

Forum:	Association of Southeast Asian Nations (ASEAN)
Issue:	The question of dam-building on the Mekong River
Chair:	Tiffany Li, Co-chair

Introduction

Leaving China, and changing the river's name from Lancang to Mekong, it descends into the jungle through a natural landscape. Swollen from tributaries from the rainforest, it defines the boundary between Myanmar and Laos and much of the border between Laos and Thailand. Before splitting into distributaries in south-western Vietnam, the Mekong cuts Cambodia in two.

Asia's rice bowl is the Mekong region: the lower Mekong countries (Myanmar, Laos, Cambodia, Thailand and Vietnam) produced more than 100 million tons of rice in 2014, around 15 percent of the total worldwide. The fertile soil of the area relies on nutrient-rich sediment carried downriver by the Mekong, primarily during the rainy season from June to Oct; China accounts for more than half of the sediment in central Cambodia. Accounting for a quarter of the world's freshwater catch, the river and the nutrients it carries also sustain the largest inland fishery in the world, feeding millions of people.

There is extraordinary biodiversity in the region; only the vast Congo and Amazon basins equate to it. There are over 20,000 plant species and about 2,500 animal species. There is also striking human diversity. Around the Mekong are the Tibetan monks, Burmese merchants, Cambodian fishermen, Thai farmers, and Vietnamese markets. The river provides many for the population around it.

Definition of Key Terms

Hydropolitics

This is the term for the study of problems and cooperation of states on water resources. This includes politics that are affected by the availability of drinking water or water resources in general. Hydropolitics deals with inadequate amounts of water for uses such as agriculture.

Hydropower

Hydropower is using water to make electricity. It is one of the renewable, sustainable and climate/environment friendly energy sources. One of the main purposes of the constructions of the Mekong dams is to create hydropower for neighboring populations to use. In the lower Mekong Basin, not including China, there is about 30,000 megawatts of hydropower is produced, making hydropower most significant in the Mekong Region.

Mekong River basin

Is an area of depressed land that covers parts of China, Cambodia, Vietnam, Myanmar, Thailand, and Lao PDR. It provides fish, energy, irrigation, transportation and drinking water for the nearby land and is the most active inland fishery in the world. It is also one of the world's most contaminated rivers, carrying an estimated 40 thousand tons of plastic to the oceans of the world every year. There are a total of 11 working hydropower dams on the river, providing energy but also environmental destruction.

Environmental Degradation

When the natural environment's biological diversity is being endangered in some way, it would be called environmental degradation. While other parts of the world have already lost its rich natural resources, the Greater Mekong's forests still maintain their own resources. However, these river systems and landscapes are being fragmented and smaller parts of areas are being isolated due to drought, flash-floods, etc caused by the building of the dams.

Freshwater

The Mekong River is a freshwater source that provides opportunities such as fisheries, production of hydropower, transport and trade, and agriculture. Up to 25 percent of the world's freshwater is in the Mekong River. However, one of the most polluted rivers in the world would be the Mekong. The river transports tonnes of plastic, around 40,000 tonnes, into the oceans each year, impacting the food chains of many and creating ocean pollution.

Man Made flooding

Not all floods are from natural disasters, ones that are not caused by nature are man made. Man made floods are caused by human factors such as deforestation and urbanisation. When dams on the Mekong were being constructed, the river changed its course and ended up causing floods in the path it took. The upstream part of the river

overflows while the downstream part of the river's water level lowers down. The dams are stopping the natural flow of the river and creating unnecessary floods.

Downstream Effects

Downstream effects of dams include downstream flooding, change of water quality, loss of food security, drought, reduced sediments, and river bank degradation. The river monitoring arm of the Mekong River Commission (MRC) points out that these Chinese dams influence the flow of water in the Lower Mekong Basin, typically decreasing the flow during the wet season and rising it during the dry season.

Background Information

The dams of the Mekong River

Many dams are built to serve a range of functions, including flood management, recreation of flat water, generation of electricity from hydropower and water supply. Although these appear to be legitimate arguments for the presence of dams, these kinds of buildings have greater harmful consequences than good ones. Dams strangle rivers and what is happening to the Mekong River in Asia is the prime example of the harm dams do to rivers. The Mekong supports 100 million people who rely not only on this river for food and water, but also for agriculture and transport, and often for recreation.

