups, such as planners, policy makers and real estate developers, and questionnaires to civic sectors living in focused areas. In addition, more case studies and issues for investigation of effects of local cultures in territorial development processes would help to improve and assure the validity and applicability of the proposed analytical framework for policy analysis to apply to a broader scope of territorial management in diverse institutional settings and cultural contexts.

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