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Sustainable Development in Trans- boundary Water Resource Management

A Case Study of the Mekong River Basin

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Sustainable Development in Transboundary Water Resource Management

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Abstract

Global climate change, environmental degradation and demographic changes has emphasized the sustainable development of Mekong river basin. The research uses the theoretical framework that sustainable development in the transboundary water resource management is most likely to be achieved through the policy making based on the 'regional approach' and the 'alternative development strategy.' The aim of this research is to investigate the management of Mekong river basin within the theoretical framework and to assess the prospect of sustainable development. The Mekong River Commission (MRC) and its programs, hydropower development in the upstream and the downstream and the geopolitical situation of the Mekong region are reviewed for the analysis. In result, although MRC has stressed the principle of sustainable development, the limitations such as the dam constructions in the both upstream and downstream, donor influence, legal restrictions of the 1995 Mekong Agreement and limited implementation of the participatory approach in development programs remain as the constraints to achieve sustainable development. The Build-Own-Transfer type of privatized hydropower development in the downstream is a challenge to the environmental and social sustainability by accelerating the process of the dam building process. MRC's the most prioritized strategy to introduce the 'Integrated Water Resource Management' implies the basin-wide management of water resource management, yet the complexity of respective national interests have to be added as a concern in the transboundary context. The absence of China and Burma in MRC is a critical weakness to apply the regional-approach in the development policy. In the case of the upstream hydropower development, the decision making has been done unilaterally without the accountable and transparent process. As China considers the Mekong in the relation to the energy production and oil transportation, the securitization of the Mekong will affect negatively on the future participation of China in MRC. A positive trend can be derived from China's ambition to become a regional power to replace the donors in MRC, and this strategic realism will strengthen the regional cooperation between China and other riparian states though MRC.

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Acronyms

| | |
|-------|---|
| MRC | Mekong River Commission |
| ADB | Asian Development Bank |
| GMS | Greater Mekong Subregion Program |
| ASEAN | Association of Southeast Asian Nations |
| UNDP | United Nations Development Program |
| SEDAC | Socioeconomic Data and Applications Center |
| IWRM | Integrated Water Resource Management |
| FAO | Food and Agriculture Organization of the United Nations |
| IMC | Interim Mekong Committee |
| SEA | Strategic Environmental Assessment |
| BOT | Build-Operate-Transfer |
| NSC | New Security Concept |
| ARF | Asian Regional Forum |
| BDP | Basin Development Plan |

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1. Introduction

1.1. Transboundary Water Resources

Water is a critical resource for living, as the quantity and quality of water for drinking, farming, irrigation, fishery, transportation and tourism is crucial. Water resource management also affects human society by the natural disasters such as floods and droughts. The problems of managing transboundary water resources include scarcity, maldistribution, sharing, over-utilization and misuse (Kliot et al., 2001). The number of international transboundary river basins in the world is listed as 280.¹ The Mekong, Nile, Indus, Ganges-Brahmaputra, Jordan, Danube, Elbe, Rio Grande, Colorado Senegal and Niger are famous examples of international transboundary river basins.

Transboundary water resources often create borders between states e.g. the Mekong between Cambodia and Vietnam, the Yalu between North Korea and China, the Indus between Bangladesh and India. Sharing water resources requires trust and cooperation among riparian states, yet it is not always the case. Because of the extremely arid climate in the Middle East, the Jordan river plays a crucial role in political and militaristic conflicts. The Aral Sea shows a case where the transboundary water resource management can cause conflicts and end with severe environmental degradation.

The practice of transboundary water resource management is divided into three categories; first, treaties and agreements stopping short of allocating water between riparian states such as free navigation treaties or institutions established for combating pollution e.g. the Elbe, Danube, and Rhine; second, treaties and agreements allocating water between states e.g. the Indus, Nile, Ganges, and Jordan; third, agreements for joint management of internationally shared waters e.g. the Mekong, Colorado, Rio Grande, Senegal and Niger (Kliot et al., 2001). Each case of water resource management has its own characteristics even when in the same category. Economic integration within states and shared value and ideology are considered variables that influence the water resource management. The importance of a case study in the issue is to understand the complete regional, political, economic and environmental setting; to analyze problems; and to suggest a possible improvement.

1.2. Mekong River Basin

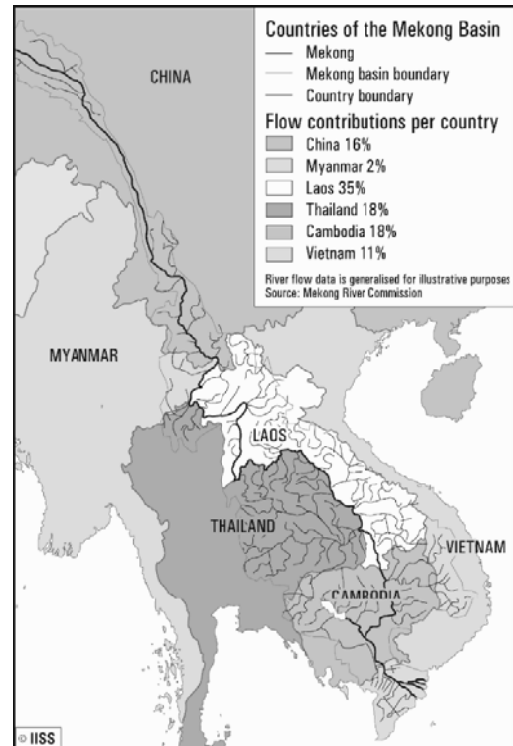
The Mekong river basin is the eighth-largest river basin and one of the least modified major rivers in the world. The river basin has been reserved from development which also has preserved a rich cultural heritage and diversity. As a transboundary water resource, it has six riparian states; China, Burma, Laos, Thailand, Cambodia and Vietnam. In terms of drainage area (795,000 km²), it ranks twenty-first in the world and twelfth in terms of its length (4,800 km). However, its large runoff (475,000 million m³) places it eighth in the world table of great rivers. Starting at an elevation of over 5,000 m in the Tanghla Shan Mountains on the Tibetan plateau, the Mekong flows south, cutting through southern China to the common Burma–Laos–Thailand boundary. It then flows a further 2,400 km to the ocean. The Mekong river basin has two almost distinct parts, the upper basin is a mountainous area and the lower

¹ Green Cross, 2000

basin largely consists of a flood-plain. The upper part in China and Burma accounts for 16 % and 2 % of the flow, respectively; and the lower part covering Laos, Thailand, Cambodia and Vietnam accounts for 35 %, 18%, 18% and 11% of the Mekong flow (Figure 1).²

1.2.1. Socioeconomic factors

The mainland Southeast Asia has experienced political, social and economic turmoil through the colonial period, the Cold War and post-Cold War period. During the colonial period, the mainland Southeast Asia was a battle field of Western powers to exploit natural resources. France was interested in reaching China through the Mekong river until the expedition turned into a failure in 1856. The early development work was carried out in Vietnam and Cambodia by French colonial enterprises to build roads, dams and irrigation systems. After the independence, the Vietnam war tore down Vietnam, Laos and Cambodia for roughly 20 years between 1955 and 1975. Following the Vietnam War, the Khmer Rouge movement in Cambodia took place in 1975 to 1979. Burma has been experiencing military dictatorship since 1962. The long term political turmoil in the region has resulted in poverty as a major problem.



Human Development Index in the region ranges between 0.59, medium human development, and 0.78, high human development.³ Recently, China and Thailand have been achieving a high economic growth, and the level of poverty is dropping. According to the Multidimensional Poverty Index,⁴ poverty in the region is more intense and the number of people in poverty is higher in Laos and Cambodia compared to Burma and Vietnam. The poverty in Cambodia and Laos is a composition of deprivation of education and living standards.⁵ Although the region is in a humid climate, the percentage of population lacking access to clean drinking water is 29.7% in Cambodia, 27.8% in Laos, 13% in Vietnam and 12.1% in Burma. Limited industrialization and high dependency on natural resources are the biggest obstacle for Cambodia, Laos and Vietnam's economic development.

1.2.2. Mekong Riparian States

The Mekong riparian states rely on the river in different degrees (Table 1). China's Yunnan province is underdeveloped compared to the rest of China. Because of the energy deficiency, the hydropower potential of the Yunnan province is highly demanded by nearby industrial provinces (Schneider, 2011). Burma relies on the Mekong the least for the water supply

² Waterwiki.net [Accessed 04-15 2010].

³ UNDP 2010. Human Development Report. New York.

⁴ OXFORD POVERTY & HUMAN DEVELOPMENT INITIATIVE. 2010. *Multidimensional Poverty Index* [Online]. Available: <http://www.ophi.org.uk/policy/multidimensional-poverty-index/> [Accessed 04-15 2010].

⁵ Multidimensional Poverty Index's living standards include electricity, sanitation, drinking water, floor, cooking fuel and asset ownership.

compared to the other riparian states. Burma is mainly interested in building a hydropower station and participating in the navigation project. The untouched forest in Burmese territory has been developed through the new transportation route on the Mekong.

One third of Thai population lives in the Mekong river basin. The development of Mekong is important for the population living in the Isaan province which is under-developed and remote from the other economic centers. Thailand is a leading electricity consumer in Southeast Asia, and its electricity import from the neighboring countries is one of the important interests of Thailand on the Mekong river (Goh, 2006c).

The Mekong delta is extremely important to Vietnam in the agriculture, forestry and fishery. The area accounts for approximately 50 to 65% of the GDP production and 16 million inhabitants which takes one fifth of the total population. Saline water intrusion in the river delta is a big concern for the rice cultivation. In other hand, Vietnam has the ambition to build hydropower dams in the northern part of the country. In 2004, Vietnam confirmed to build Yali Falls Dam in the Se San River, a tributary of Mekong River, in the Central Highland. Yali Falls Dam is the second biggest dam in Vietnam and it has a direct impact to the downstream Cambodian villages' livelihood (Hirsch and Wyatt, 2004).

As a land-lock developing country, Laos is totally depending on Mekong as its water source. The Mekong passes through the entire territory of Laos and it provides the water for farming, fishery and transport. The water resource development in Laos is limited by its lack of infrastructure and finance, but it has a high potential for the hydropower generation. The Government of Laos has signed memorandum of understanding with private companies to development the mainstream Mekong hydropower potentials (Hirsch, 2006).

Cambodia is also another country in the lower basin which relies heavily on the Mekong river for its agricultural and fishery production. The flood plain of Mekong river covers the entire country. Tonle Sap is a major source of protein and income for Cambodians and ecologically extremely valuable for the Cambodia's ecosystem (Sokhem and Sunada, 2006). Cambodia is likely to suffer the most from the hydropower dams in the upstream. However the Government of Cambodia also attempts to develop hydropower stations in the mainstream Mekong in its territory.

Table 1 The main functions, impacts and threats related to the Mekong River in six riparian countries⁶

| Country | Flow contribution (%) | Basin population (%) | Main use/function | Major feared impacts caused by the country | Major threats to the country |
|---------|-----------------------|----------------------|----------------------------------|---|--|
| China | 16 | 16 | Hydropower, transportation route | Leveling out of the floods, trapping of sediments and nutrients | Lack of energy and transportation routes |
| Burma | 2 | 1 | Hydropower | - | Lack of infrastructure and political instability |

⁶Adopted from: Marko Keskinen, Katri Mehtonen and Olli Varis, 2008, Transboundary cooperation vs. Internal ambitions: The role of China and Cambodia in the Mekong region, in the book 'international water security: domestic threats and opportunities' edited by Nevelina I. Pochova, Mikiyasu Nakayama and Libor Jansky, UNU Press, Tokyo, p.83

| | | | | | |
|-----------------|----|----|--|--|---|
| Thailand | 35 | 7 | Water diversion for irrigation | Environmental degradation, flow changes | Lack of water for irrigation |
| Laos | 18 | 34 | Hydropower, navigation, aquatic resources | Leveling out of the floods, trapping of sediments and nutrients | Impacts on agriculture and fishing, river bank erosion |
| Cambodia | 18 | 14 | Aquatic resources, irrigation, possibly hydropower | Potential negative impacts owing to unsustainable fisheries management | Changes in floodplains, particularly in the Tonle Sap flood pulse → impact on fishing and agriculture |
| Vietnam | 11 | 28 | Irrigation (delta), hydropower (central highlands) | Increasing environmental degradation and water quality problems in the delta owing to intensive agriculture and dense population | Decreased dry season water flows, increasing salt water intrusion and negative impacts on irrigation |

1.3. Regional Cooperation in Mekong River Basin

There are three regional organizations on the Mekong River Basin, Mekong River Commission (MRC), Greater Mekong Subregion Program (GMS), and ASEAN-Mekong Basin Program. First, MRC is an intergovernmental organization that has four members of the lower Mekong states, Lao, Cambodia, Thailand and Vietnam. One of the few legally-binding agreements among Mekong basin states is the Agreement on the Development and Cooperation of the Mekong river basin (the Mekong Agreement) signed in 1995 which extensively emphasizes the Commission's commitment to sustainable development. MRC has a long history of cooperation began as Mekong Committee which was established in 1957. The Interim Mekong Committee (IMC) was formed in 1978 following the cessation of participation by Cambodia in 1975. Nevertheless the ambitious vision of IMC was prevailed by the limitation that was created by the tense geopolitical situation in the region in the 1980s (Keskinen et al., 2008).

The analysis on the Mekong Agreement is elaborated in the later part of the study (Chapter 5.2.). MRC operates 12 development programs and is supported by 12 bilateral donors, two multilateral development banks and one NGO (Chapter 5.3.). In 1996, China and Burma became MRC Dialogue Partners. China now shares hydrological data with the MRC under a formal agreement, which provides a substantial contribution to, amongst other activities, flood forecasting and river monitoring within the basin (MRC, 2009b). There are criticism to MRC that there are overwhelming external funding from international donors that provide less participation from the local and NGOs (Saikia, 2011).