The Mekong is in trouble now, like many rivers in the country. Massive dams are being constructed and are not well designed. The ecosystem of the river, as well as the livelihood of thousands of people along its banks, have begun to be threatened by these constructions. These dams, most of which were constructed in the last decade, provide Southwest Asia with electricity. They also, however, interrupt the normal life cycle of fish and affect their fertility and change the water level and quality. Some residents across the river point to the building of the dams as bad and claim they have ruined their daily lives.

Agriculture and Fisheries

Via changes to river flow, sediment flux, severity and timing of floods, loss of riverine and floodplain ecosystems, and the barrier impact of dam structures on fish migration, hydropower dams affect Mekong fish biodiversity.

The LMB's volume of inland capture fisheries is considered the world's largest. It is capable of producing approximately 2.1 million tons of fish annually,

about 18 percent of the world's freshwater capture fish. In terms of nutrition, food and livelihood stability, several studies have identified the importance of captured fisheries for millions of people in the LMB.

Forty to seventy percent of the fish caught in the Mekong basin rely on fish species that migrate along the mainstream and into the tributaries of the river for long distances. An assessment carried out by the Mekong River Commission projected that, as a result of the growth of hydropower under the Foreseeable Future Scenario, approximately 4.4 million people will be impacted by reductions in fishery productivity.

Fish caught in fisheries in the lower Mekong basin may also be adversely affected by non-hydroelectric dam causes, such as overfishing and habitat destruction. Also in development scenarios that do not include hydropower development in the Mekong mainstream, catches of fish in the LMB are projected to decrease in the near future, but the extent of loss is much smaller compared to those with dams.

Disaster and problems

Many Asian countries have been looking at the Mekong River for several years now as an ability to produce power and thereby be able to grow faster. Since most of the regions along the shore are poor governments, the Mekong was seen as a means of raising money. In specific, China and Laos have argued about the possibilities that the river could bring them.

The Mekong dams have caused deforestation, killed habitats and displaced thousands of poor people living along the river, like many other locations in the world. In order to see whether advantages of these dams are equivalent to the environmental and social consequences, these forms of destruction are being revalued.

One problem dams cause is the erosion of the river banks. The sediment load normally found in a river flow is held back by dams, depriving the downstream of this. The downstream water erodes its channels and banks to make up for the sediments. Vegetation and river wildlife are endangered by this lowering of the riverbed.

The Mekong Delta, being a low-lying coastal area, is especially susceptible to floods caused by rising sea levels due to climate change.

Industry and Economy

Our agricultural systems, our energy production, our production, our food security, our habitats and our well-being as humans are underpinned regionally by the Mekong River. The Mekong River Basin is a vast landscape, deeply entrenched for thousands of years in a water-based economy which is often concealed. The Mekong economy has always been tied to the fortunes of the river, from transportation and fish protein to some of the most fertile crop growing regions on the planet. Indeed, in order to witness the fundamental role of water in shaping the capacity of this entire area to flourish, one only needs to look at the extensive irrigation systems of ancient cities, such as the magnificent Angkor Wat.

Key services, such as water, sediment and nutrient flows and wild fishing, are supported by the river. These are linked to the economy by providing inputs to sectors such as agriculture, aquaculture and construction, by fostering livelihoods and competitive labor costs in the region, and by underpinning trade and investment in the basin. The countries of the Mekong River are linked, from an economic point of view, by physical flows (such as fish, water and sediment) and by trade in economic goods (such as electricity, food and manufactured products).

