

Scalar Interactions in the Mekong River Basin: Dam Incentives and Outcomes

Abstract: The Mekong River plays an intricate and dynamic role in the environmental, social, economic, and cultural systems of the 70 million people throughout its basin and the more than 300 million people in the six Mekong nations. The river is both a necessity for millions of individuals with livelihoods centered on its resources and, in the eyes of large-scale actors, a tool for regional development and industrialization. Policies throughout the Mekong River Basin have long dealt with international issues and often center on large-scale outcomes, such as the promotion of regional economic development and intergovernmental cooperation, but have neglected to account for inter-scalar relationships and the impacts of hydro-development on small-scale actors and processes. The continued promotion of dams throughout the Mekong River Basin is exemplary of the emphasis on transboundary issues at the expense of small-scale actors.

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I pledge I have neither received nor given assistance during the completion of this work.

Introduction:

No irony exists in the Thai name *Mae Naam Kong* (Mother River) for the Mekong River. As it snakes through six southeastern Asian nations, the Mekong River provides life sources for all levels, scales, and types of interactions throughout its basin, causing many nations to consider the river to be a mother, or giver of life. Unlike the situations in most developing and industrializing regions, the Mekong River's resources and heritage continue to define many aspects of southeastern Asia. Despite of—or possibly as a result of—the ample natural resources within the region, the Mekong River Basin has historically been a region ripe with strife, unrest, and poverty. The Mekong River's transboundary governing body, the Mekong River Commission, promotes industrialization strategies centered on large water development projects for the benefit of the region as a whole. Such projects often cause conflict between scales as natural resources previously utilized for subsistence and agriculture purposes become geared toward new, often competing, purposes and tradeoffs must be made between competing users. The drivers for development transcend boundaries in a similar manner to the transboundary impacts of the dams themselves. Understanding and analyzing the scales of interactions concerning Mekong River governance, therefore, are integral to the continued functioning of the region for the benefit of all who rely on the Mekong River.

Literature Review:**Political Ecology:**

Political ecology is a field in which intersections between politics, ecology, and society emerge, and thus serves as a framework through which to view the construction

of dams and their effects on the economies, biological communities, and peoples surrounding them. According to political ecologists Watts and Peet (2004), political ecology is a “confluence between ecologically rooted social science and the principles of political economy” (Peet and Watts 2004, 444). Watts and Peet argue for the creation of a more just society through understanding the movements that emerge from clashes between players in a political economy, such as politics, natural resources, and cultures (Peet and Watts 2004, 444).

According to Robbins (2004), political ecologists “seek to expose flaws in dominant approaches to the environment favored by corporate, state, and international authorities, working to demonstrate the undesirable impacts of policies and market conditions, especially from the point of view of local people, marginal groups, and vulnerable populations” (Robbins 2004, 3-16). Geographers Brown and Purcell, however, argue against the assumption that the use of the local scale for organization, policies, and action leads to more beneficial outcomes for the majority of those affected (Brown and Purcell 2005, 607-624). Brown and Purcell assert scale has no inherent benefits and should be considered a strategy to see through a specific agenda, just like any other strategy, rather than a cause of a particular outcome (Brown and Purcell 2005, 607-624). They assert that many political geographers fall prey to the “local trap,” in which they assume the devolution of power to local scale actors will inherently lead to the desired outcomes of political ecologists, such as democracy, social justice, and environmental sustainability (Brown and Purcell 2005, 607-624). This analysis will utilize political ecology perspectives to investigate scalar relationships between transnational and local scales through a case study of the Mekong River.

Scale:

Scale plays a large role in political ecology and holds much significance to the analysis of transboundary dams along the Mekong River. Marston (2000) contends scale, while a contested and multifaceted concept, is becoming widely accepted as a result of social construction and should be considered a relational, rather than fixed, concept inclusive of size and level. Likewise, Brenner (2001) asserts studies of scale necessitate an understanding of the social construction of scale and its resulting usefulness for comparing relationships between scales but not for analyzing isolated scales. According to Neumann (2009), the politics of scale is a theorization that incorporates three key concepts; namely, scale is socially constructed, historically contingent, and politically contested (Neumann 2009, 398-406). Marston et al. (2005) identify three problems with politics of scale theorization, including the confusion between scale (size) and level (hierarchy), the local/global binary that assumes inherent differences between scales without a proper analysis of either, and the presupposition of fixed scales. This analysis will make extensive use of the concept of scale to assess incentives for and implications of dams along the Mekong River and the associations with power at different scales.