GMS is initiated by Asian Development Bank (ADB) in 1992 to promote economic cooperation among the greater Mekong countries. The Program includes all the Mekong riparian countries' entire territories. GMS supports programs in transport, energy, telecommunications, environment, human resource development, tourism, trade facilitation,

private sector investment and agriculture.⁷ GMS is also known for a major focal point for the HIV/AIDS epidemic in Southeast Asia (Chantavanich, 2000). GMS has somewhat achieved economic integration of the region through building a large scale infrastructures. In addition, GMS became an institutional platform for the cross-border power trading, and 1 million Euro has been provided to the power grid project for the technical assistance grant.⁸ The underdeveloped market based economy in the former socialist member states could decelerate the economic cooperation in GMS (Krongkaew, 2004).

The ASEAN Mekong Basin Program was established in 1996 by ministers of ASEAN. It focuses on the multilateral infrastructure projects and cross-border activities. Broader participants such as Brunei Darussalam, Cambodia, China, Indonesia, Laos, Malaysia, Burma, the Philippines, Singapore, Thailand and Vietnam are working together for the economic development cooperation of the Mekong river basin.⁹

MRC, GMS and ASEAN Mekong Program have different characteristics and purpose, but it shares the idea of developing Mekong River Basin within multilateral approach. The coordination of three organizations is problematic but necessary to achieve effective and efficient cooperation (Saikia, 2011). With the economic growth of China, US and Japan are trying to engage with China in the regional politics. The rivalry relationship between Japan and China can rise in the current setting where Japan is a major donor in ADB and ASEAN, and China's role is increasing in ADB and ASEAN.

2. Challenges on the Mekong River

2.1. Population growth

Because of the insufficient reporting on the population in the Mekong river basin, the range of population estimation of the area is varied; the population in the entire Mekong River Basin is estimated as 72 million in 2005 which is grown from 63 million in 1995 (Pech and Sunada, 2008); Eastham *et al* (2008) estimated the total population of the Mekong river basin as 58 million in 2000 based on Socioeconomic Data and Applications Center (SEDAC) data.

The scenarios on estimated demographic changes are also different among researchers. Based on the constantly changing population growth rate, Pech and Sunada (2008) estimated the population of the Mekong river basin will be 115.2 million in 2050 which is 60% increase compared to the 2005 level. There are two possible outcomes depending on using whether 64 million (UNDP data) or 111 million (SEDAC data). MRC (2010c) estimated the population of the Mekong river basin to 100 million in 2020 which is in a middle ground of UNDP and SEDAC's estimation.¹⁰

⁷ ADB Webpage, <http://www.adb.org/GMS/Program/default.asp> [Accessed 02-10-2011].

⁸ ADB Webpage, Project Summary, <http://pid.adb.org/pid/TaView.htm?projNo=39594&seqNo=01&typeCd=2> [Accessed 02-11-2011].; GMS news, http://www.adb.org/Media/Articles/2006/9191_Mekong_power/ [Accessed 02-11-2011].

⁹ ASEAN. 1996. *Basic Framework of ASEAN- Mekong Basin Development Cooperation* [Online]. Kuala Lumpur. Available: <http://www.aseansec.org/6353.htm> [Accessed 03-11 2011].

¹⁰ MRC Annual Report, 2008

Population growth can lead to a higher water stress. The water availability per capita is calculated by the formula $m^3/\text{capita}/\text{year}$. If it is less than $1700 m^3/\text{capita}/\text{year}$, the population is likely to experience water stress (Falkenmark and Lindh, 1976). Current average water availability per capita in the Mekong River Basin is $9000 m^3/\text{capita}/\text{year}$ which is far from the danger of experiencing water stress. However the water quality for drinking is especially poor in Cambodia and Laos.¹¹ The estimated population in 2030 could be almost doubled the population of 2005, the water availability per capita could be decreased by the population growth.

Population growth means more pressure on the natural resources, generally more land to live and to grow food. According to the United Nations Population Division data, urban population growth rate is predicted to increase faster than rural areas because of the urbanization.¹² Urbanization can decrease the living standards especially in the slum areas and create more competition to acquire natural resources. Access to food will worsen because of the agricultural productivity is expected to stay on the same level. Urbanization and the limited access to food can be a threat to the socially and economically marginalized groups of the population. Population growth will dispose more wastes and pollutions to the ecosystem. Pollution from wastes lowers the living standard of the population by affecting their health and infiltrating to the groundwater. The positive correlation between poverty and environmental degradation can jeopardize the region's prospects.

2.2.Environmental Challenge

The Mekong river basin is one of the most pristine transboundary water resources that include the massive forests and wetlands. The biological diversity in the Mekong has been well reserved because of the difficulty to access to the areas. Now enhanced inland transportation has increased the logging opportunity of the forest in the Mekong river basin. As well as the deforestation, the environmental degradation has been taking place in the fishery and wetlands. Sverdrup-Jensen (2002) estimates 1,700 species of fish living in the Mekong river basin. Fish is a major source of protein as well as income for the lower Mekong basin population. In the delta, the wetlands play an important role as the habitats for the fish and other aquatic species.

2.2.1. Decreased Wetland

The wetland ecosystems in the Mekong river basin are closely linked to ecological balance and economic well-being. The role of wetlands includes the habitats for fish. The anthropogenic activities on the wetlands in the Mekong river basin have been the direct cause of destruction. For example, the *Melaleuca* mangrove forest in the wetland was destroyed by the bombing during the Vietnam War, and the loss of the forest resulted in the natural water quality problems by the saline water intrusion (Westing, 1971). Apart from the extreme cases like a warfare, destroying natural wetlands for rice cultivation, expanding the human settlement, constructing dams and navigation channels and discharging pesticide and insecticide from agricultural lands have been causing wetland destruction (Torell et al., 2001).

¹¹ OXFORD POVERTY & HUMAN DEVELOPMENT INITIATIVE. 2010. *Multidimensional Poverty Index* [Online]. Available: <http://www.ophi.org.uk/policy/multidimensional-poverty-index/> [Accessed 04-15 2010].

¹² UN Population Division, <http://esa.un.org/unup/index.asp?panel=1>, [Accessed 2011-03-15].

The wetland protection was addressed as an important issue in 1990s by scientists, and MRC included the wetland protection in its environment program. However Torell (2001) argues that the definition of wetland set by the Ramsar Convention in 1971 is too broad to include a local context of wetlands in the Mekong river basin. Another problem is that the economic benefits of the wetlands are not clearly demonstrated, either the social benefits (Do and Bennett, 2009).

2.2.2. Threats to Fisheries

The underestimation of the ecological and socioeconomic value of fishery in the Mekong by official government statistics is significant (Coates, 2002), so as the underestimation on the threats to fisheries. The threats to the fishery can be divided into the fishery sector originated threats and non-fishery sector originated threats.

The intensiveness of fishing practice in the lower Mekong basin can be as intensive as catching a half ton of fish in 15 minutes. The fish stocks can be overexploited during the spawning times or in spawning grounds. Using destructive fishing methods like explosives, electrocuting and poison can be the case the lower Mekong basin. Non-native fish species inflows to the ecosystem because of escaping fish from the fish farms during floods, and it can cause the distortion in ecosystem in a part of the basin (Coates et al., 2003).

Non-fishery sector can cause threats to fishery because of the influx of pollutant, habitat destruction, and construction of barriers (Coates et al., 2003). In the lower Mekong basin, rice fields is used for growing fish and aquatic species including mollusks, crustaceans, insects, amphibians and reptiles, but the some rice field is contaminated with the pesticides and it becomes unavailable for fisheries (Balzer, 2003). The interconnectivity of ecosystem is an extremely significant factor in the fisheries that any kind of modification of the river's hydrology can cause an impact on fisheries.

Dudgeon *et al* (2006) argue that the problems in the freshwater biodiversity is caused by; the insufficient data; the lack of incorporation within water development on the freshwater biodiversity; and the ineffective communication between scientists and decision makers. Overexploitation has not caused the extinction of fish stocks in freshwater fisheries yet, as it did in sea fishery, but it is important to incorporate biodiversity concerns on the fisheries to prevent the fish stock depletion in the future.

2.2.3. Deforestation

The Mekong region has experienced high level of deforestation in recent decades (Table 2). Multifarious impact of deforestation affects various social groups and ecosystem. More agricultural use of land, excessive and inefficient commercial logging, land encroachment for human settlements, infrastructure development, and heavy fuel wood use are the reasons to cause deforestation in the Mekong river basin (MRC, 2009a). The unsustainable agricultural method of slash and burn agriculture is still in practice in overall region. Laos, Cambodia and Vietnam experienced massive deforestation during the Vietnamese war by US air force's bombing. Commercial logging has been done by commercial or military-backed corporations (Hirsch, 2000).

Table 2 Total Forest Coverage (1000 ha)¹³

| Country | 1990 | 2000 | 2005 | 2010 |
|----------|-------|-------|-------|-------|
| Cambodia | 12946 | 11541 | 10447 | 10094 |
| Laos | 17314 | 16532 | 16142 | 15751 |
| Burma | 39219 | 34554 | 32222 | 31773 |
| Thailand | 15965 | 14814 | 14520 | 18972 |
| Viet Nam | 9363 | 11725 | 12931 | 13797 |

2.3. Climate Change

The five key areas at the high risk by climate change include water, agriculture, health, energy and biodiversity. The observed increase in temperature over decades has been linked to the large-scale hydrological cycle changes including; extreme precipitation and water vapor; snow and land ice melting; sea level rise; possible increase of evapotranspiration; increase of soil moisture; changes in runoffs and river discharges; and increased variability in hydrological cycle (Bates et al., 2008). Since climate change influences the amount and variation in precipitation throughout the year, the precondition of the existing international treaties will not be valid any more. Climate change is added as a new variable in the transboundary water resource management.

Eastham et al (2008) concludes that Mekong river basin will be warmer and wetter; the mean temperature increase is 0.79 C and precipitation increase can be up to 0.2 m which is 13.5% of the current level. The temperature increase in the upper basin will be even higher than in the lower basin because of the melt down the glaciers. Precipitation increase is mainly in the wet season in all catchments and dry season rainfall is projected to increase in northern catchments, and to decrease in southern catchments (Eastham et al., 2008). Low water level during the dry season can cause problems to the lower basin countries on the fishery, irrigation and sea water intrusion in the river delta. Heavy rainfall during the wet season can cause more frequent floods in the lower basin (MRC, 2009c). The annual total runoff from the basin or more specifically in the wet season is likely to increase by 21%, and increase of runoff could improve or maintain the water availability under the situation of likely increases in water withdrawals for irrigation, domestic and industrial purposes. However the dry season's runoff remains the same in the future that could cause water stress in some catchments (Eastham et al., 2008).

The assessment shows that the possible impact of climate change will put multi-pressure to the productivity of rice, the most important crop in the region, and the fisheries, the major economic income and nutrition source (Eastham et al., 2008). The sea level rise and the increased river discharge in the Mekong delta will affect rice production through a longer and excessive flooding (Wassmann et al., 2004).

In addition to the changes in hydrology, the Mekong river basin is exposed to the high risk of extreme weather and the impact of the extreme weather will cost financial, social and human capital (Harmeling, 2010). The risk and disaster reduction in the low-income countries is a

¹³ Source: FAO 2010. Global Forest Resources Assessment 2010. *FAO Forestry Paper*. Rome: FAO.

convoluted issue, because the low-income countries lack technical, economic and human resources to prevent and recover from the disaster. However there are some examples of the collective risk and disaster reduction to complement proactive adaptation on the regional level (MRC, 2009c).

Current water management practices may not be prepared for the impact of climate change on water supply reliability, flood risk, health, agriculture, energy and aquatic ecosystems (Bates et al., 2008). Climate change expands the transboundary river management to the adaptation and diverts it into a more challenging subject. Socioeconomic impact of climate change put sustainable development at risk. The Integrated Water Resource Management (IWRM) is considered as a solution for achieving successful adaptation and mitigation in the water resource management, yet the implementation of the IWRM in transboundary water resources is even more challenging than the IWRM in a domestic water resource.

3. Research Design

3.1. Research Question

The research question of this thesis is that how the regional development strategy and approach affects the implementation of sustainable development in the transboundary water resource management in the Mekong river basin. Implementation of sustainable development is more problematic in a regional level than a national level because of the complexity of the regional politics. Not only the complexity, but also the cumbersome of interests among stakeholders is a problem. In a larger scale, the water governance is more likely to attain views from the proponents of the national interests instead of the local interests (Lebel, 2005). The national interests are often focused on large-scale construction projects to gain short-term financial benefits then to provide means for economic development. The hydropower development is an example of the large-scale construction project that has prevailed in the development of the Mekong river basin. Environmentalists and NGOs have advocated the small-scale, people centered and sustainable development, when the policy makers have prioritized the economic growth over the environment and social development. Along the line of the development policy review, the review on the geopolitics of the Mekong river basin has contributed to the formation of the research question. The geopolitics of the Mekong river basin decides the riparian states' participation in the regional cooperation and it has implication to the implementation of sustainable development in the Mekong river basin.

A few academic research has been done on the regional cooperation in the Lower Mekong Basin (Sokhem and Sunada, 2006, Hirsch, 2006, Lebel, 2005, Dosch and Hensengerth, 2005, Jacobs, 2002, Öjendal, 2000), and the focus of the research has been limited to the politics of hydropower development and the role of multilateral organizations such as MRC and GMS. The research on China's role in the Mekong has been limited due to the lack of data and information accessibility and human activities in the area of the Yunnan province (Öjendal, 2000). China's role in the Mekong river basin is studied by Goh (2004, 2006a, 2006d, 2006b, 2006c) in the security and regionalism perspective. The increased importance of the Mekong river basin for China and China's active involvement in GMS and other development projects

without getting through MRC is discussed in her papers. This study aims to examine both development strategies and geopolitics in the lower Mekong basin and China, so that discussion on China's involvement in the Mekong river basin completes the puzzle of prospects of sustainable development in the Mekong river basin.