Major Countries and Organizations Involved

Thailand

The Mekong flows alongside the northern Thai city of Nong Khai, on the other side of the river, forming the boundary between Thailand and Laos. Although there are less dams built in the Thailand region of the Mekong compared to other areas such as Laos and Cambodia, Thailand still raised objections to the new Sanakham Dam plan. As a member of the Mekong River Commission, Thailand raised their concern of the dam being too close to their country during a meeting with fellow MRC members, Laos, Cambodia, and Vietnam. They fear the change of the river course and question the safety of people living nearby since the impacts of the dam construction is unpredictable. Thailand currently imports significant amounts of hydroelectricity from Laos and is Laos's largest electricity market. In addition to having a positive effect on the Thai economy in terms of growing electricity demand and stimulating economic development in Thailand, the increase in electricity imports from Thailand from Laos also has a positive impact on the Lao economy in terms of increasing revenues from electricity exports. A number of Memorandums of Understanding (MOUs) have been signed

by Thailand to import large amounts of electricity per year from its neighboring countries, including Laos.

Laos

With a per capita gross domestic product (GDP) in the Pacific region of only 1,204 USD in 2011 (IMF, 2011b), Laos is one of Asia's poorest countries. Half of its GDP is derived from subsistence agriculture, 80% of which provides employment. Mineral resources are essential to the Lao economy. In order to produce large reserves of bauxite, coal, copper, gold, tin and other valuable metals, metallurgy is an important industry that is expected to draw foreign investment. Laos is also rich in water supplies and mountainous terrain, enabling the country to produce and export large quantities of hydropower to its neighbors. Approximately 44.4% of the hydroelectricity produced was exported to Thailand and Vietnam (ADB, 2007). Thailand has become a net electricity importing country as the rising demand for electricity exceeds its supply. The trade in electricity between Laos and Thailand began in 1972 with the commissioning of the first dam in Laos. Several MOUs have been signed to date between the Government of Laos and the Government of Thailand with an aim of increasing the import of electricity from Laos. As a result, Thailand has become the largest market for the export of electricity from Laos, and Laos is also the principal exporter of electricity to Thailand.

Vietnam

The Mekong River has a rich agricultural history in Vietnam and Asia, in general. It is the 12th longest river in the world and runs across six countries. In particular, since it is home to the Mekong Delta, where the river ends and empties into the sea, Vietnam is an outstanding place to see the river. In Vietnam, the Mekong Delta has been a central agricultural area for many years. It was an important area for the production of most food crops in the country; it still provides more than one-third of Vietnam's food today. It is also, second only to the Amazon River, one of the richest areas of biodiversity in the world.

Consistent expressions of Vietnam's critical concern have been triggered by a cascade of dam projects in Laos on the Lower Mekong, with its delta extremely vulnerable to the devastating downstream impacts of such dams. Back in 2011, Vietnam's former Prime Minister openly called for all work to come to an end at the Xayaburi Dam. Laos was also called on by Vietnam to rethink all subsequent dams. Now, however, through its promotion of the biggest dam yet on the lower Mekong, the 1,410 MW Luang Prabang dam, the Vietnamese government has switched sides and slipped into bed with the dam developers. If

Vietnam were to engage in the development of the Luang Prabang Dam, it would also contribute to the negative impact on the Mekong Delta.

Cambodia

The Mekong connects to the special river system of Cambodia. The Tonle Sap flows into the Mekong during the dry season, where the two rivers converge in Phnom Penh. According to the state utility, Electricite du Cambodge, Cambodia uses hydropower for about 48 percent of its domestic electricity supply. Due to a record drought and low fish catches over the past year, caused by climate change and over fishing, Cambodia had decided to halt Mekong dam plans for 10 years. Although Cambodia had announced plans for two Sambor and Stung Treng dams, both projects are currently on hold. The country fears that the river's biodiversity and environment would be devastated if more dams were constructed.

China

In 2016, with five other nations: Laos, Thailand, Myanmar, Cambodia and Vietnam, Beijing initiated a Mekong water cooperation initiative called the Lancang-Mekong Cooperation System (LMC). Critics stated that it might allow China to arm water for economic and geopolitical gains but still welcomed the cooperation opportunity.

The release of inaccurate data on river flows was also blamed on China. It only provides its water level and rainfall data from two of its many Upper Mekong stations during the flood season, an amount that is 'inadequate' for water management purposes, according to the commission.

