Background

The Mekong River is the life-blood of Southeast Asia. Flowing from the Tibetan highlands through six countries to the South China Sea, the river has average flows of 14,116 cubic meters per second. The monsoon climate of the region promotes great seasonal variability in river flow rates with the high being 52,000 cubic meters per second and the low 1,764 cubic meters per second. The 795,000 square kilometer river basin is characterized as one of the least developed major basins in the world.

The basin is home to the Tonle Sap Lake, located in Cambodia. During the wet season this lake swells to ten times its dry season size. At the end of the wet season the flow of the river is actually reversed as the lake drains back to the river, effectively reversing the river’s flow. These swells provide just one of the many excellent ecosystems throughout the Mekong River for a highly diverse aquatic population of over 1,200 species (Phillips), second only to that of the Amazon River. Fish caught in the Tonle Sap region, 360,000 tons per year, account for 70 percent of the overall protein intake for approximately 75 percent of the regional population. This is only a fraction of the overall Mekong River fish production of 2.5 million tons of fish per year.

Countries

The countries located in the Mekong River Basin include China, Myanmar, Thailand, Laos, Cambodia, and Vietnam. These countries are diverse in their form of
government, total area, flow contributions, gross domestic product per capita, and goals and desires for water use within the basin. The population of the basin is roughly 75 million. These people typically live in rural areas, as the only major population center in the entire basin is Phnom Penh, Cambodia.

Table 1.

<table>
<thead>
<tr>
<th>Country</th>
<th>Government</th>
<th>Population</th>
<th>Total Area Km²</th>
<th>Area in Basin Km²</th>
<th>GDP/ Capita</th>
<th>% River Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Communist State</td>
<td>1,338,612,968</td>
<td>9,596,961</td>
<td>165,000</td>
<td>$6,500</td>
<td>24</td>
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<td>Myanmar</td>
<td>Military Regime</td>
<td>48,137,741</td>
<td>676,578</td>
<td>24,000</td>
<td>$1,200</td>
<td>2</td>
</tr>
<tr>
<td>Laos</td>
<td>Communist State</td>
<td>6,834,345</td>
<td>236,800</td>
<td>202,000</td>
<td>$2,100</td>
<td>26</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Multiparty Democracy Under a Constitutional Monarchy</td>
<td>14,494,293</td>
<td>181,035</td>
<td>155,000</td>
<td>$1,900</td>
<td>26</td>
</tr>
<tr>
<td>Thailand</td>
<td>Constitutional Monarchy</td>
<td>65,998,436</td>
<td>513,120</td>
<td>184,000</td>
<td>$8,100</td>
<td>13</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Communist State</td>
<td>88,576,758</td>
<td>221,210</td>
<td>65,000</td>
<td>$2,900</td>
<td>8</td>
</tr>
</tbody>
</table>

China is the upper riparian in the Mekong River Basin. The initial flows of the river, 24 percent, are generated from glacial melt in the Himalayan Mountains in Tibet. The river then flows through China’s Yunnan Province, a typically poor but rapidly developing area of the country. The potential development in the province has inspired China to use the Mekong River as both a source of hydropower and a potential navigable waterway for goods to and from the South China Sea. China is in the process of developing dam cascades and blasting rapids with explosives to exploit both of these potential uses of the waterway.

A small fraction, roughly 2 percent, of the Mekong River drains from the portion of the basin that resides in Myanmar. The location of this portion of the basin is mountainous and inhospitable to development. This coupled with the military-rule government within the country have prevented Myanmar from playing a major role in Mekong River use or management politics.

Laos is in a unique position in the basin in that it shares a border with every other riparian country. Therefore, Laos has the ability to be in perpetual communication with every other basin country in regard to water resource development along the Mekong. Laos contributes a large fraction of overall river flow from within its borders. There is no shortage of water within the country, but rather a lack of farmable land. The landscape is mountainous and rugged, ill equipped for agriculture. The Mekong River that flows through Laos has the potential to provide a larger amount of hydropower than any other country in the basin.