This thesis consists of three part; first to analyze the development strategy and approach in the development programs by MRC; to review the hydropower development plans; and to assess the prospect of sustainable development in the region whether the geopolitics of the regions allows it or not.

3.2. Methodology

This research is a qualitative research that adopts two theories for the epistemological backgrounds of the analysis. Critical theory is used in the analysis on the development strategy in chapter 5 and chapter 6, and constructivism is used in the geopolitical analysis in chapter 7. The traditional critical theory is critical 'to liberate human beings from the circumstances that enslave them' (Horkheimer, 1982). Horkheimer's definition of the critical theory is applicable in the assessment of the development policy in the context that sustainable development is the ultimate goal of the development activities, and the researcher is critical to the obstacles to implement sustainable development. Horkheimer's critical theory must be explanatory, practical and normative at the same time to be adequate (Bohman, 2010). Therefore, the study aims to satisfy the explanatory goal to describe the characteristics of the development strategy; the normative goal to emphasize the importance of sustainable development; and the practical goal to suggest a possible improvement for the future.

The domination of realists and idealists perspective in the international relations theory is challenged by constructivism that points out the importance of contingent social and historical factors. Wendt (1999) argues that international relations is 'socially constructed', and not as static as neorealism and neoliberalism perceive it. Introducing Constructivism makes the analysis more critical to the both neorealism and neoliberalism, and the analysis can respond better to the dynamic changes in geopolitics.

3.3.Data Collection and Limitations

A case study collects one or a few cases in large amounts of information rather collect a large number of respondents such as the social surveys method. A case study can be varied depending on the number of cases, whether there is a comparison case, or what kind of role it plays in the comparison. When the number of cases is small, the cases studied in depth. Also a case study involves quite non homogeneous assumptions about the social world (Hammersley, 2004).

Many other qualitative researches use the interview and survey methods for the data collection, but this research is based on the literature such as books, publications, academic journals and web-based sources. The scope of the research is rather focusing on the policy formation in the Mekong river basin, not on the empirical research covering more detailed policy areas. Although the empirical research is not needed, a field study including interviews

on policy makers in the Mekong riparian state and MRC secretariat staffs could have been useful to investigate the underline causes of the policy making in the Mekong river basin.

4. Theoretical Framework

4.1. Development Approach for Sustainable Development

Öjendal (2000) introduced a framework for positioning the basin development policy (Figure 2). In the transboundary water resource management, policy making approach is originated either state-centric approach or regional approach. State-centric approach represents a point of view to acknowledge the traditional concept to recognize water resource as a captured good. Regional approach rather perceives a water basin as a shared good. At the same time, the strategy for the basin development can be done either the mainstream development strategy focusing on the infrastructure construction or the alternative development strategy diversifying development to the more socially and environmentally oriented.

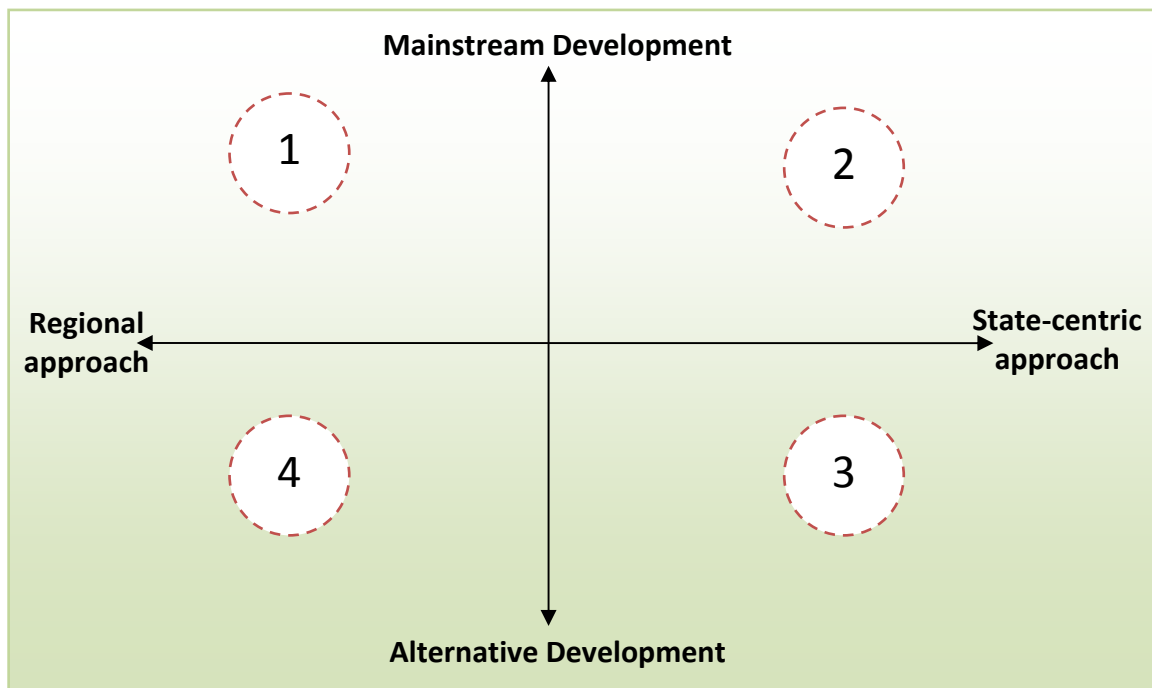


Figure 2 Four positions for policy making (Öjendal, 2000)

In the framework, the state-centric approach represents a perspective that a state concerns the most on its relative gains over others. It is an individualist position that recognizes the structure has only a casual effect on the states which means that the state's behavior is not influenced by the regional structure (Wendt, 1999). At the same time, state-centric approach is based on the assumption on anarchy in international relations. An extremely chaotic circumstance without orders and social norms, a state of war, is similar to the Hobbes' state of nature. Integration within nations and interdependence among them has contributed to the evolution of the anarchy to an international structure. Maximized individual freedom in anarchy is a force that might cause destruction of a structure (Waltz, 1979).

According to the individualists' assumption on the anarchy, a state is mostly interested in increasing its gains, and the international structure rarely has the impact on a state, or vice versa. Therefore a state pursues its interests in the relation to other states, and a state is reluctant to participate in international cooperation because of the wariness that other states might gain more from the cooperation.

The question by a political realist asking "How can sovereign states, pursuing national self-interest and those policies that would best assure the regime's survival, cope with the challenge of bi- or multi-national coordination in the use of a common resource? (Shmueli, 1999)" represents the state-centric approach in transboundary water resource management. The modern political system which is consisted with sovereign states allows individual states to decide whether to participate or influence the social structure of states. State-centric approach often sees water as an essential commodity that somehow belongs to a state and the sovereign state can 'manage' its natural resource depending on the national needs.

On the contrary, the regional approach is a perspective that a state concerns absolute gains from the international cooperation and respects the international norms and the rights of the others. It is based on the holism which recognizes the difference that structures make is high. In the holism perspective, the relationship between structures and agents is inclusive meaning that the effects of the international structures on a state cannot be reduced by the states or interactions of individual states. The assumption about the society is related to Kant's thought on society in which the importance of the respect for the rights of the others is emphasized. The idea based on the Kantian society and the morality has been dimmed by neorealists throughout the domination of materialism in the frequent armed conflicts.

In the early 1980s, political neoliberals began to argue that international institutions also play a significant role in relative weight. Although neoliberals and neorealists agree on that power, interests and materialism have a valid impact on international relations, they disagree on the degree of the weight that is imposed by the international institutions (Wendt, 1999). The role of inter-governmental organizations has been increased in the area of environmental cooperation. The nature of environmental problems is interconnected and transboundary which makes it inevitable to urge multilateral cooperation. United Nations has provided platforms to discuss biodiversity, climate change, deforestation and water management to Member States. The multilateral cooperation is not only in the international level, but in the regional level, inter-governmental dialogues and programs are trying to solve environmental problems e.g. Baltic Sea Regional Program, Black Sea Economic Cooperation and the Interstate Council for the Aral Sea. Enhanced regional institutions can prevent a free-riding issue and promote a more balanced development.

The mainstream development is a traditional strategy for the water basin management that is connected to the economic development and employment generation through a large scale development projects. For example, Tennessee Valley Authority was established during the New Deal, and it undertook the large construction projects to improve navigation and to generate hydropower. Mainstream development strategy expects spill-over effects of the construction projects on lowering unemployment rate and distributing wealth. The lack of

public participation and a small number of policy makers are another attribute of the mainstream development strategy.

The alternative development strategy has been grown under the problems of the mainstream development strategy which is a centralist and large-scale water resource management. The adopted definition of the alternative development strategy is a set of small-scale solutions that includes a higher degree of local participation and ownership for maintaining social and ecological sustainability (Öjendal, 2000). The small-scale solution has the advantage over the large-scale one, because it could understand better of the complex local environment and providing a customized solution that can make positive changes. The participatory approach in development became popular in the late 1980s, encouraged by UN in the early 1980s. Empowering a marginalized group and implanting a local ownership of a development project is now considered as an important aspect.

Öjendal (2000) argues that the position *four* (Figure 2) has the least conflict risks and most development prospects above all. The mainstream approach – tightly connected to nation-state building, modernization, and the realist paradigm – must also be regarded as more conflict generating than the alternative approach. In the contrast between state-centric approach and regional approach, regional approach indicates more prone to the development prospects with people-oriented, participatory small-scale and environmentally sustainable projects than state-centric approach.

The position *one* is a combination of the mainstream development-regional approach that would like to minimize the possibility for the interstate conflicts between riparian states, and to maximize economies of scale by utilizing the maximum development potential in the region. However the level of decision making is extremely alienated from the locals that the social equity and environmental sustainability is more likely to be neglected. The example of the position *one* is the involvement of World Bank, ADB and ASEAN in promoting regional cooperation for the large scale infrastructure development. The position *two* is the mainstream development and state-centric approach which is the most problematic in both conflict prevention and development effectiveness. The case of Aral Sea is an example of the position *two* that created a disastrous consequence. The Position *three* is the alternative development and state-centric approach. Focusing on balanced social, environmental and economic development within the national boundary is the case. The Jordan river can be the example of the position *three* since Israel aims for the alternative development strategies but lacks the cooperation with the neighboring states that could worsen the entire river basin's development. Position *four* is the alternative development-regional approach that underlines a holistic perspective on the river basin as an interconnected ecosystem and aims to achieve small-scale, participatory and environmentally sustainable development. Based on the analysis of the framework, the position *four* is the most suitable position for implementing sustainable development in the transboundary water resource management.

4.2.Sustainable Development

Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts;

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given;
- and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs (The World Commission on Environment and Development, 1987)

Three pillars of sustainability is consisted of economic, social, and environmental sustainability (Figure 3). Ensuring social equality, promoting human rights and protecting of minority can be considered as enhancing social sustainability. Environmental sustainability can be promoted by protecting biological diversity, preventing environmental degradation, sustainable use of natural resources, and introducing ecologically sensitive projects.

Political popularity of the term 'sustainable development' has been dominating international political debates since 1972, but the implementation of sustainable development has been lagging behind from the political rhetoric. The implementation gap is more noticeable in developing countries due to their lack of financial, human, and technical resources. The demand for the implementation of sustainable development is increasing because of the increase of challenges such as environmental degradation, rapid population growth and urgent needs for the economic development. The principle of sustainable development in transboundary water resource management can be defined as the one of Integrated Water Resource Management (IWRM) which is 'improving economic wellbeing to people, without compromising social equity and environmental sustainability (Mehtonen, 2008).'

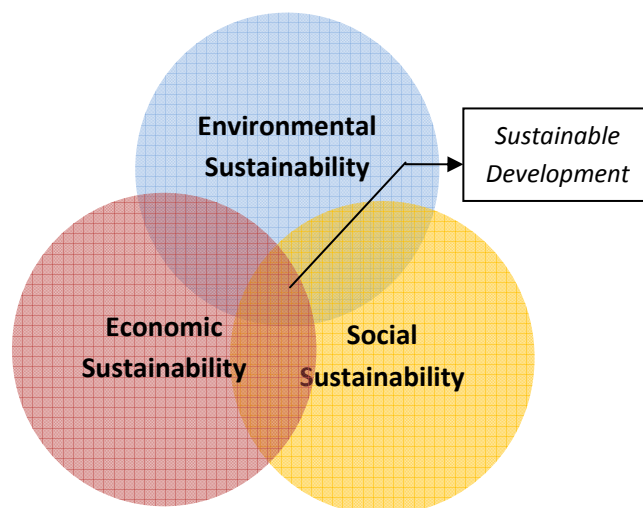


Figure 3 Sustainable Development

4.3. Integrated Water Resource Management

The Global Water Partnership defines IWRM as 'the coordinated development and management of water, land and related resources in order to maximize economic and social

welfare without compromising the sustainability of ecosystems and the environment (Global Water Partnership, 2010).’ The three pillars of IWRM are 3E which are economic efficiency, equity and environmental sustainability which is overlapping with the three pillars of sustainability in sustainable development. IWRM has five facets of environment, economy, governance, social concerns and participation (Figure 4).

IWRM is used broadly by UN and international NGOs as well as national governments. Agenda 21 states that ‘IWRM is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilization.’¹⁴ In 2002, Johannesburg Plan of Implementation called for developing IWRM and water efficiency plans by 2005, with support to developing countries.¹⁵ The term has gained its popularity through the advocacy by the major international organizations such as Global Water Partnership, UN and World Bank.