Mekong River Commission

The MRC was founded in 1995 by an agreement between the Cambodian, Lao PDR, Thai and Vietnamese governments. To promote and organize sustainable water and related resource management and development for the mutual benefit of countries and for the well-being of citizens is the MRC's mission and purpose.

WWF (World Wide Fund for Nature)

WWF works across the entire Mekong to address the problems of dams, overfishing and climate change. For more than three decades, it has been involved in the region and has

developed close connections with societies, governments, businesses and other organizations. It promoted sustainable fishing in partnership with locals to better organize current and potential human needs with those of the wildlife sharing this mighty river. Fisheries programs enable local people to make a better livelihood by sustainably maintaining their water and fish resources. WWF has also integrated rural communities' expertise and experience into national and regional policy and management strategies. The WWF is increasing the network of freshwater protected areas, as well as encouraging sustainable fishing.

Lancang Mekong Cooperation

The Lancang Mekong Cooperation is a China-led group that consists of Cambodia, Laos, Myanmar, Vietnam and Thailand. Since 2012, when Thailand first proposed the Initiative on Sustainable Development of the Lancang-Mekong Sub-region, Lancang Mekong Cooperation has been in operation to solve Mekong river 's water resource problems.

Timeline of Events

Date	Description of event
1957	The UN creates the Mekong Committee (the Committee for Coordination of Investigations on the Lower Mekong River Basin) with Cambodia, Lao PDR, Vietnam and Thailand as members
1970	Indicative Basin Plan released by Mekong Committee
April 5th, 1995	Agreement on Cooperation for Sustainable Development of the Mekong River Basin (the 1995 Mekong Agreement), which established the MRC (Mekong River Commission), was signed by Cambodia, Lao PDR, Vietnam and Thailand
1997	The Mekong basin development planning process starts, mainly focusing on the water resources that provided food and economic uses for the nearby people
2019	MRC Council adopted the Drought Management Strategy 2020-2025

Relevant UN Resolutions and Treaties

- The Mekong Agreement, 5 April, 1995
- The Convention on the Law of Non-Navigational Uses of International Watercourses (UN Watercourses Convention), 21 May, 1997

Possible Solutions

Promote sustainable economic development and poverty reduction

The destructive cycle that spirals the ecosystem further downwards is continued by poor populations, ignorant of the errant, unhealthy ways in which they use natural resources, such as water and fish. Another way that poverty leads to environmental destruction is water pollution. With people's existing practices used to deliver a basic standard of living, economic sustainability is not feasible. The economy and the new way of life have to change to achieve economic sustainability. Society needs to be more effective in using the resources available, finding new ways to leverage the resources already underused and reducing consumption in the process. There should be regional approaches for the evaluation of each proposed hydropower project that would take into account fisheries, drainage, environmental protection and management, river navigation, flood management and tourism.

Regional flood forecasting and flood monitoring

Because of its vital contribution to reducing economic and life losses, flood forecasting is one of the most significant issues in hydrology. Flood forecasting is one of the few viable solutions for handling flooding in many regions of the world. Due to the incorporation of meteorological and hydrological forecasting capabilities, advancements in data collection via satellite observations, and improvements in information and algorithms for uncertainty analysis and communication, the reliability of forecasts has improved in recent years. Flood monitoring and forecasting would minimize destruction of nearby land and create a chance for people to have a greater control of the river's water flow.

Assessing hydropower's position in combating climate change compared to other energy alternatives

Non-renewable energy such as oil, gas, and charcoal do not have low emissions of GHGs compared to hydroelectric dams. However, a comprehensive regional energy and climate change mitigation assessment is required since large dams intensify the substantial

social and environmental impacts of climate change. A high priority for further research is to determine the degree to which alternative energy technologies will meet MRB energy demand, such as improvements in energy production, renewable resources such as biomass, solar, resources and more reliable and cleaner transport, while preserving water systems and ecosystem services that are essential to life in the basin and supporting mitigation of climate change. The Stockholm Environment Institute has recently established a connection between its WEAP water resource model and the LEAP energy model to analyze the hydrological consequences of various energy-generating scenarios.

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