Geography:

The Mekong River, which snakes through the six Asian nations of China, Myanmar, Lao PDR, Thailand, Vietnam and Cambodia, makes geography another powerful perspective through which to analyze the construction of dams along the Mekong River. The Mekong crosses international borders, creates international borders,

and spans numerous biomes and land types (Figure 1). Geography's encapsulation of physical and social relationships, and its emphasis on understanding the roles of marginalized groups, enables it to be a strong lens through which to view the social and cultural impacts arising from the construction of transboundary dams.



Figure 1: The Mekong River flows through six countries in southeastern Asia
(<http://www.taiwandna.com/MalayMekongMigration.jpg>)

International Waterway Governance:

Governance of international waterways is an issue of great importance. Roughly 263 of the world's rivers span more than one country or create a border between two or more countries (Gerlak 2004, 108--141). These rivers hold the majority of the world's fresh water and provide resources and livelihoods to billions of people; hence, changes to international river ecosystems impact millions of people and entire civilizations.

According to environmental scientist Gerlak (2004), international regimes for the

governance of international waterways play three important roles; they increase the concern of the government for the issues at stake, they promote the legal frameworks and nations' abilities to uphold regulations, and they enhance the capacities within nations to promote proper governance of the waterways (Gerlak 2004, 108-141). As such, they play an integral role in asserting the importance of the waters within separate nations. They, furthermore, have the potential to reduce or avoid conflict where access to resources creates contention.

Dams:

The two primary types of dams, hydroelectric and irrigation, cause immense environmental, livelihood, and cultural impacts within areas adjacent to the dams and their reservoirs. Irrigation dams create reservoirs to store water for increased flow during dry seasons. Hydroelectric dams may be reservoir dams or run-of-the-river dams. Reservoirs of large irrigation dams can cause inundation of thousands of kilometers of land. The increased pressure on the land from reservoirs often causes leaching of minerals previously trapped below the surface, such as salt in northeastern Thailand (Molle and Floch 2008, 199-204). Both reservoir dams and run-of-the-river dams divide the river into two sections that most migratory fish species are unable to bridge, even with mitigation measures such as fish ladders (Sokhem, Sunada, and Oishi 2007, 503-523). Because most migratory fish species rely on their migrations to spawn, an inability to travel the rivers leads to severe harm to—or even depletion of—fish species (Baran and Myschowoda 2009, 227-234). Dams reduce seasonal floods, which generally provide cues that trigger many fish species to migrate and replenish nutrients essential to

many biological communities, including fish (Baran and Myschowoda 2009, 227-234). The creation of reservoirs, loss of seasonal floods, and restriction of fish migrations greatly alter the physical environment, which, in turn causes many changes for local communities.

Effects of dams are especially drastic for communities reliant on natural resources. Dam reservoirs often reduce water availability for paddy irrigation to communities near the dam and reduce the availability of land for livestock grazing, both of which cause livelihood changes and often the displacement and resettlement of local communities (Molle and Floch 2008, 199-204). Moreover, salinization caused by reservoirs makes agriculture and rice paddy cultivation impossible, which is ironic given the purpose of many dams in the region is dry-season rice farming (Molle and Floch 2008, 199-204). Studies by Tilt et al. (2009) concluded the reduction of natural resources for subsistence use or sale leads to changes in rural economies because villagers must enter mainstream market economies whereas they were previously able to produce and trade on a more informal basis within their communities (Tilt, Braun, and He 2009, S249-S257).

Dams cause changes in social and cultural attributes of regions, as well. Dams have been known to cause changes in gender relations because compensation for losses is systematically given to men, which elevates them above the status of their wives (Tilt, Braun, and He 2009, S249-S257). Furthermore, when dams cause drastic changes to the lifestyles and resources of communities, they affect local customs and cultural attributes, such as those dependent on specific natural resources (Tilt, Braun, and He 2009, S249-S257). Thus, the impacts of dams on local communities range from social to economic

and ecological, all of which integrate to create massive changes to the lives and cultures of dam-affected communities.

The demands for hydropower development encourage inaccurate and improper analyses of the environmental and social impacts of the projects in the name of haste (Molle and Floch 2008, 199-204, Baran and Myschowoda 2009, 227-234). Thus, secrecy becomes ingrained in hydropower development and the public is not made aware of the plans for development (Baran and Myschowoda 2009, 227-234). It is commonplace for entire villages living near the sites of large proposed dams to remain largely unaware of plans for dam construction or the possible implications on their homes and livelihoods throughout the entire planning stages of dams (personal observation). Villagers often hear conflicting stories from academics, NGOs, government officials, and dam planners, leading to greater confusion and even internal village conflict regarding the potential dams (personal observations). Environmental impact assessments (EIAs), social impact assessments (SIAs), and public hearings—all of which are meant to incorporate local participation—often become token actions without legitimate goals or outcomes (Molle and Floch 2008, 199-204, Tilt, Braun, and He 2009, S249-S257).