Figure 4 The facets IWRM (Varis, 2006)

Commenting on this popular and broadly used term, Biswas (2008) criticizes IWRM in aspects that;

¹⁴ Agenda 21, Article 18

¹⁵ Johannesburg Plan of Implementation, Article 26

- (1) there is no one golden rule for the water resource management since respective natural and socio- environment requires different management;
- (2) the concept of IWRM is extremely vague that he finds at least exhaustive 41 sets of issues that should be integrated;
- (3) IWRM is a water-centered concept over other issues such as land use, irrigation, agriculture, and energy;
- (4) it lacks the assessment of the possibility to be implemented; and
- (5) the term was adopted into many organization's policies without any critical assessment on the possibility to be implemented.

The obscurity of the concept generates problems to thin the political nature of natural resources management and to get easily hijacked by groups seeking to legitimize their own objectives. A generalist approach of IWRM is another issue. Each water resource has its respective characteristics, but IWRM dominates on other approaches because of its popularity (Wester and Warner, 2002).

In addition to the general criticism to IWRM, specific points are made for the transboundary water resources. The critics of IWRM points out the politics of IWRM within states are complicated enough to fail to execute its purpose, and it becomes extremely complex in transboundary water management which has a broader scale and layers of stakeholders. Although the holistic approach of IWRM aims for minimizing political fraction among stakeholders, the state interests in the transboundary water resource still remain the same. Introducing IWRM in the transboundary water resource management does not mean depoliticizing water but expanding the. IWRM of the transboundary water resource is extremely difficult to achieve in the situation when the water is highly securitized, and in that case, the formation of the transboundary water organization is impossible. Without creating a multilateral institution for the cooperation, IWRM is impossible. Incorporating the national and regional IWRM strategies is also problematic if the authority in charge of the water resource management considers the decision making on IWRM as an internal affair. Complexity of the political dynamic is the inevitable obstacle for the realization of IWRM in the transboundary water resource.

5. Mekong River Commission

MRC is an intergovernmental organization which has been carrying out the role to engage the lower Mekong states for the longest time. MRC is based on a legally binding agreement among lower Mekong states, and China and Burma remain to be dialogue partners. Compared to GSM and ASEAN-Mekong Program, MRC pronounced sustainable development and IWRM as its principles. In this chapter, the study reviews the relationship between MRC's principles and its development strategies.

5.1. History of Mekong River Commission

In 1952, the Bureau of Flood Control of the Economic Commission for Asia and the Far East of the United Nations published the initial report on the flood control and water resources development of the Mekong River Basin. Another study took place in 1956 by US Bureau of

Reclamation featuring the development potential of the Mekong river basin (Jacobs, 2002). Vietnam, Laos, and Cambodia were former colonies of France until 1954, then US influence quickly replaced French influence in the region with the beginning of the Cold War. Swain (2004) pointed out that the Mekong Committee had a primary agenda to investigate the lower Mekong basin and to plan for the large-scale projects. A team of American Engineers, headed by Raymond Wheeler who was a retired general of the US Army Corps of Engineers, was assigned to assess the potential to develop Mekong river basin. As the result of the assessment, large scale multi-function dam constructions were proposed for the hydropower generation, flood control, irrigation, improved navigation and promotion of tourism. US used to be the most important sponsor for the Mekong Committee during the 1960s. US President Lyndon Johnson praised the Mekong development project and compared it to the parallel of the Tennessee Valley Authority (Jacobs, 2002).

In 1970, the Mekong Committee announced 'Indicative Basin Plan' that included the construction of 17 mainstream and 87 tributary hydropower dams. The committee's members included Cambodia, Laos, Thailand and Vietnam, but not China and Burma. China was not a member in UN and Burma declined participation. In 1975, Cambodia, Laos, Thailand and Vietnam agreed on the Joint Declaration that included Article 10 which required a prior approval by the other riparian states if a riparian state wished to divert mainstream, in practice each riparian state was given the 'veto power'. The Joint Declaration in 1975 was reckoned that it would not be a binding document. Geopolitical situation halted the progress of the Declaration to be settled in the lower Mekong basin in 1976 by the Cambodia's participation cessation (Nakayama, 1999).

Interim Mekong Committee (IMC) succeeded Mekong Committee in 1978, but excluded Cambodia from the membership because of the rise of Khmer Rouge. IMC had limitations to address basin-wide issues without the full-membership of lower Mekong states, so it continued Mekong committee's programs that did not require participation of all Lower Mekong States such as hydrologic data gathering, water quality sampling, and flood forecasting and warning. IMC initiated an environmental study unit, low flow forecasting and salinity control projects in the delta, climate change impact assessment, watershed management, and a review of legal and organizational structures for water management. In 1988, IMC revised Indicative Basin Plan that was proposed by the Mekong Committee, it is known that the configured Indicative Basin Plan called for smaller scale of dams than cascade dams to decrease environmental impact (Jacobs, 2002). Cambodia regained its membership in 1991 followed by the UN Security Council Resolution 668 in 1990.

5.2.The Mekong Agreement

MRC is established by 'the Agreement on the Cooperation for the Sustainable Development in the Mekong River Basin' (hereafter the Mekong Agreement) which is signed by Cambodia, Laos, Thailand and Vietnam. There was an initiative that proposed by Thailand for the economic cooperation among upstream riparian states, China, Burma, Thailand and Laos in 1993 which was earlier than the Mekong Agreement. In 1994, the four countries agreed on the draft to improve navigation, transportation and tourism but the lack of Burmese side of interest was lagging the progress of the establishment of regional cooperation body (Swain,

2004). In 1993 Mekong Working Group Meeting II, opening a room for the future participation for Burma and China was agreed.

Sneddon and Fox (2006) argue that the Mekong Agreement is a crucial component in the regional geopolitical environment. They summarized the Mekong Agreement to “an overarching emphasis on the importance of channels and the Mekong mainstream throughout the document, and a discourse centered on ‘equitable utilization’ of the Mekong’s water, a goal to be achieved through procedures of ‘notification’ and ‘prior consultation’ among the basin states.” Elhance (1999) too predicted a positive outcome from the national and international effort on the Mekong Agreement.

The Mekong Agreement states the equity of water share among the riparian states from the upstream to downstream, considering the Mekong as a water course. The Agreement emphasized on prior consultation on the development plans that take place in tributary and mainstream. The organizational framework set up by the Agreement is consisted with the Council, the Joint Committee and Secretariat. The Council is a decision making body to decide policy related matters. The Joint Committee is a policy implementation body and the Secretariat’s role is to execute policies. Nakayama (1999) pointed out that the Mekong Agreement in 1995 covers also tributaries and has different rules for the wet and dry season. More elaborated articles on the managerial aspect on the river basin could be seen as a more evolved international agreement.

The difference between ‘notification’ and ‘prior consultation’ are the prior one is simply to notify other riparian states and the latter one is to oblige riparian states to have a dialogue. According to the Mekong Agreement, ‘notification’ is required on the development projects on tributary in the national territory, and ‘prior consultation’ is required in the two specific cases of (1) inter-basin diversions from the mainstream during the wet season; and (2) intra-basin uses on the mainstream during the dry season which only can be applicable to stretches of the mainstream that flow within a state’s national territory (Sneddon and Fox, 2006).

Therefore, a riparian state is required to notify the dam constructions in their national territory but it does not mean MRC necessarily has to open a dialogue about the project. In the Council, a unanimous vote is required to make a decision that protects national self-interest of riparian states by casting a vote against it. The Mekong Agreement, again, has a stress on the sovereign equality and territorial integrity as a principle. Although MRC is trying to compensate the impaired legality of the Agreement through launching policy recommendation programs such as Sustainable Hydropower Initiative and the Rapid Basin-wide Hydropower Sustainable Development Tool (Thuy, 2011), the interpretation of the Agreement itself has its limitation on the prevention of dam constructions that can influence to the basin-wide water flow.

Sneddon and Fox (2006) argue that the limited legal function of the Mekong Agreement comes from perceiving the Mekong as a watercourse rather than a basin. The major legal enforcement of the agreement is nevertheless only taking place in the part of watercourse that flows across the border (Radosevich, 1995). The reason to use the word ‘basin’ instead of

‘system’ or ‘watercourse’ was to remain consistency from the language of the 1957 Statute and 1975 Declaration. The international community represented by UN, World Bank, and other western donors supported the Mekong Agreement that could have urged the lower Mekong states to use the word ‘basin’ to apply the donor support to the entire basin development. The hope to receive more international support for the basin development has become the reality with the launching the Basin Development Plan and other initiatives in MRC. Nakayama (1999) argues that comparing the Mekong Agreement in 1995 to the Joint Declaration in 1975, the socioeconomic disparity among the riparian states created different national interests among the Lower Mekong States. Thailand enjoyed the rapid economic growth throughout 1980s and 1990s while other riparian states were recovering from the political turmoil (Figure 5).

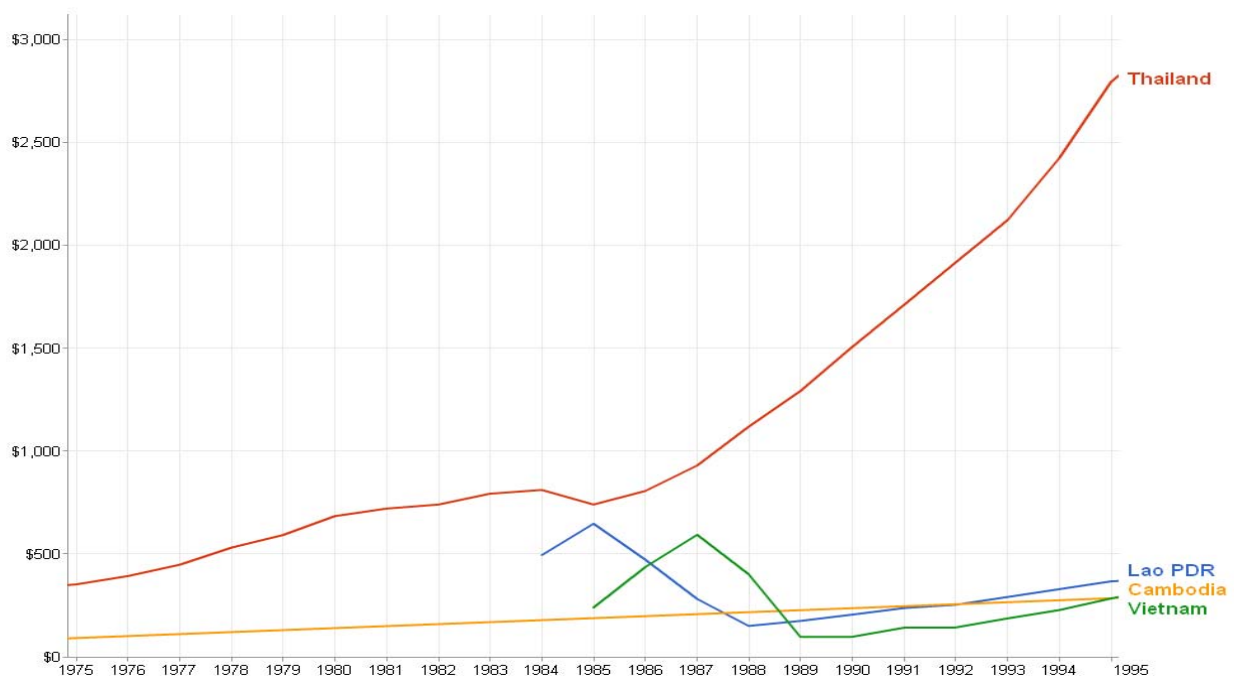


Figure 5 GDP per capita of the Lower Mekong States (unit: USD)¹⁶

5.3.MRC Programs

According to a MRC’s annual funding report published in May 2009, eight programs, one plan, one project and two initiatives have been operated by MRC and its partner organizations (Table 3). All the programs, plans, projects and initiatives are based on the 1995 Mekong Agreement, more precisely, the Environment Program, Information and Knowledge Management Program, Flood Management and Mitigation Program, Drought Program, Agriculture, Irrigation and Forestry Program and fisheries program have a clear connection to clauses in the Agreement. The Climate Change and Adaptation Initiative is based on a linkage between climate change and water in Bates *et al.*(2008) and (Eastham *et al.*, 2008). The controversy on the hydropower development has highlighted the need for a proper assessment which is handled through the Initiative on Sustainable Hydropower. Since

¹⁶ Source: WORLD BANK. 2011. *GDP per Capita* [Online]. Available: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD> [Accessed 03-06 2011].

China and Burma provide the data for the water flow to MRC, the data sharing and flood management program can function adequately in the whole basin-wide.

Table 3 MRC Programs¹⁷

| Program | Period | Function | MRC Division | Funded by |
|---|---------------|---|----------------------------|--|
| Environment Program | 2006- | <ul style="list-style-type: none"> • Environment monitoring and protection | Environment Division | Denmark, Sweden, Australia, France and US |
| Climate Change and Adaptation Initiative | 2009- | <ul style="list-style-type: none"> • Analysis and modeling • Climate change communication | Environment Division | Australia, Finland and Sweden |
| Basin Development Plan | 2001- | <ul style="list-style-type: none"> • IWRM • Participatory approach | Planning Division | Australia, Denmark, Japan and Sweden |
| Mekong- Integrated Water Resource Management Project | 2009- | <ul style="list-style-type: none"> • Promoting dialogue and coordination • Followed by Water Utilization Project | Planning Division | Australia and World Bank |
| Integrated Capacity Building Program | 2006- | <ul style="list-style-type: none"> • Integrated training for the riparian states • Gender mainstreaming | Human Resources Section | Australia, Finland and New Zealand |
| Information and Knowledge Management Program | 2006- | <ul style="list-style-type: none"> • Providing tools for data and information management • Decision support framework and systems | Technical Support Division | Australia, Finland and France |
| Flood Management and Mitigation Program | 2003- | <ul style="list-style-type: none"> • Disaster management • Land management • Data sharing with China | Technical Support Division | ADB, Denmark, European Commission, Germany, Japan, Netherlands, US |
| Drought Management Program | 2009- | <ul style="list-style-type: none"> • Emergency management | Technical Support Division | MRC governments |
| Agriculture, Irrigation and Forestry Program | 2006- | <ul style="list-style-type: none"> • Irrigation • Watershed management, | Operations Division | Challenge Program on Water and Food, Germany and Japan |
| Navigation Program | 2002- | <ul style="list-style-type: none"> • Transportation planning • Increase trade opportunity | Operations Division | Australia and Belgium |
| Fisheries Program | 2006- | <ul style="list-style-type: none"> • Researching and modeling on fisheries ecology | Operations Division | Denmark and Sweden |
| Initiative on Sustainable Hydropower | 2008- | <ul style="list-style-type: none"> • Hydropower assessment | Operations Division | Finland, Japan ASEAN Integration Fund |

¹⁷ MRC 2010a. MRC Work Program.