Thailand is one of the most developed countries in the region with a GDP per capita greater than that of Laos, Cambodia and Vietnam combined. However, the accomplishments in development do not change the fact that the Mekong River never enters Thailand but merely forms a border between Thailand and Laos. Therefore, Thailand does not have the ability to independently make decisions regarding river development and must involve other countries, specifically Laos, in the process. However, there are many major tributaries in Thailand where development has begun.
Cambodia, though surely not the only country in the region to do so, suffered severely during the second Indochina war and the communist Khmer Rouge regime of the 1960’s and 1970’s. The country’s population is still extremely poor, with the lowest GDP per capita in the basin excluding Myanmar. Though the majority of the population is very poor, it has been said that the people are very well fed. The Tonle Sap, as previously mentioned, is the “fish-basket” of the region. Ninety percent of the 360,000 tons of fish caught per year are farmed using traditional capture methods. Fish production is dependent on the natural low and high flow seasons. Cambodia’s poor population will be served through the maintenance of the rivers natural flow scheme.

Vietnam is the lowest riparian country. Modifications on the Mekong’s flow upstream may have potential negative effects on Vietnam due to saltwater intrusion in the delta destroying farmlands. As the country continues to develop, there is a strong interest in hydropower and delta protection.

Management History

Formalized water resource management among of the Mekong River Basin began with the establishment of the Mekong Committee in 1957. The committee members included all countries in the Lower Mekong Basin, Thailand, Cambodia, Laos, and Vietnam, while influence was exerted by both the UN Economic Commission for Asia and the Far East (ECAFE) and the United States. The committee, with the support of the United States, focused on the development of a cascade dam system for hydropower purposes.

In 1975 a progressive Joint Declaration was created by the committee. This declaration contained many progressive principles of law and international water which were eventually included in the 1997 UN Convention. These principles included equitable and reasonable utilization, pollution prevention, the inclusion of interconnected groundwater, and the requirement of short and long term ecological impact studies to be conducted on other countries in the basin prior to the initiation of any project. Within the declaration, major tributaries were to be treated as mainstream waters. A point of contention among countries was the stipulation that all projects in the basin must be approved by all other committee members. This, in effect, provided each country with veto power for any project proposed in the basin.

This document was signed in 1975 but never ratified. In 1978, as the political situation in the region deteriorated, Cambodia withdrew from the committee. From 1978 through the early 1990’s, development was stunted due to the political turmoil in the region. In the mid 1990’s as Cambodia emerged from military rule and China, who chooses to not participate in joint water resource management, began the construction of a large scale dam cascade program on the upper reaches of the river, the lower riparian countries Thailand, Cambodia, Laos, and Vietnam, again banded together. After 21 months of negotiations, the countries established the 1995 Agreement.
The 1995 Agreement, signed by the Mekong River Commission, was the first trans-boundary watercourse agreement to adopt the concept of “sustainable development”. However, this “sustainable development” provision remains largely ambiguous. The agreement also has a lack of legal framework and procedural elements for management and also does not include any dispute resolution criteria. The novel principle presented in the 1975 Declaration regarding tributary treatment was not included in the 1995 revision. This absence allows countries to independently develop tributary flows without the consent of the other riparian countries. Forty-four percent of all Mekong flow begins in tributaries. The modification and development of these sources prior to confluence has the potential to have a dramatic effect on the river.

**Hydropower**

It has been estimated that harnessing all of the potentially feasible hydropower of the Mekong River could produce 55,000 MW. Currently, only 8 percent of this is being generated. This possible expanse in hydropower has the potential to initiate foreign investment and bring new industries to the region, therefore propelling the regional economy forward. However dams are not without demerit. The fraction of population that is typically most adversely affected by dam construction is the most ensconced in poverty. These people are also traditionally dependent on naturally functioning ecosystems. As dams modify river flows and flood schemes the poorest people would be at most risk for loss of food, water and livelihood.

**Climate Change**

As the planet continues to warm, the people and governments of the Mekong Basin will need to adapt to the changes these temperature increases will create. The increased rate of Tibetan glacial melt suggests that the Mekong flow generated in China may not last forever. The changing weather patterns could mean more severe rain events and longer droughts. These ecological changes could have grand effects on the fish populations and therefore the major source of protein for the region’s population. The Mekong River Commission is in the process of helping the basin countries prepare for these potential situations. The Commission has established The MRC Climate Change and Adaption Initiative. The Initiative conducts studies to better understand climate change in the region, investigates the potential adaptations that may be needed and tests potential solutions on a pilot scale, and fosters climate change dialogue with stakeholders.
Required Readings

Can be accessed online: http://www2.lse.ac.uk/granthamInstitute/research/CEPG/LWRG/Publications/BooksAndReports/Phillips%20et%20al%20-%20Benefit%20Sharing%20SMFA%202006.pdf

Suggested Readings
Please visit the Mekong River Commission Website http://www.mrcmekong.org/

References