Methods:

Research for this analysis consists primarily of archival and document research. Other sources of research include the personal experiences and observations of villagers, researchers, and NGOs in *Isaan*, the northeastern region of Thailand, along the Lao-Thai border of the Mekong River in August through December of 2008 (Figure 2).

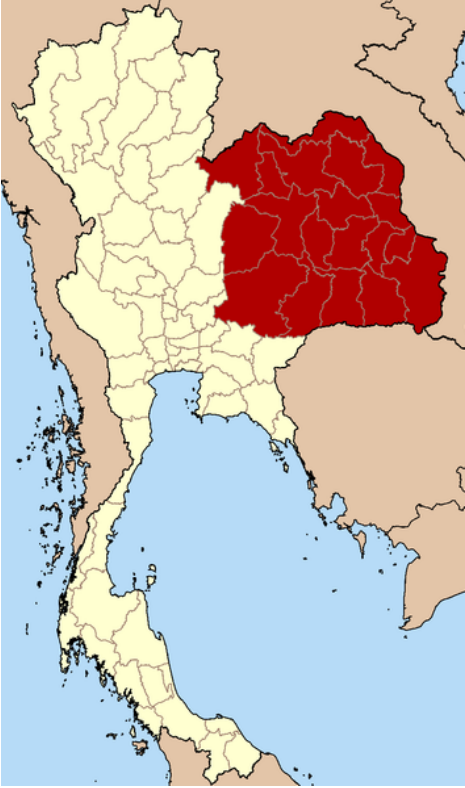


Figure 2: Isaan, the northeastern region of Thailand (in red), is known for its flat terrain, endless rice paddies, and the subsistence resource use, poverty, and rich Laotian culture of the Isaan people
(http://commons.wikimedia.org/wiki/File:Thailand_Isan.png)

Background:

With a length of 4800 kilometers, the Mekong River is the 11th longest river in the world and the 12th largest by volume (Sneddon and Fox 2006, 181-202). The Upper Mekong River, between China and Myanmar, holds three dams, but the Lower Mekong River, which is situated in the countries of Thailand, Lao PDR, and Cambodia, is the longest free-flowing stretch of international waterway in the world (Sokhem and Sunada 2008, 219-224). The Mekong River Basin provides refuge for over 70 million residents and the river itself provides livelihoods or means of subsistence for the vast majority of

individuals living along it (Sneddon and Fox 2006, 181-202, Sokhem and Sunada 2008, 219-224). Located in southeastern Asia, the Mekong River Basin is composed of a diversity of land, vegetation, and soil types. The basin contains forested mountains, scrublands, and rice paddy areas, which provide a vast array of resource-based livelihoods (Figure 3). The river and surrounding basin are characterized by annual flooding, which brings nutrients, fisheries, and areas for agricultural production (Sneddon and Fox 2006, 181-202).



Figure 3: The Mekong River Basin is composed of a diversity of land, vegetation, and soil types.

<http://www.circleofblue.org/waternews/2009/world/visioning-flowing-waters-from-laos-to-cambodia/>

Roughly 600 kilometers of the Mekong River lie along national borders and much of this is between Thailand and Laos. Because civilizations have historically lived along the riverbanks of the Mekong River and crossed the river regularly and with ease, the Mekong is not a border that strictly divides populations (Sneddon and Fox 2006, 181-202). For instance, the people of Northeastern Thailand are culturally and genetically more closely tied with Laotians than they are with populations from other regions within Thailand. Peoples on all sides of the river tend to be dependent on agrarian and fishery livelihoods, which keeps them culturally, socially, and economically tied to each other and the watersheds in which they live.

The organizational bodies currently responsible for transboundary governance of the Greater Mekong Subregion are the Greater Mekong Subregion (GMS) Program and the Mekong River Commission (MRC). The GMS Program is an Asian Development Bank-supported initiative in place to foster economic liberalization and regional integration within the nations of the Greater Mekong Subregion (Badenoch 2002, 1-33) whereas the MRC is a body created to carry out the vision of the 1995 Mekong Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. The 1995 Mekong Agreement's mission was to "achieve optimum use and prevention of waste of the waters in accordance with the aim of improving the livelihood of the people living within the Lower Mekong River Basin" (Ma et al. 2008, 1069-1087). As a means of achieving this goal, the MRC originally re-envisioned the Mekong River as a battery for hydropower development to power the Mekong River Basin , but has

since shifted to a stronger emphasis on “fair and equitable utilization” of the river’s resources (Sneddon and Fox 2006, 181-202, Badenoch 2002, 1-33).