MRC emphasizes on the synchronized manner in the programs management; giving customized attentions for the individual state's needs in the program; engaging with the stakeholders; and promoting partnership.¹⁸ MRC also underlines the principle of IWRM as a principle for the Basin Development Plan. The Basin Development Plan is a basin-wide, long-term development framework that constitutes the linkages between the hydrology, geography, and socioeconomic conditions. The Basin Development Plan is the most prominent program where implementation of the MRC participatory approach (Sneddon and Fox, 2007).

There are 12 bilateral donors, two multilateral banks and one NGO support MRC programs. Australia is the biggest donor to support the most programs, and Scandinavian donors, Denmark, Sweden and Finland follow the next biggest group of donors. Japan supports the Initiative on Sustainable Hydropower through ASEAN in which Japan's influence is growing through the new ASEAN +3 platform. Strong donor influence is shown in the program report that only Drought Program is funded by fully Mekong riparian state governments. Gender-mainstreaming and emphasis on participatory approach are the principles that donor organizations prefer in development projects.

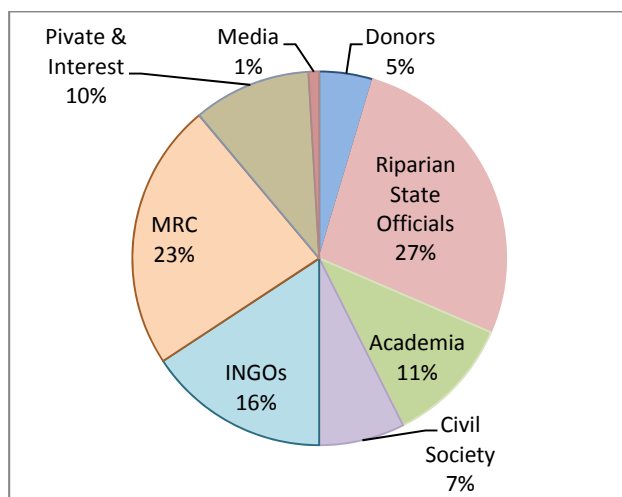
The Basin Development Plan had the Stakeholder Consultation Forum in March 2008 before the donors' review took place in May. The participants are categorized according to the affiliations such as donors, riparian country officials, academia and civil society, international NGOs, MRC staffs and consultants, private & interest and media, and the proportion of the participants are showed in the figure 6. Among the 27 participants who are categorized as academia and civil society, 12 participants are from research institutions or universities; 9 participants are from International NGOs and their regional branch, and 8 participants represent civil society. Therefore the actual proportion of civil society participation in the stakeholder meeting is 7.3%.¹⁹

The sessions in the meeting were focused on how to improve the stakeholder participation in the Basin Development Plan and were consisted with various topics which are closely related to the civil society such as poverty alleviation and decision making process. If there were more participants from the civil society in the stakeholder forum, the voice of villagers could have been heard well. The meaningful point of the forum is that the participation approach was discussed by the government officials. Not only judging from the number of participants from the civil society, one of the findings of Sneddon and Fox (2007) suggests that the National Mekong Committees are aiming to implement the participatory agenda through a series of public consultations. The problems confronting the National Mekong Committees are caused by the lack of interest from other Ministries.

¹⁸ MRC Annual Report, 2008

¹⁹ MRC, 2008, list of participants http://www.mrcmekong.org/free_download/BDP-consultation.htm [Accessed 04-15-2011].

Figure 6 the Affiliations of Participants in the Basin Development Plan Stakeholder Forum in 2008²⁰



The MRC less prioritizes strategic outputs related to sustainable land and water development, water supply and sanitation and environmental issues. According to the MRC Annual Report 2008, 65% of the strategic outputs are prioritized as ‘high’, 31% as ‘medium’, and 4% as ‘low’.²¹ Water supply and sanitation to improve people’s lives and environment is all ‘low’ prioritized. The outputs in the environment category are also less prioritized than the average. In the other hand, the outputs related to IWRM are 100% highly prioritized that is the reflection of the implementation of IWRM in practice. Considering MRC is an important organization for the Mekong riparian states to acquire donors support for the development projects, the prioritization of the development outputs in MRC is lacking environmental and social emphasis over the IWRM and economic development agendas.

6. Hydropower Development

The notion that hydropower can pave the way for development seems to prevail in the Mekong river basin. The known benefits of the hydropower development are such as; increasing secure water supply to the urban population; providing energy; controlling floods; and increasing crop intensity by enhanced irrigation (Weaving, 1996). Hydropower generation is also known as a ‘green’ source of power generating contrasting to fossil fuels. The rationale behind the hydropower development in the Mekong river basin is a combination of the interests of the individual state, donor agency and private companies.

6.1. Background of Hydropower Development in Mekong River Basin

The justification for hydropower development consists with two rationales; first, to solve the future energy demand in the region; and to gain a large amount of foreign investment (Bakker, 1999). The energy demand of Thailand is rapidly increasing because of its fast industrialization and economic growth.²² Other lower Mekong states have been experiencing the energy poverty that concludes a possibility to increase regional cooperation in energy

²⁰ Adopted from: MRC, 2008, list of participants. http://www.mrcmekong.org/free_download/BDP-consultation.htm. [Accessed 04-15-2011].

²¹ MRC Annual Report, 2008, Annex: MRC Strategic Outputs 2006-2010

²² International Energy Agency. http://www.iea.org/stats/pdf_graphs/THTPES.pdf. [Accessed 2011-04-05].

sector (Zhai, 2009). ADB's GMS power grid project has combined the hydropower development, power transmission and power trade.²³ Through the power trade as a regional cooperation tool, a country holds a hydropower station can earn foreign currency by selling the electricity.

Some donors have a strong tradition to support the construction of hydropower stations such as Sweden, Norway and US and they have influenced the dam construction projects in the downstream Mekong for years (Usher, 1997). Usher (1997) argues that the construction firms, bilateral aid agencies and international consultants in the Nordic countries were formed the association to promote building hydropower dams in Laos. Usher and Ryder (1997) illustrates an example of the construction of Theun Hinboun Dam in 1995. The EIA was done by Norconsult, one of Norway's leading hydropower consulting firms, and it was financed by NORAD. Norconsult concluded that there would be no negative impact on fishery and environment and no needs for resettlement of population. Because of the hectic schedule of the assessment, the EIA could not have any impact on the decision making of the design of the dam.

The discourse analysis by Bakker (1999) shows that the donors have the attitude towards the Mekong as 'the underutilized and unproductively variable river.' The attitude is not far from Raymond Wheeler's assessment on the development potential of the Mekong river basin in 1950s. In the past, the colonial powers exploited the rich natural resources of the lower Mekong states. Although the colonialism disappeared, the perception towards the region is still remained in the past. 'Discovering' the development potential of the Mekong and 'utilizing' water as a scarce natural resource are the language originated from the donors at the beginning of the Mekong river basin development. From the beginning of the Mekong Committee, the development potential of the Mekong River Basin was addressed by US President Johnson and supported broadly by Western block countries. During the Cold War, the imaginary image of the Mekong river basin as one united anti-communist area was developed. The development of the Mekong river basin was delayed because of the regional conflicts during 1970s and 1980s.

World Bank also further addresses the Mekong river as 'the only remaining major international river with limited development', and emphasizes on 'high utilization-potentials for further utilization'. World Bank has prioritized the promotion of the basin wide development with the effective and efficient utilization of water resources in water resource management (World Bank, 2007). Linking poverty and hydropower development can be also found in the World Bank strategy for water resource management (World Bank, 2004). In this trend of the World Bank policy, the hydropower development is considered as the development project which can connect the poverty alleviation and economic development.

The major hydropower potential in the Mekong is focused on China and Laos (Table 4). Laos opened up its economy to receive foreign investment in 1980s, and it had the influx of private funds that preferred to Build-Own-Transfer (BOT) type of hydropower development (Bakker,

²³ ADB, 2008

1999). BOT projects can open up the opportunity for the private companies to come to a country where does not necessarily have enough technical staffs to control the dam operation.

Table 4 Hydropower potential in the greater Mekong subregion (Bakker, 1999)

| Country/ Province | Hydropower potential (MW) | (%) |
|----------------------|------------------------------|-----|
| China | 13,000 | 42 |
| Burma | - | - |
| Laos | 13,000 | 42 |
| Cambodia | 1,000 | 3 |
| Thailand | 2,200 | 7 |
| Vietnam | 2,000 | 6 |
| Total | 31,200 | 100 |

6.2. Hydropower Development in the Downstream

There are 11 dams (Figure 7) are planned in the lower Mekong basin mainly 8 in Laos (Pak Beng, Luang Prabang, Xayabouri, Pak Lay, Sanakham, Lat Sua and Don Sahong), 2 in Cambodia (Stung Treng and Sambor) and 1 in Thailand (Ban Koum). Utilizing the private finance in the dam construction has accelerated the projects. Since early 2006, Malaysian, Chinese and Thai energy companies signed Memorandum of Understanding with the Government of Laos for feasibility study in 2006 and 2007 (Table 5). In Laos and Cambodia, there is not enough government funding to build dams, but using BOT financing scheme resolves the problems by the lack of the government funding. Considering that water is a public good, the government of Laos and Cambodia are allowing the privatization of the right to control the water flow to energy companies.

MRC states that ‘the development of mainstream dams in the Mekong Basin is perhaps the most important strategic decisions that the member states of the MRC have faced since the signing of the 1995 Mekong Agreement on the cooperation for sustainable development of the Mekong basin.’²⁴ MRC conducted a Strategic Environmental Assessment (SEA) to assess the environmental impact of the dams in depth without the interference by the construction companies and donors. According to the SEA report on 11 mainstream dams on the downstream, the impact of the new downstream dams would cause the extinction of several aquatic species, the destruction of habitats of some species and hardening the long distance migration of some species from upstream to the delta. In addition, water quality and the quantity of sediments will drop in the downstream, and especially 75% drop of sediments will affect the soil fertility and fish spawning. 80% of lower Mekong basin population is depending on some kind of natural resources from the Mekong, and the hydropower dams will affect the live of the locals. The number of villages will be directly affected by the dams is estimated up to 190 and it includes 63,112 villagers (ICEM Australia, 2010).

²⁴ MRC Website <http://www.mrcmekong.org/ish/hydro-n-1995-agreement.htm>

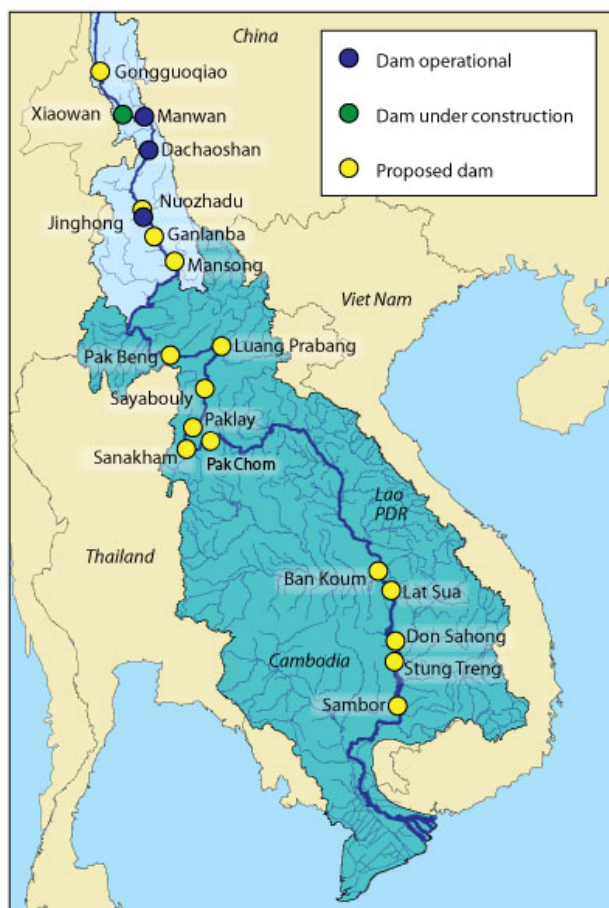


Figure 7 Proposed and Operational Hydropower Dams on the Mainstream Mekong²⁵

Table 5 Planned Dams in the Downstream Mekong²⁶

| Site | Developer | Power destination for | Dam size (long × high) | Installed Capacity (MW) | Estimated people resettled |
|-----------------------------|--|-----------------------|------------------------|-------------------------|----------------------------|
| Pak Beng, Laos | Datang International Power Generation Co. Ltd, China | Thailand | 943m × 76m | 1,230 | 6,700 |
| Luang Prabang, Laos | Petrovietnam Power Corporation, Vietnam | Vietnam | 1,106m × 68m | 1,410 | 12,966 |
| Xayaburi, Laos | SEAN & CH. Karnchang Public Company Ltd, Thailand | Thailand | 810m × 32m | 1,260 | 2,130 |
| Pak Lay, Laos | CIEC & Sinohydro Corporation, China | Thailand | 630m × 35m | 1,320 | 6,129 |
| Sanakham, Laos | Datang, China | Thailand | 1,144m × 38m | 700 | 4,000 |
| Pak Chom, Laos & | No developers yet, pre-feasibility study | NA | 1,200m × 55m | 1,079 | 535 |

²⁵ MRC, 2010

²⁶ Adopted from: ICEM AUSTRALIA 2010. SEA of Hydropower on the Mekong mainstream. Victoria: MRC. p.30-31

| | | | | | |
|------------------------------|--|----------|-------------|-------|--------|
| Thailand | | | | | |
| Ban Koum, Thailand | Ital-Thai, Thailand | Thailand | 780m ×53m | 1,872 | 935 |
| Lat Sua, Laos | Charoen Energy Water Asia Co., Thailand | Thailand | 1,300m ×27m | 686 | 0 |
| Don Sahong, Laos | Mega First Corporation Berhad, Malaysia | Thailand | 720m×8.2m | 240 | 66 |
| Stung Treng, Cambodia | Song Da Com., Vietnam ²⁷ | unknown | 1,100m×22m | 980 | 10,000 |
| Sambor, Cambodia | China Southern Power Grid Company, China | Vietnam | 1,800m×56m | 2,600 | 18,000 |

Thai environment NGOs are the strongest and the most active among the lower Mekong states that Thai NGOs has successfully delivered the villagers opinion to the Thai Government and MRC.²⁸ In January 2011, 25 international NGOs and Thai Peoples Network for Mekong submitted two petitions to MRC Secretariat and the member states that urged MRC and the member states to increase accountability and transparency of the decision-making process on the Xayaburi dam and to follow the recommendations by the SEA report on the 11 lower Mekong basin dams.