Badenoch (2002) claims “there is no institutional framework for accountability among the nations of the basin,” which presents an absolute weakness of basin governance. The MRC includes only nations in the Lower Mekong Subregion, such as Lao PDR, Thailand, Cambodia, and Vietnam. China and Myanmar are not official members of the MRC, but act as dialogue partners for some crucial issues (Badenoch 2002, 1-33). The MRC is making strides toward integration as depicted by its expression of concern over development strategies in China that would impact nations downriver of China (Badenoch 2002, 1-33). Badenoch (2002) believes the incorporation of China and Myanmar into the MRC would be a step toward basin-wide accountability.

Sokhem et al. present the Mekong River Basin (MRB) as a rare example of a major international river basin capable of promoting cooperation throughout the region in the interest of sustainable development and stability. They assert, however, this is possible if, and only if, management effectively distributes costs and benefits associated with the water resources (Sokhem, Sunada, and Oishi 2007, 503-523). Many “Mekong commentators” question the ability of the current organizations overseeing Mekong activities to solve transboundary conflicts and even wonder whether some conflicts are a result of the poor governance stemming from said organizations (Sokhem, Sunada, and Oishi 2007, 503-523) Therefore, the Mekong River Commission (MRC), the primary organization responsible for the management of the Lower Mekong Basin, must uphold strong mechanisms for regulating and creating cooperation between states and must,

themselves, remain focused on the range of impacts of development projects so that the needs of all stakeholders are represented (Sokhem, Sunada, and Oishi 2007, 503-523).

The GMS Program claims poverty alleviation is a primary goal of many of its development initiatives, but some commentators assert the “neoliberal development trajectory driving the GMS Program has left behind an unacceptably large portion of society” (Badenoch 2002, 1-33). The lack of clear incentives driving the GMS Program and the failure of the MRC to incorporate all involved nations support the assertion of some commentators that current Mekong River institutions and organizations are ill-equipped to manage problems associated with Mekong River governance (Sokhem, Sunada, and Oishi 2007, 503-523).

Consensus does not exist as to what form of governance over transboundary waterways is most effective for the diversity of stakeholders involved. Governance of the Mekong River Basin is recognized for the dominance of national governments and official processes in all of its governing bodies, but scale of governance still enters the issue in other ways. Some argue for national governments to remain the primary voices, such as in the MRC, because of their direct linkages with government interactions. Others argue for a more regional approach, such as that taken by the GMS Program, which has positive attributes such as the inclusion of southern China, the promotion of regional integration, and the support for non-governmental interactions. Still others argue for the efficacy of a more diverse range of actors by integrating many forms of governance so that multiple perspectives and agendas are represented (Badenoch 2002, 1-33). Badenoch (2002) asserts that the level of governance and decision-making should be chosen so that the largest number of stakeholders is represented and so that levels of

governance are encouraged to interact. Thus, governance decisions that involve players at various levels should be carried out at scales large enough to incorporate the interests of large-scale actors but not so large that the voices of small-scale actors are silenced.

The Global Environment Facility (GEF) is a leading multilateral organization for the promotion of cooperation around international waters. As such, GEF promotes and supports activities to encourage participation from numerous countries on issues of water that cross national borders. Gerlack's analysis of GEF's international water activities leads to the conclusion that organizations such as GEF may play primarily a catalytic role in the creation of activities for collaboration on transboundary water resources with the hope that momentum becomes reality once they leave the projects in the hands of more local bodies. Gerlack concludes that organizations for the governance of transboundary waters are more likely to be effective if their solutions are in the form of "site-specific, regional cooperative efforts" (Gerlak 2004, 108-141). Thus, Gerlack asserts the opinion that international water initiatives are most likely to create beneficial outcomes when they are carried out at a fairly small scale and with the ability to tailor projects to the sites and situations.

The Mekong River Basin is known for poverty, but also for the vast utilization of natural resources from within the basin for subsistence and livelihood generation. The GMS has 40 million people whose livelihoods and means of subsistence are derived at least partially from the natural resources provided by Mekong capture fisheries (Sneddon and Fox 2006, 181-202). Millions more individuals are dependent on other resources within the basin, such as rice paddy cultivation and riverbank agriculture. Because of the heavy dependence on natural resources, the use of income levels to determine poverty

rankings is inaccurate for regions such as the Mekong River Basin because income is not equivalent to the ability to meet basic needs (Varis 2008, 225-231). Without interference by dams and other development projects that affect the availability of natural resources, the people of the Mekong River Basin are largely able to survive comfortably with incomes under the poverty level. “We are not rich, but we have abundant food” said Pitpibul Lakhonwong, deputy headman of Thalong village in Ubon Ratchathani, Thailand (Thai press reports, corruption 2008). Lakhonwong expresses the general atmosphere in many rural villages throughout the Mekong Basin. Field observations throughout rural Thailand indicated villagers are tightly knit and provide for each other on a regular basis, thus reducing the necessity for economic wealth.

Poverty alleviation, along with economic growth and environmental sustainability, was one of the three initial goals of the 1995 Mekong Agreement, which continues to govern activities along the Mekong River (Sneddon and Fox 2006, 181-202). Water resources specialist Varis (2008) points out the existence of a positive relationship between economic development and poverty alleviation due to the trickle down effect of funds entering the country through development projects. He takes the issue one step further, however, to bring to light the growing economic disparity that often comes with economic development. According to the Kuznets theory, economic development causes greater income disparities between the wealthy and poor until a middle class is reached, at which point the disparity begins to decrease (Varis 2008, 225-231).

The contradiction between intended poverty alleviation and the actual increase in occurrence of poverty is often caused by poorly planned economic growth and poor governance. For instance, dams create extensive environmental impacts and eliminate

many natural resources subsistence-based peoples depend upon, such as fish, nutrient-rich river banks for agriculture, natural resource-rich wetlands, and unsalinated rice paddies (Molle and Floch 2008, 199-204, Baran and Myschowoda 2009, 227-234, Tilt, Braun, and He 2009, S249-S257). The removal of resources upon which they depend truly impoverishes them because it removes their abilities to meet their basic needs, such as nutrient intakes. A lack of natural resource availability for subsistence-based people forces them to incorporate themselves into the market economy where their lack of substantial incomes forces many into the sort of poverty in which they are unable to meet their basic needs (Molle and Floch 2008, 199-204, Varis 2008, 225-231).

Discussion:

Lebel (2005) argues trans-boundary impacts of water diversion and storage are the most crucial issues associated with politics of position within the Mekong region. China, as the northernmost nation associated with the Mekong River, holds the majority of the river's headwaters and its plans to heavily dam the river promise to have severe impacts on downstream communities and Mekong nations (Lebel, Garden, and Imamura 2005). In 2004 following construction of the Dachaoshan hydroelectric dam in the Yunnan province of China, downstream communities began to experience low and abnormal flows in the Mekong. This example of unjust access to resources is an issue of great importance to downstream nations. Therefore, the MRC was asked to step in and convene regarding the issue of reduced flow from the Dachaoshan dam (Lebel, Garden, and Imamura 2005). The MRC took on the role of mediating transboundary water

resources between Mekong nations, but mediating resource uses between scales within Mekong nations remains largely uncoordinated (Sneddon and Fox 2006, 181-202).

Ban Koum Dam, a planned dam along the Mekong River between the Lao PDR and Thailand, is exemplary of the conflict between large-scale incentives for hydropower development and the powerlessness of smaller scales to effect change in the development plans so they do not become the future victims of the environmental and social costs of dams. Ban Koum Dam will serve as a case study for this analysis of the incentives for and implications of dams in the Mekong River Basin at various scales.

Dams are constructed to serve the needs of parties that promote them, possibly in contrast to stated incentives for dams. Governments and large-scale stakeholders claim to promote dam construction for a variety of purposes, including benefits at the international, national, and local levels. Zoologist and environment and development researcher Lebel (2005), however, points out stories and propaganda—which need not be factual—can be used by politicians and other stakeholders to promote their interests. For instance, in 2004 bureaucrats and politicians in Thailand spread stories of the existence of a drought just days before they began to promote their new plans for water infrastructure development to minimize the effects of future droughts (Lebel, Garden, and Imamura 2005,). The lack of a true drought during that time is evidence to the ability of politicians to use their positions to promote personal interests without being held accountable to information not based on fact. Dam promoters claim dams bring regional integration and economic prosperity, both of which they assert will support national interests and trickle down to local communities to alleviate poverty (Molle and Floch

2008, 199-204, Badenoch 2002, 1--33), but this is a contested outcome of dam construction in the Mekong region as will be explored in the following analysis.