The GMS power grid project (Figure 8) was discussed in the first GMS Summit in Phnom Penh in November 2002, and six member states signed an Inter-Governmental Agreement on Regional Power Trade in the GMS. ADB provided three investment loans and 11 technical assistances with a total amount of \$487 million to promote regional cooperation in the energy sector which includes the GMS Regional Indicative Master Plan on Power Interconnection.²⁹ ADB also supports to build Nam Theun II hydropower station in a tributary of the Mekong in Laos to transfer electricity to Thailand. Nam Theun II dam is constructed by National Thermal Power Corporation, the largest state-owned power generating company in India, and Agence Française de Développement, European Investment Bank and World Bank support the project. Not only Nam Theun II but also Nam Theun III and Na Bong hydropower development project are waiting for the approval.

²⁷ Previous MoU with a Russian company lapsed and the Song Da company agreed to carry a feasibility study.

²⁸ BANGKOK POST. 2010. *Govt urged to scrap Mekong dam plans* [Online]. Bangkok Post. Available: <http://www.bangkokpost.com/news/local/34459/govt-urged-to-scrap-mekong-dam-plans> [Accessed 2011-02-10 2011].

²⁹ ADB 2004. Proposed Technical Assistance. *ADB Technical Assistance Report*. Asian Development Bank.

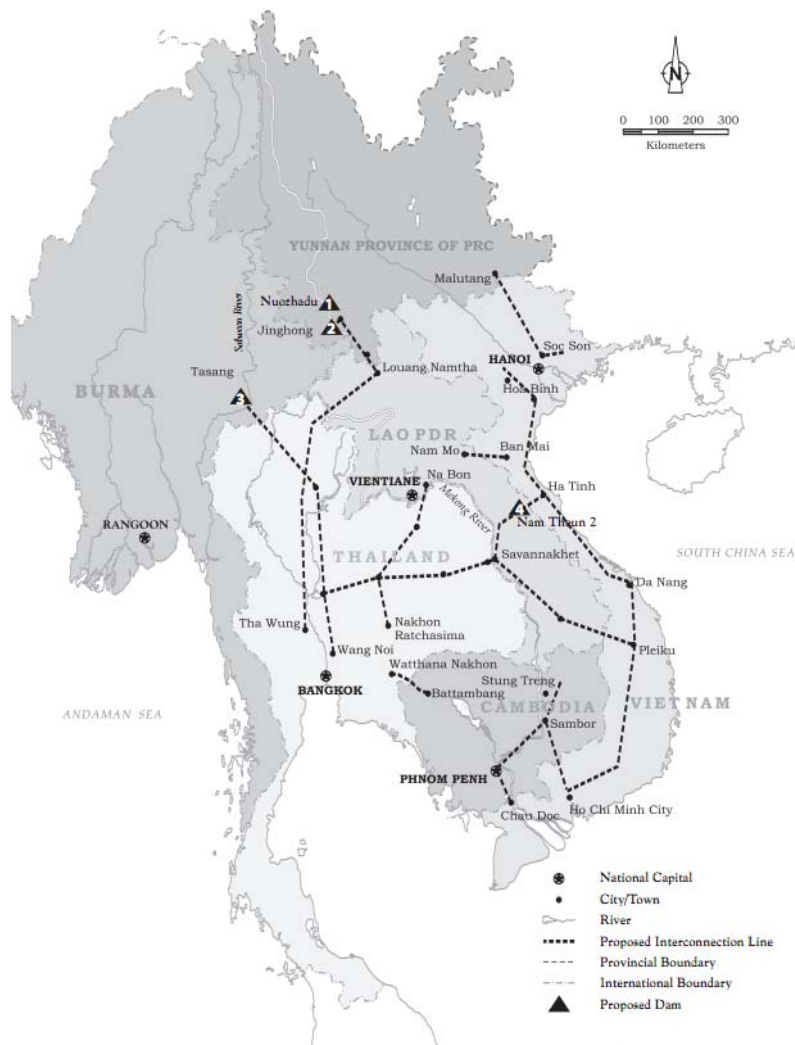


Figure 8 Proposed Mekong Power Grid (IRN, 2003, adopted from ADB)

6.3. Hydropower Development in the Upstream

China is new and active in the hydropower development in the Mekong river basin compared to the lower Mekong basin. China began constructing the Manwan dam in 1986 and completed in 1996.³⁰ China's action was absolutely unilateral because it was done without the consultation with any other riparian states, and lower Mekong states did not even acknowledge China's hydropower plans until the early 1990s (Goh, 2004).

China produces the most electricity from the hydropower in the world, and hydropower supplies 16.9% of domestic electricity in China.³¹ In the Lancang-Mekong River has a total exploitable capacity of an estimated 23,480 MW.³² There are 8 dams which are either planned, under construction or completed in Lancang-Mekong River (Table 6). The Yunnan province is a major electricity provider to near industrialized areas such as Guangdong province. Total

³⁰ YU, Y. 2005. *Missing Voices on the Nu River Dam Project* [Online]. Available: <http://www.worldwatch.org/node/141> [Accessed 03-31 2011].

³¹ INTERNATIONAL ENERGY AGENCY 2010. *Key World Energy Statistics 2010*. Paris: International Energy Agency.

³² Chincold 2003 web pages of Chinese National Committee on Large Dams; at <http://www.icold-cigb.org.cn>

16,250 MW capacity to generate electricity is expected from the 8 Lancang-Mekong river dams.

Table 6 Lancang-Mekong River Dams³³

| Site | Dam height (m) | Installed capacity (MW) | Estimated cost | Current status | Estimated completion |
|--------------------|----------------|-------------------------|--|--------------------|----------------------|
| Gongguoqiao | 130 | 750 | | Planned | n/a |
| Xiaowan | 300 | 4200 | 25 billion yuan (3 billion USD) Chinese bank loans | Under construction | 2012 |
| Manwan | 126 | 1500 | 200 million yuan | Completed | 1996 |
| Dachaoshan | 110 | 1350 | 800 million USD Funded by ADB | Completed | 2003 |
| Nuozhadu | 254 | 5850 | 3.6 billion USD | Under construction | 2017 |
| Jinghong | 118 | 1750 | 1 billion USD Investment from Thailand (electricity buyer) | Completed | 2009 |
| Ganlanba | n/a | 250 | n/a | Planned | n/a |
| Mengsong | n/a | 600 | n/a | Planned | n/a |

The Chinese government views the hydropower development in the Lancang-Mekong river as a domestic issue, since the dam sites are located in the Chinese territory (Goh, 2004). The government officials acknowledge the concerns regarding the preserving biodiversity by the environmental NGOs and international media (Yang, 2005, Yardley, 2004). The problems by air pollution, biodiversity loss, land degradation, depleted fisheries, desertification and natural disasters induced by overexploitation of natural resources have triggered public attention to environmental protection and so as to the government's responses in China. In recent years, the Yunnan provincial government has paid attention to the environmental protection through biodiversity conservation. For example, the government banned logging in the watershed in Xishuanbanna prefecture; 111 established protected areas, 5.1% up to 6% of the total land area; new afforestation initiatives, 33% of total land area (Goh, 2004). Although China has increased its awareness in environmental protection, there should be more works have to be done to halt the further environmental degradation in China (Liu and Diamond, 2005).

³³ Information is collected from; KESKINEN, M., MEHTONEN, K. & VARIS, O. 2008. Transboundary Cooperation vs. Internal Ambitions: The role of China and Cambodia in the Mekong region. In: PACHOVA, N. I., NAKAYAMA, M. & JANSKY, L. (eds.) *International Water Security: Domestic Threats and Opportunities*. Tokyo: United Nations Press. p. 92; and GOH, E. 2004. China in the Mekong River Basin: The regional security implications of resource development on the Lancang Jiang. *The Working Paper No. 69*. Institute of Defense and Strategic Studies Singapore. p.3

The experts point out that there is both positive and negative environmental impact of the 8 Lancang-Mekong dams on the river. The positive impacts are such as; the higher water level in the delta area can prevent the saline water intrusion; and the higher water level in the downstream will improve the navigation condition (Kummu and Varis, 2006). The negative impacts includes; the extinction of some endemic fish species such as *Percocypris retrodosalis*, a large predatory carp (Roberts, 2001); the significant decrease in the sediment discharge in river delta and the increased soil erosion in downstream (Xue et al., 2010); the changes in the Tonle Sap's ecosystem including the permanent flooding in the lake's seasonally flooded forests and other habitats (Kummu and Varis, 2006); and dry-up the downstream during the water filling up period of the dams (Roberts, 2001).

Between February and April 2010, some parts in the lower Mekong basin experienced a record low water flow.³⁴ MRC's analysis concluded the drought conditions caused the low water levels (MRC, 2010b), but without China's cooperation on the analysis on the impact of the Chinese dams, the conclusion of MRC analysis can be interpreted as a preliminary conclusion. Since lower Mekong states did not acquire a direct evidence that the Chinese dams are the cause of drought, MRC remains silence towards the Chinese dams (Mancan-Markar, 2010, BBC, 2010).

The Chinese government's response is only limited to the Chinese territory where will be or is affected by the dams. The communication channels between China and the Lower Mekong States are limited to the hydrological data sharing, GMS power grid project and navigation (Goh, 2004). China and Burma are the dialogue partners in MRC, but they are excluded from the annual Council meetings which could have been an opportunity to exchange information and to discussion cooperation.

Contrasting to the absence of Chinese participation in MRC, China is actively involving with the GMS power grid project. Jinghong and Nuozhadu dams will provide electricity to the GMS power grid and transfer one third of the produced electricity to Thailand. The Yunnan province has been supplying electricity to Burma since 1995, Laos since 2002 and Thailand and Vietnam since 2004, and the transferred amount in the first half of 2005 was 87m kWh (Goh, 2006b).

The importance of the Mekong to China is not limited to the hydropower generation scheme, but to use the Mekong for the oil and transportation route instead of Malacca Strait which has been highly congested a long time ago. Since China and ASEAN signed the free-trade agreement, the trade between China and ASEAN countries through the Mekong River is more frequent than ever. China signed navigation agreement with Mekong riparian states in 2002, China is enjoying the benefit of having Mekong as a transportation route to Southeast Asia and to South Asia particularly its strong partner India (Goh, 2006b).

6.4. The Transportation Route

The development of transportation route in the Mekong required the removal of reefs, rapids and shoals. The danger of oil spill on the Mekong is still a threat to the Mekong ecosystem.

³⁴ MRC, 2010

Environmental groups and local communities in Thailand claim that the clearing these rapids and reefs destroys the fish breeding grounds, increase river flow and erosion of soil that will increase the risk of disasters like flooding. Since China signed Commercial Navigation Agreement in April 2002 with Burma, Laos and Thailand, 11 major rapids, shoals and 10 reefs were removed between the Port of Simao in Yunnan and the city of Luang Prabang in Laos. The navigation improvement projects are taking place in all the signatories of the agreement that includes the route between Simao in China and Chiang Rai in Thailand and the Cambodian side of the Mekong. The environmental impact of clearing up the rapids and shoals could cause the significant damages on breeding grounds of fish species and tourism attractions that support local livelihood (Swain, 2004). The controversy over the process to the decision making on the transportation route is not only regarded as the environmental concerns, but also the lack of transparency and accountability of the decision making.³⁵

Commercial navigation on the Mekong is one of the main infrastructure development areas that China is interested in. According to the 2008 statistics, China imports approximately 180 million tons of oil a year and the number is rising.³⁶ Most of the oil imports passes by Malacca Strait which is already highly congested. The additional oil transportation routes is extremely important for China. In 2006, China, Laos, Burma and Thailand signed an agreement to cooperate on the shipping of oil along the Mekong which allows 1,200 tons of shipping quota per a month initially, yet the quota is expected to increase up to 70,000 tons a year.³⁷ According to the agreement, China opens Simao, Jinghong, Menghan and Guanlei; Laos opens Ban Sai, Xiengkok, Muongmon, Ban Khouane, Houaysai and Luangprabang; Burma opens up Wan Seng and Wan Pong; and Thailand opens Chiang Sean and Chiang Khong.