Local scale benefits:

One of the most prominently stated goals of Mekong dam construction is to bring development to regions for the purpose of poverty alleviation and increased livelihood opportunities, especially through irrigation (Molle and Floch 2008, 199-204, Sneddon and Fox 2006, 181-202, Badenoch 2002, 1-33). For instance, as early as the mid 1900s, Thailand determined its path for “stimulating the modernization of *Isaan*,” which holds the highest poverty rates of any portion of Thailand, was through development of its water resources (Molle and Floch 2008, 199-204). Since then, Thailand has progressed through many attempts to create large-scale hydroproject development in *Isaan*, largely in the form of irrigation dams to increase dry-season flow to areas within the region so as to provide livelihood opportunities to small-scale farmers during the dry season when *Isaan* is too dry for most forms of agriculture (Molle and Floch 2008, 199-204).

The attempts of dams to create effective irrigation for farmers, however, have created few benefits if any at all. In 2004 the MRC carried out modeling of the effects of four Chinese dams and six Laotian dams on river flow. These models depicted a reduction of flow below even the standard deviation of wet and dry years, indicating the ineffectiveness of the dams to increase flow and reliability (Sokhem and Sunada 2008, 219-224). Along a similar vein, a study on the effects of Manwan Dam along the Lancang River (China’s name for the Mekong River) in southern China found some downstream areas received an increase in dry-season flow, but areas surrounding the

reservoir experienced a significant decrease in the proportion of irrigated fields to non-irrigated fields following dam construction (Tilt, Braun, and He 2009, S249-S257).

Thus, the tradeoff for increasing downstream dry-season flow appeared to be a decrease in year-round agriculture in nearby areas, indicating the attempt to increase dry-season flow was inefficient and ineffective.

One of the main purposes of increasing irrigation for agriculture is to provide farmers with the ability to dry-season rice farm; the contradiction presented by dams meant for dry-season rice farming, however, is the lack of dry-season rice farming that actually occurs as a result of dams. Because 65 percent of Mekong diets is provided by cereals rice and wheat, dry-season rice farming is assumed to increase the amount of food available to Mekong River Basin families and increase their incomes through the sale of excess rice (Tilt, Braun, and He 2009, S249-S257, Sokhem and Sunada 2008, 219-224). In the study on Manwan Dam in China, the loss of the most highly valued land type (irrigated rice paddies) following the construction of the dam and its reservoir forced many farmers to turn from rice paddy cultivation to other dryland crops, such as maize and sugarcane. These are not, however, staples to their diets, so they began to trade maize and sugarcane for rice to feed their families (Tilt, Braun, and He 2009, S249-S257). As is apparent from the examples, dams built for irrigation purposes have not led to decreases in poverty of those in the basin and have even, in many cases, increased poverty levels by reducing the availability of irrigated land.

National and transboundary benefits:

As indicated by the evidence suggesting poverty-alleviation measures of dams are ineffective, the continued promotion of dams signifies dam-promoters have other incentives behind their construction. Governments and state-wide actors promote dams because dams serve their economic and political interests, whether or not these are stated on the record. Large dams are in the best interests of national governments and large-scale actors within the state because they bring economic and political gains to the region through industrialization (Molle and Floch 2008, 199-204, Sneddon and Fox 2006, 181-202). Hydroelectric and irrigation schemes bring money to government sectors promoting dam projects, development banks financing large projects, and industries able to capitalize on the electricity from dams (Molle and Floch 2008, 199-204). Nations of the lower Mekong basin are rich with natural resources but currently lack the industrialization and infrastructure necessary to become powerful players in international markets (Sneddon and Fox 2006, 181-202). In order to industrialize effectively and become players in the international markets, Mekong nations are in need of large amounts of cheap energy, which dams can provide.

Ban Koum Dam is expected to produce 1,872 megawatts of electricity and inundate 84,000 rai of farmland in Thailand alone (Anonymous 2008). Thailand will receive the energy from the dam and Laos will receive an economic boost from the sale of the energy, both of which fall nicely into the nations' plans to develop the hydropower potential of the Mekong River to aid in each country's competitiveness in international markets (Anonymous 2008).

In addition to bringing economic and political benefits to governments and large-scale actors, industrialization in the Mekong River Basin is also claimed to secure

increased livelihood opportunities and reduce the incidence of poverty for the people of the Lower Mekong nations; however, evidence suggests this is not effective (Badenoch 2002, 1-33). Massive local opposition to dams in Thailand and throughout the Mekong River Basin continues to arise because of the social and economic strife they cause for local communities. Pak Mun Dam and Rasi Salai Dam in *Isaan*, Thailand are two examples of dams that have caused the relocation and loss of livelihood for thousands of individuals and continue to be protested more than two decades after their construction (Sneddon and Fox 2006, 181-202). The Water Resources Institute's Transboundary Environmental Governance report finds "marginalized communities are missing out on the benefits of economic development, even as they confront massive structural and political barriers to their more active participation in planning and implementing the strategies that are meant to help them" (Badenoch 2002, 1-33). As depicted, the economic and political gains brought to nations and their large-scale stakeholders are not dispersed throughout scales and, thus, small-scale actors remain losers in the analysis of the impacts of dam projects, which further indicates the inequity created when large-scale actors drive dam development with little thought to their impacts at other scales.