Trade and economic relations between China and Mekong riparian states increased three-fold between 2003 and 2008 (Figure 10). The role of the Mekong has increased significantly as a commercial transportation route for trade goods among Mekong riparian states. Between 2001 and 2006, there were two million tons of goods that were transported through the Mekong. China enjoys the increased export of fruits and vegetables to Thailand through the Chiang Sean port in Northern Thailand.³⁸ At the same time Thailand has found a market for the exotic fruits and vegetables in China (Hamlin, 2008). Burma and Laos also have been seeking the benefits from the enhanced trade route in the Mekong. Just south of the Yunnan, in Laos and Burma, it has a large area of intact forest which has never been commercially used because of its remoteness. If the area becomes to be possible to navigate, large scale logging can happen (Roberts, 2001). Considering that China is a main supplier of consumer goods to Burma, Wan Seng and Wan Pong are a gateway for the Chinese goods to Burma.

³⁵ MACAN-MARKAR, M. 2007. *China Turns Mekong Into Oil-Shipping Route* [Online]. Bangkok: Inter Press Service. Available: <http://ipsnews.net/news.asp?idnews=36074> [Accessed 03-20 2011].

³⁶ International Energy Agency, 2008

³⁷ XINHUA NEWS AGENCY. 2006. *China Starts Shipping Oil via Mekong River* [Online]. Beijing, China: China Internet Information Center. Available: <http://www.china.org.cn/english/MATERIAL/194278.htm> [Accessed 03-11 2011].

³⁸ ENGLAND, V. 2006. *Trade Turns Mekong into a River of Plenty* [Online]. New York: New York Times. Available: <http://www.nytimes.com/2006/07/05/business/worldbusiness/05iht-transcol06.2124267.html> [Accessed 04-20 2011].

China has been strongly supporting to develop commercial trade route in the Mekong, and other riparian states also expect spill-over economic benefits from the integrated economy with China. Goh (2006b) argues that the more developed riparian states have gained from the regional cooperation in transportation and China's influence to other Mekong states was showed in the GMS Summit in 2005. Chinese Premier Wen Jiabao emphasized the 'equal-footed consultation with mutual respect' with GMS states that represents China's urge to become a leading country for the regional cooperation.³⁹ The environmental and social impact of the enhancing navigation is more severe in the lower Mekong states because of the direct impact on the fisheries. China is the country gains the most from the Mekong transportation route and at the same time the country loses the least. The Lower Mekong States gain a little but lose more than the gain.

7. The Geopolitics of the Mekong River Basin

Geopolitics is a factor that can decide the possibility of the regional cooperation. The domestic political situation in the Mekong riparian states has changed rapidly during last 60 years, and the relationship between the states also has been affected by the changes. In the extended line, the regional political changes lead to the change in the regionalism. Reviewing the geopolitics in the Mekong river basin, the rise of China is considered as the most critical change in the Mekong river basin development in the recent years.

7.1.China's increased global role

The Chinese economic reform started in 1978 by Deng Xiaoping, liberalizing the Chinese economy from the socialist state-controlled economy. An agricultural society with a long history of being the regional hegemony was turning to the liberalized economy with the massive potential power. After the Tiananmen Protest, the balance between the national ideology with the market based economy and the communist party regime has settled in China's political economy. China then created a record of rapid economic growth along the way through 1990s. When China joined World Trade Organization in 2001, the influence of Chinese economy expanded to the globe. In 2011 February, China passed Japan's Gross Domestic Products (GDP) with \$5.88 trillion comparing to Japan's \$5.47 trillion. Considering that China's GDP was only \$2.3 trillion in 2006, China's economy is extremely fast growing (Figure 9).⁴⁰

³⁹ MINISTRY OF FOREIGN AFFAIRS OF THE PEOPLE'S REPUBLIC OF CHINA. 2005. *A Stronger Partnership for Common Prosperity* [Online]. Available: <http://www.fmprc.gov.cn/eng/wjdt/zyjh/t203764.htm> [Accessed 04-14 2011].

⁴⁰ TABUCHI, H. 2011. *China Replaced Japan in 2010 as No. 2 Economy* [Online]. Tokyo: New York Times. Available: <http://www.nytimes.com/2011/02/14/business/global/14yen.html> [Accessed 02-13 2011].

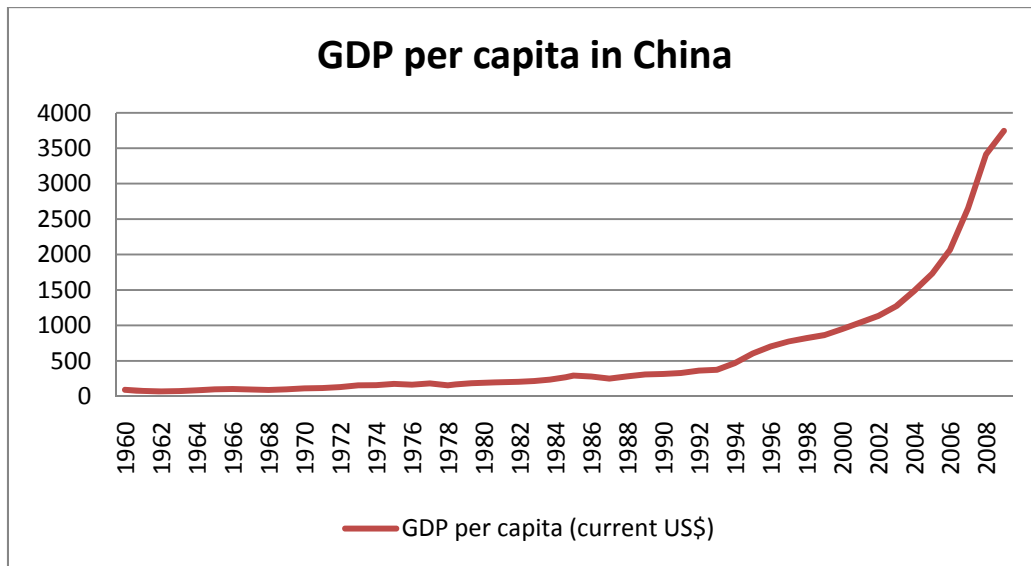


Figure 9 GDP per capita in China from 1961 to 2009⁴¹

The economic growth has led the social development and improved living standards in China. Human Development Index is almost doubled in 2010 comparing to 1980, and life expectancy increased from 66 to 73.5 in 2010.⁴² However there are critics who are critical to the increased social and economic disparity and ecological disasters that pay non-economic deficits for the economic development (Tang, 1999, Liu and Diamond, 2005, Yang and Hu, 2008, Wu, 2011).

As well as the economic growth, the estimated average annual defense budget growth of Chinese military is 11.8% between 1996 and 2006.⁴³ Military power of China has grown immensely since 1989, that began with the government paid off the military when the military had saved the regime in the Tiananmen massacre. Whether China sees the external threats as the reason for building up its military or not, Chinese military is highly influenced by its export-oriented economic policy (Waldron, 2005).

7.2.China and Southeast Asia

China's influence to Southeast Asia is not only in the economic interests, but also the interests in regional security. Vietnam, Laos, and Cambodia share the history of having a communist regime and China had some influence on the regimes in the past. The Sino Vietnamese War in 1979 was caused by the Vietnamese invasion and occupation in Cambodia in 1978, and it showed the Chinese attempt to assign a regional authority in Southeast Asia through Khmer Rouge movement. In the recent years, China's influence to the Southeast Asia is focused on the economy and trade. The Free Trade Agreement between China and ASEAN in 2001 has been boosting the economic cooperation between them, and the discussion on the creation of 'Asian Economic Community' is an emerging issue (Chantavanich, 2000). China has become an important partner of ASEAN with other East

⁴¹ Source: World Bank

⁴² Source: UNDP Human Development Report, 2010.

⁴³ Source: US DEPARTMENT OF DEFENSE 2007. Military Power of the People's Republic of China. Washington D.C.

Asian economic powers, Japan and South Korea, by creating ASEAN +3. Trade and economic relations between China and the Mekong riparian states increased three-fold between 2003 and 2008 (Figure 10). China's trade deficit to the Mekong riparian states was reversed in 2007 for the first time (Figure 11). More country specific, China exports more to Cambodia and Burma and imports more from Thailand in the continuous trend between 2003 and 2008.

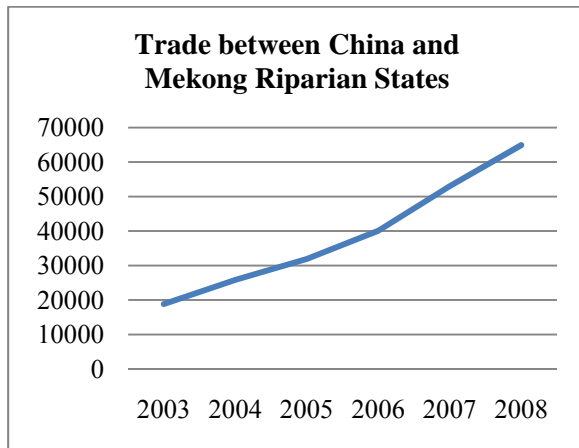


Figure 10 Total import and export between China and Mekong riparian states (unit: million USD) Source: China Statistical Yearbook, 2005, 2006, 2007, 2008 & 2009

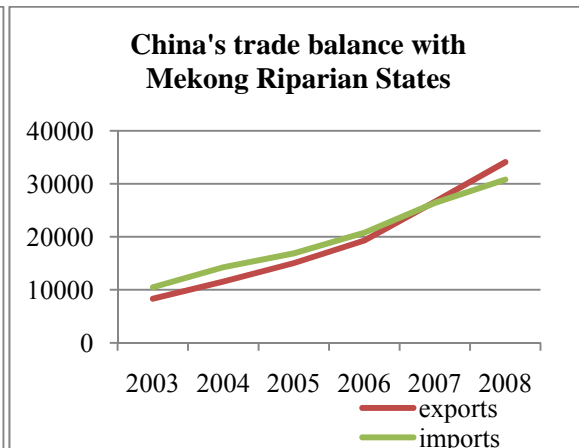


Figure 11 China's trade balance with Mekong Riparian States (unit: million USD) Source: China Statistical Yearbook, 2005, 2006, 2007, 2008 & 2009

A stronger economic tie between China and the Mekong riparian states is observed. However the Sino-ASEAN trade and economic relationship has not fully integrated in the aspect of capital investment and an export destination to each other. Wong and Chan (2003) argue that ASEAN and China are competing for receiving the Foreign Direct Investment from the developed countries rather investing to each other's economy. China's growing manufacturing capacity was already occurred as a threat to ASEAN to maintain its export oriented economy.

The general characteristic of ASEAN countries is on the emphasis on the respecting sovereignty and non-intervention in internal affairs. China hosted the Asian Regional Forum (ARF) for the first time in 2004 which illustrates China's willingness to participate in multilateralism in the security agendas (Roy, 2005). Earlier reference to the China's changed foreign policy towards more multilateral and cooperative regional security is the 'New Security Concept (NSC)' introduced in 1997 in ASEAN meeting that represents post-Cold War era's vision on the international relations (Roy, 2003). NSC promotes confidence building, mutual trust and cooperation and emphasizes mutual trust, benefit, equality and coordination in maintaining regional security. According to NSC, linking regional economic cooperation and physical security in both Shanghai 5, China, Russia, Tajikistan, Kyrgyzstan and Kazakhstan, and ASEAN (Ministry of Foreign Affairs of the People's Republic of China, 2002).

The regionalism in Southeast Asia stems from the security concerns, and the ASEAN's focus on the security is both achieving national and regional security aims (Goh, 2006a). The lower

Mekong states sought the membership of ASEAN to increase the national security aims through gaining regional membership and regional integration (Table 7). The end of Cold War and the rise of China in Southeast Asia have emphasized the strategic regionalism that has two key elements of regional political membership and regional economic and institutional integration. In Southeast Asia, ASEAN has a primary function to achieve regional security through its regional political membership that has been effective.

Table 7 the Nexus Between Security and Regionalism⁴⁴

| Key elements of strategic regionalism | National security aims | Regional security aims |
|--|---|--|
| Regional (political) membership | Regime recognition and legitimization; collective regional bargaining | Avoid instamural conflicts; constrain potential hegemons; reassure and pacify neighbors |
| Regional (economic and institutional) integration | Enhance socio-economic development | Bind members; maximize potential economies of scale and distribution of benefits; diversification; collective international bargaining |

In another perspective, the existence of prominence of US and emerging influence of China as a economic power are overlapping since the Cold War. Roy (2005) argues that China appears to act as a benign power in the Southeast Asian region by minimizing external tensions while China concentrating on developing its economic, political and military power. On the other hand, Southeast Asian countries are ‘bandwagoning’⁴⁵ with China to gain trade benefits, but ‘balancing’⁴⁶ against China to another regional power US. Kang (2003) argues that ‘strong China’ increases regional stability in Southeast Asia, and Southeast Asian countries have responded to the change according to the mercantile realism. The normalization of relationship between China and Vietnam by China supporting the Paris Peace Accord in 1991 and the reconciliation with Burma on the border dispute are the examples that China is gradually becoming less threat in the regional security in Southeast Asia. The criticism on Kang’s argument is that the wary of the scenario which Southeast Asian countries would bandwagon with China is based on cultural, a neo-Confucian order, and historical arguments (Acharya, 2003).

The regionalism in Southeast Asia and China has changed overtime. China seems to be more open to the regional integration and the collective security concept. The China’s relationship to the lower Mekong states can be explained by the economic integration and the security policy, but China’s transboundary water resource policy is combined with not only it foreign policy but also the water resource management policy.