The ineffectiveness of poverty-reduction measures and coinciding benefits of dams to large-scale actors in the Mekong River Basin further imbalance power held between the various scales at play in transboundary water development strategies. In the process of bringing development to the Greater Mekong Subregion, tradeoffs in Mekong nations are made between the economies, rural livelihoods, and food securities of each nation (Baran and Myschowoda 2009, 227-234). With the governance decisions in the hands of large-scale actors, the trade-offs are made in support of governments and

statewide actors often to the detriment of small-scale actors whose rights are further impeded by the imposition of the dams.

Large-scale benefits at the expense of small-scale actors:

Geographer Sneddon (2006) argues the goal held by large-scale organizations and governments in control of the Mekong basin to make the Mekong an “engine of regional development” trumps any and all efforts to incorporate small-scale actors into the development of the projects and their implementation. Lebel (2005) indicates the highest priority for electricity and irrigation from dams is given to urban centers and high economic value sectors to drive national development. For instance, in Thailand the hierarchy of where benefits from dams are distributed extends first to Bangkok in the form of water, then to other sectors, with rice in rural Thailand receiving the last share of benefits from the dams (Lebel, Garden, and Imamura 2005). Thus, the priority list in which economic gains of national and regional actors are given precedence over poverty reduction of small-scale actors provides evidence development projects aim first and foremost to support large-scale interests (Badenoch 2002, 1-33).

The promotion of production-based systems in the Lower Mekong region is an example of the supremacy of the interests of national stakeholders to the needs of small-scale actors in governmental actions. Bush (2008) provides many examples of evidence for the need to protect capture fisheries and other natural resources for the subsistence of local populations in the Mekong region. Regardless of these examples, however, governance continues to be centered on production-based systems, such as forestry, livestock, and crop production, instead of natural resources and capture fisheries (Bush

2008, 329-353). The sale of these products provides a transboundary benefit to national actors because they bring revenue to the region. Transnational actors encourage their production because overall demand for goods from the Mekong River basin is high (Sokhem, Sunada, and Oishi 2007, 503-523); thus, export of Mekong resources brings market power to the region as a whole.

An emphasis on such production-based systems at the expense of natural resources serves to undermine the subsistence potential of local resource-users, and further marginalizes the local populations who are unable or unwilling to effectively enter market economies with production-based resources (Bush 2008, 329-353). The marginalization of small-scale actors that results from such transboundary efforts further disempowers those in the margins from controlling their means of subsistence and livelihood. As such, the needs of locals continue to be compromised for the sake of transboundary water development agendas, specifically dams.

The Lao PDR's economic shift in the 1980s is yet another example of a change in national policy to the benefit of large-scale development and the cost of locals. Lao PDR changed its economic development agenda in the early 1980s from an agriculture- and subsistence-based economy to an industrializing economy (Bush 2008, 329-353). This shift coincided with a stronger emphasis on dam construction and was claimed to be a solution to Laos' "food problem" (Bush 2008, 329-353). As demonstrated previously, however, dams remove natural resources used for subsistence by local people and therefore reduce food available to locals. Laos' shift to industrialization through the construction of dams exemplifies a national agenda that further disempowered locals rather than solving the food problem Laos claimed to intend to solve with the shift.

The large-scale demands for hydropower development encourage inaccurate and improper analyses of the environmental and social impacts of the projects in the name of haste (Molle and Floch 2008, 199-204, Baran and Myschowoda 2009, 227-234). In attempts to spur hydropower development and reduce opposition, secrecy becomes engrained in dam promotion and the public is not made aware of hydroproject plans (Baran and Myschowoda 2009, 227-234). Environmental impact assessments (EIAs), social impact assessments (SIAs), and public hearings—all of which are meant to incorporate local participation—often become token actions without legitimate goals or outcomes (Molle and Floch 2008, 199-204, Tilt, Braun, and He 2009, S249-S257).

Field observation along the Thai side of the Mekong River near the proposed site of Ban Koum Dam in late 2008 indicated villagers knew very little about the dam and had heard differing plans from dam builders, government agencies, academics, and NGOs. Dam builders entered the villages with promises to bring tourism and other livelihoods to the region and neglected to educate villagers on the environmental impacts of the proposed dam, including a loss of the natural resources most villagers rely upon. Academics and NGOs, in contrast, entered the villages to begin to educate villagers on the destructive effects of similar dams in the region, such as the controversial Pak Mun dam and the likely effects Ban Koum would have on their lives. Local conflict was beginning to brew between individuals skeptical of the dam and those in support of the opportunities they have been told the dam will bring.

The legitimacy of dam promoters' incentives for Ban Koum Dam is questionable due to suspicious activities surrounding its planning and implementation. According to the Thai Press, "the signing of the MoU [Memorandum of Understanding] bypassed

parliamentary approval and the government had failed to take into account public participation, particularly villagers affected by the dam construction” (Anonymous 2008). Moreover, the Lao and Thai governments agreed to allow Italian-Thai Development Plc (ITD) to complete the feasibility study for the dam without following the correct procedures for making such a decision (Anonymous 2008). ITD’s promise to complete the study free of charge further raises suspicion (Anonymous 2008). Overall, the illegal and questionable actions of the Lao and Thai governments and other dam-promoting agencies to set the dam in motion suggest the large national benefits expected from the dam. These actions, however, are being taken at the expense of the local people, whose voices are being muted in the dam’s planning stages for the sake of a speedy transition to the dam’s implementation.

Conflict reduction and associated scalar contradiction:

A not yet aforementioned incentive for dam construction in the Mekong River Basin is the reduction of conflict through cooperation between Mekong nations. A goal of the MRC is to create sustained cooperation between nations through equitable access to resources in the Mekong basin (Sneddon and Fox 2006, 181-202). Throughout the Cold War, the development of large hydroprojects along the Mekong River was encouraged as a means of securing cooperation between Mekong nations and this same tactic is still used(Sneddon and Fox 2006, 181-202). The construction of Ban Koum Dam, from which Laos will receive money from electricity generation and Thailand will receive generated electricity for *Isaan*, its northeastern region, depicts an example the benefits of cooperation among nations through hydropower development.

The hydropower development goal of cooperation between Mekong nations, however, brings to light a contradiction inherent to large development projects. The emphasis on large-scale benefits from dams leads to a neglect of the negative impacts of the dams on environmental, social, and cultural systems. Dams create socioecological losses for wetland ecosystems, a reduction in rice paddy cultivation dependent on seasonal flood patterns, and a loss of capture fisheries among other impacts (Tilt, Braun, and He 2009, S249-S257). The reduction of each of these natural resources causes poverty and social conflict over remaining resources mostly at the local level, but also across national borders (Sneddon and Fox 2007, 2161-2181). Therefore, conflict over natural resources results from the construction of dams that were ironically meant to elicit peace and cooperation between nations.

Conclusion:

Dams within the Mekong River Basin are promoted at the national and international levels for a variety of purposes involving local, regional, state, and transboundary actors. The continued promotion of large dams despite evidence for the ineffectiveness of most poverty-alleviation goals of dams indicates the existence of strong incentives for dams from other stakeholders. Large-scale stakeholders and governments of Mekong nations appear to promote dams primarily to spur industrialization and economic development throughout the basin. As dams continue to be built to serve the interests of large-scale transboundary actors, the costs of such development initiatives continue to be borne by small-scale actors, especially local people dependent on the resources provided by the river.

The Lower Mekong River is currently the longest stretch of free-flowing water in the world, but plans are in the works for numerous Mekong dams in the next couple of decades (Figure 4). Conflicting data exists for the number of Mekong dams in planning stages, but higher estimates suggest the planning of 20 large dams in the Lower Mekong Basin alone and many more throughout the entire length of the Mekong River (Ghosh and Correspondent 2010,). As depicted through the analysis above, even a single dam creates drastic consequences within the environmental, social, and economic realms of the Mekong River Basin. Dam construction follows a cyclical pattern because the construction of dams lead to the loss of pertinent resources for subsistence and resource-based livelihoods, which often further disempowers locals from the ability to voice their concerns and enact change in development patterns. As such, it is of the utmost importance to generate a better understanding of the scalar relationships within the Mekong River Basin and the incentives for and impacts of future dams before dam construction along the Mekong River sets a precedent for the creation of environmental, social, and economic unrest at the small scales for the sake of large-scale actors.



Figure 4: The Mekong River Basin and its associated dams in all stages of operation and planning

(http://www.panda.org/what_we_do/where_we_work/great_mekong/challenges_in_the_greater_mekong/infrastructure_development_in_the_greater_mekong/)

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