⁴⁴ Source: GOH, E. 2006a. Chapter One: The Regionalism-Security Nexus in China's Relations with Southeast Asia. *Adelphi Papers*, 46, 11-16. p.16

⁴⁵ Bandwagoning means, first, aligning with a threatening country to avoid being attacked by it (from: WALT, S. 1987. *The Origins of Alliances*, Ithaca, Cornell University Press. P.17), second, being ‘on the winning side’ in the hope of realizing economic gains (from: SCHWELLER, R. L. 1994. Bandwagoning for Profit: Bringing the revisionist State Back In. *International Security*, 19, 72-107.).

⁴⁶ Balancing is one but not the only strategy of a government to employ to keep open a future strategy option. (from: ROY, D. 2005. Southeast Asia and China: Balancing or Bandwagoning. *Contemporary Southeast Asia*, 27. P.306)

7.3.China's Water Resource Management Policy

The complexity of water management of crossing the various administrative organizations has a long history in China, it began with the tradition of central government leadership in harnessing rivers. China's modernized water regulations and law were formed in 1988 as the Water Law, and the 2002 Water Law was China's first law to define the river basin management in detail (Shen, 2009). Chinese government's perception of water is based on the notion that water is a natural resource, the stages of water management in China is as followed; during 1978-1987, the application of conventional wisdom with limited involvement of the rule of law; 1988-2001, water as an instrument to maximize economic benefits; 2002 to 2010, water as an integral part of the natural resources for sustainable development (Shugang, 2010). Currently six river commissions and one lake commission exist under the Department of Water Resources.

The China's legal system for the water management is heavily relying on the administrative regulations with the limited application of a market mechanism which lacks public participation and offsets by distorted incentives on the law enforcement (Shugang, 2010). Water is vital for the agriculture which generates 6.5% of national income and employs 39.6% of the population in China,⁴⁷ yet the public participation is extremely exuberated in the decision making process. The construction of cascade dams and reservoirs is guided by the economic development strategy rather than the water resource management strategy. China's 12th Five Year Plan (2011-2015) has plans for the intensive investment in dams, railways and highways with the targets to complete the hydropower projects set out in the 11th Five Year Plan (APCO, 2010).

The public participation in China's water management began to grow since 1994 when the first environmental NGO was registered. In 2001, the number of Chinese environmental NGOs are 2,000 (Wu, 2002). Water pollution followed by the growth of manufacturing industry is not an exception in China. In November 2005, an explosion occurred at a PetroChina chemical plant in the Jilin province that released over a hundred tons of benzene into the Songhua River. A large area of the river basin was affected by the accident, but the provincial and local officials hesitated to inform downstream provincial government. The journalists and public criticized heavily on upstream authorities' lack of transparency (Turner and Otsuka, 2006). In 2004, the environmentalists found out that the government has planned to build 13 dams in Nu River in the Yunnan province which is the last pristine river in China and a World Heritage Site designated by UN. The dam project in the Nu river would displace as many as 50,000 indigenous population (Yardley, 2004). In 2005, Green Watershed of Yunnan organized trips for villagers to meet other villagers from different dam sites. Yu Xiaogang, an activist who organized the trip, was arrested (Economy, 2005).

The limited of public participation and the lack of transparency is a characteristic in the Chinese water management. As the water basin policy is highly depending on the economic development plan, the integrated water resource management within China can be only achieve in a limited level.

⁴⁷ China Statistical Yearbook 2009, <http://www.stats.gov.cn/tjsj/ndsj/2009/indexeh.htm>

8. Analysis

8.1. Development policies

Throughout the paper, the development activities by MRC and riparian states and the implication of the regional politics in the basin development has been discussed. The existing development policies in the Mekong river basin can be positioned in the theoretical framework which is discussed in the chapter 4 (Figure 12). In overall, MRC's Environment Program, Fisheries Program, Basin Development Program, Climate Change and Adaptation Initiative, IWRM Project, Flood Management and Mitigation Program, Agriculture, Irrigation and Forestry Program can be considered to be the alternative development strategy with the regional approach (position *four*). The programs above aim to consider the regional benefits and the impact of the program on the entire Mekong river basin. MRC's commitments on the sustainable development are shown in the Mekong Agreement which is a basis of the programs above.

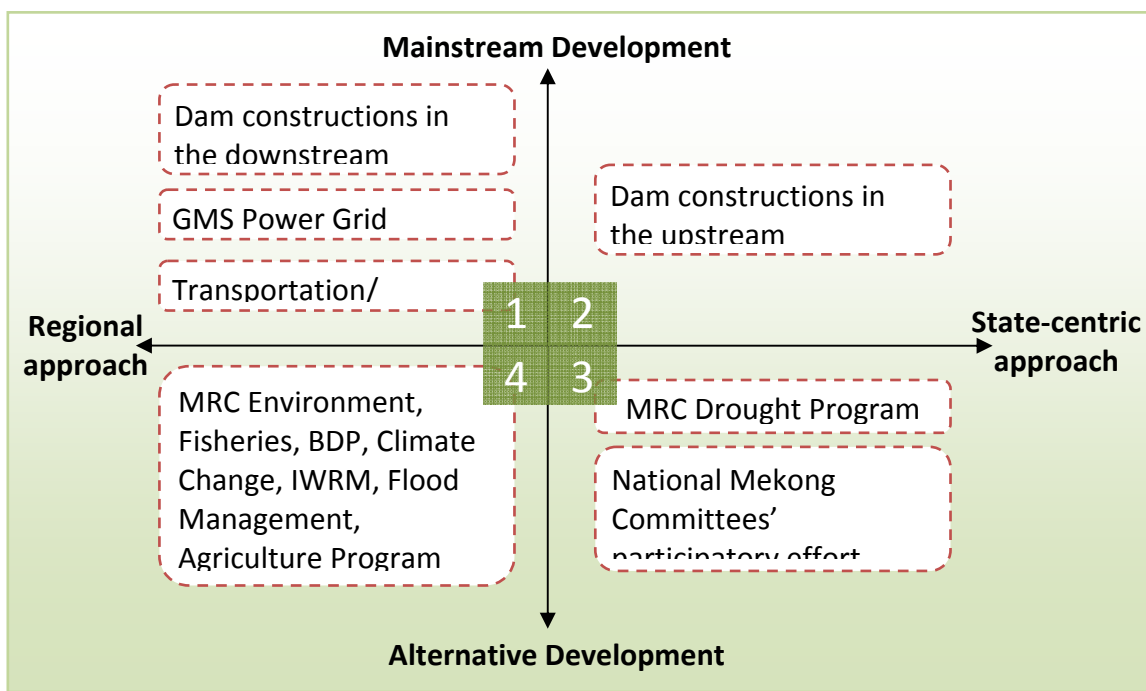


Figure 12 Positioning of the Development Policies in the Mekong River Basin

However the Mekong Agreement has its limitation and it is clearly shown in the case of dam constructions in the downstream. The rule stated in the Mekong Agreement obligates a riparian state to 'notify' its hydropower development to other riparian states in prior. MRC allows the riparian states to build hydropower stations without consulting other riparian states and limits its role to provide assessment of the hydropower development suggested by the riparian states. To achieve sustainable development, MRC needs to have more power to control the development of the Mekong river basin.

Considering that MRC is under the significant donor influence by funding, a long history of the donors support for the infrastructure development has encouraged the hydropower

development in the Mekong river basin (Usher, 1997, Usher and Ryder, 1997, Bakker, 1999, World Bank, 2004, World Bank, 2007). GMS power grid project supports the power trading among the Mekong riparian states, that would also encourage developing the hydropower in the Mekong. The donors are supporting the mainstream development strategy and the alternative strategy at the same time that creates the confusion in MRC. In result, MRC compromises the two contrasting strategies under the principle of IWRM.

The planned dams in the downstream are mostly constructed by a foreign company by the BOT financing scheme. The BOT financing scheme makes the hydropower development possible without the government funding. The argument linking the hydropower development and the poverty reduction by the World Bank (2007) is hardly applicable in the hydropower development projects using the BOT scheme. According to the BOT scheme, water is exploited by a foreign company and then the electricity is transferred to a third country. In the most cases of the downstream dams, the produced electricity will be transferred to Thailand. The benefits of the development will not be distributed to the locals or even to the residence of the country. In that sense, the development projects using the BOT scheme have a problem of not considering all the stakeholders regarding the natural resources. There will be 190 villages and 63,112 villagers to be resettled by the dam constructions. In addition to the resettled population, the externalities caused by dams such as the extinction of several aquatic species, the reduced fish stocks and the negative impact on the soil fertility are most likely left to the local villagers as a economic, social and environmental burden.

The upstream dams have gone through even less public discussions than the planned downstream dams. China did not sign the Mekong Agreement. Therefore it is not the obligation for China to notify other riparian states. The public participation in hydropower development even within the Chinese territory has not taken place yet. The lack of transparency of Chinese decision making on dams is the most problematic part between China and the lower Mekong states. There is no room for prior consultation on the impact of the dams and changes of the dam design to reduce the environmental impact. At least, in the downstream dams, theoretically SEA and EIA take place on the proposal stage, although Xayaburi dam construction is under debate on the EIA result and the schedule to redesign the dam to reduce the environment and social impact.

Interestingly, the position *three* is observed in the National Mekong Committee's effort on introducing the public participation in the basin development in the Basin Development Plan and the Drought Program. The public participation needs the attention from the government to be implemented in the decision making process, so it has a positive outcome to improve sustainability of the other development programs. However the limited role of the National Mekong Committee in the national government is one of the obstacles to implementation of the public participation in the basin development.

8.2.China and MRC

China's increased economic and political power in global and regional level also has affected its relationship with the lower Mekong states. During the drought in 2010 in the lower Mekong basin, the lower Mekong states did not blame China due to the lack of direct

evidence. On the other hands, the Chinese officials has outspoken about the irrelevance of Chinese dams to the droughts in the lower Mekong basin. No lower Mekong state was willing to urge China to halt the upstream dam operation, because that could jeopardize the economic cooperation between the lower Mekong states and China. Increased economic integration between China and Southeast Asia is becoming more beneficial to China by opening a new market for the cheap Chinese goods. In other hands, other Mekong riparian states have been increased the economic dependency to China.

China has been indifferent to signing the Mekong Agreement with the lower Mekong states. Some reasons can be concluded from the earlier research; first the Mekong Committee was highly influenced by US during the Cold War which alienated China on the other side; the Chinese plan to build dams in the upstream Mekong hindered China from joining MRC and even if China learned the limited legal function of the Mekong Agreement, China was unwilling to even discuss its dam construction with the lower Mekong states involving western donors; MRC is a successful organization to acquire donor supports related to the hydro-development, but China does not need the donor support to develop the upper Mekong basin.

Another explanation is that China is strategically expanding its role when the regional cooperation suits its national security interest. China's unilateral approach to the Mekong river basin brings out of the question by Shmueli⁴⁸ once more. China is not totally uninterested in the cooperation on the Mekong which is shown in the cooperation on the transportation route and GMS power grid project. China was willing to lead the cooperation on the transportation route on the Mekong. When the regional economic cooperation is fit into its national security aims, China engages actively with the other riparian states. In the poststructuralist perspective, a narrative on water becomes a securitized issue on the basis of water scarcity is a threat to economic development. In the upper Mekong basin, the water supply is not a security issue, but the electricity production is closely connected to the economic development. For China, economic development is the most prioritized issue in the nation, so the securing energy production is securitized and politicized. The Mekong is used as Chinese oil transport route, and oil is an extremely securitized resource. After China already engaged with the other riparian states on the navigation issue and the energy transportation issue, as an upstream country, China hardly has an issue which ought to seek the cooperation with the other riparian states. Therefore, China's participation in MRC is not likely to happen in the distant future.

China can change its policy when there is a strong and consistent trend of increased demand for the public participation and raising awareness in environmental protection and sustainability regarding water resource management. NSC also can influence the Chinese policy towards the Mekong as a foreign policy tool.

⁴⁸ "How can sovereign states, pursuing national self-interest and those policies that would best assure the regime's survival, cope with the challenge of bi- or multi-national coordination in the use of a common resource?" From: SHMUELI, D. F. 1999. Water quality in international river basins. *Political Geography*, 18, 437-476.

9. Conclusion

Throughout the paper, the prospect of sustainable development in the Mekong river basin has been reviewed and discussed in the framework of the regional development strategy and approach. Sustainable development is identified as a concept that cares for the social equity and future generation. Some theories are applied in the argument such as the alternative development is better to achieving sustainable development; and the regional approach in transboundary water resource management is better for achieving sustainable development. It is clearly stated that principle of 'sustainable development' is the primary goal of MRC. However the findings of this research show that the development discourses within MRC has not been fully escaped from the mainstream development strategy. It is obvious that the MRC does not have enough power to implement the changes for sustainable development. Some could argue that it is because of the weakness of the Mekong Agreement. The political commitment is a crucial factor to implement the change in many cases. In the case of the Mekong Agreement, there was a lack of political commitment to create a more effective agreement that can achieve sustainable development at the first place. The argument for the political commitment to sustainable development is continued to the discussion on the participation of China.

The argument for sustainable development often emphasizes the holistic view of the world. In the transboundary water resource management, it makes the sustainable development of water basin impossible without the participation of the all riparian states. China's participation in MRC is hindered by its strategic regionalism that only considers the Mekong's connection to the national security aims. The strategic realism argument can continue to the possibility that China can expand its role to partly replace western donors and multilateral development banks in the Mekong river basin.

According to the hegemonic discourse, securitization of water is reinforced in transboundary water organizations. The existence of transboundary water organizations and agreements is impossible without the political process among riparian states. A recent trend of increasing public participation in the policy-making in the water resource management could contribute to de-politicization and de-securitization of water in the regional level. In the future, achieving sustainable development of the Mekong river basin will be closely connected to open its space for the public participation.

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