



A fisherman harvests fish from the Khone Falls in Southern Laos, an area now threatened by the Don Sahong Dam. (© Suthep Kritsanavarin)

Mekong Mainstream Dams

THREATENING SOUTHEAST ASIA'S FOOD SECURITY

The Mekong is under threat. The governments of Cambodia, Laos, and Thailand are considering plans to build eleven big hydropower dams on the Mekong River's lower mainstream. If built, these dams would harm the river's ecology and block the major fish migrations that feed and provide income to millions of people.

PLANS FOR MEKONG MAINSTREAM DAMS REVIVED

While China is midway through the construction of a controversial cascade of dams on the Upper Mekong (Lancang), the lower stretch of the river – shared by Thailand, Cambodia, Laos, and Vietnam – has so far escaped hydropower development. For the 60 million people living in the Lower Mekong basin, whose food, income, and other needs are provided for in part by the “mother of all rivers”, this has been good news. Yet, as the region's economies grow and electricity demand increases, plans for a series of dams on the Mekong River's lower mainstream have been revived.

Since mid-2006, Thai, Malaysian, Vietnamese, Russian and Chinese companies have been preparing detailed studies for a cascade of eleven large hydropower dams on the Mekong River's mainstream. Seven of the dam sites are in Laos, two are in Cambodia, and two are on the Thai-Lao border. Most of the power generated would be sent to energy-hungry cities in Thailand and Vietnam.

By changing the river's hydrology and ecology and blocking major fish migrations, these dams would have serious repercussions throughout the entire basin and put at risk the livelihoods of millions of people who depend on a healthy Mekong River.



THE MEKONG RIVER'S FISHERIES: FEEDING SOUTHEAST ASIA

The Mekong River supports the world's largest inland fishery. According to the Mekong River Commission, approximately 2.6 million tons of wild fish and other aquatic resources are harvested each year, worth at least US\$2 billion at first-sale value. Taking into account secondary industries, such as fish processing and marketing, the total economic value for the Mekong's fisheries is between \$5.6 and \$9.4 billion per year, contributing significantly to the region's economy.

Not only are these fisheries an important source of income for local fishers, which include many of the region's poorest people, but they are also vital in ensuring regional food security. The number of fishers living along the Mekong River's mainstream and major tributaries who would be directly affected by reduced fish catches and income almost certainly numbers in the millions.

Around 70 percent of the Mekong River's commercial fish catch migrate long distances, which is essential for their life cycle. Building dams on the Mekong River's mainstream will block these migrations. Experience around the world indicates that these impacts cannot be mitigated. Existing fish passage technologies cannot handle the massive volume of fish migrations – which can reach up to 3 million fish per hour at peak migration times – and the diversity of migration strategies that characterize the Mekong River's hundreds of fish species.

The Mekong mainstream dams' impacts on fisheries will have significant costs on people's food security, nutrition and health. Between half and four-fifths of the animal protein

consumed by the 60 million people in the lower Mekong Basin come from the river's fisheries.

The Mekong River's fisheries not only feed the communities living alongside it, but also the residents of the region's bustling towns and cities. A reduction in fish catch will reduce fish availability in the marketplace, leading to shortages and price increases, ultimately lowering fish consumption. Poorer families will be especially hard hit. Replacing the current contribution of fish protein with other sources of protein, if possible at all, will be immensely expensive and a daunting logistical challenge.

As fish protein is central to human nutrition in the Mekong region, the reduction of fish catch will increase the incidence of malnutrition that is already a serious problem in some areas. Consequently – in a downward spiral – health will suffer and illness become more common, ability to learn will diminish, family productivity will decline, and poverty will deepen.

Ultimately, because of the potential impacts on food security, nutrition and health, building dams on the mainstream could seriously set back government and international donor efforts to alleviate poverty and meet the Millennium Development Goals.

MAINSTREAM DAMS: MANY COSTS

In addition to the severe impacts on fisheries and regional food security, many other impacts can be anticipated if the mainstream dams are built.

In total, the dams would create over 600 km of reservoir along the Mekong River that, according to official estimates, would require the resettlement of 88,000 people. It's a sad reality that in the Mekong Region to date, people displaced by hydro-power projects have become worse off after resettlement.

The Mekong River's extraordinary aquatic biodiversity, which is second only to the Amazon, would also be threatened. A number of the migratory fish species that would be affected by the mainstream dams are important sources of food for predatory species. Such keystone species are central to the stability and productivity of the Mekong River's over-all ecosystem, and their loss could result in significant – and unpredictable – ecological consequences. The dams would also push already endangered species such as the Irrawaddy Dolphin and the Mekong Giant Catfish to the brink of extinction; losing this ecological wealth would be a tragedy of global proportions.

Mainstream dams would also disrupt the river's hydrology and block the movement of fertile sediments carried by the river. These sediments are natural fertilizers that are deposited on the river's banks, floodplains and throughout the delta, nourishing the soils and minimizing the need for costly artificial fertilizers.

Impacts of China's Mainstream Dams

China has plans to build a cascade of eight dams on the Upper Mekong mainstream (Lancang). To date, three projects have been completed. The fourth, and one of the largest in the cascade – Xiaowan – started filling its reservoir this year, and at least two more are under construction. These projects will drastically change the Mekong River's natural flood-drought cycle and block the transport of sediment, affecting ecosystems and the livelihoods of millions living downstream in Burma, Thailand, Laos, Cambodia and Vietnam. Impacts to water levels and fisheries have already been recorded along the Thai-Lao border. Despite this, construction has proceeded without consultation with China's downstream neighbors and without an assessment of the dams' likely impacts on the river and its people.

Mekong Mainstream Dam Plans



PROJECT DESCRIPTION AND STATUS

Since mid-2006, the governments of Cambodia, Laos and Thailand have granted approval to Thai, Malaysian, Chinese, Russian and Vietnamese companies to investigate eleven dams on the Mekong River's mainstream.

The dams' heights range from between 30 and 70 meters and, in combination, would generate over 14,100 megawatts of electricity. The Don Sahong dam in Southern Lao will block the most important fish migration channel through the Siphandone island-complex, whilst the other ten projects will block the mainstream channel's entire width.

As of July 2009, nine of the projects were at the feasibility stage, whilst two projects (Don Sahong and Xayabouri) had advanced to detailed design stage. The projects are planned to be commissioned between 2013 and 2020.

THE MAJESTIC MEKONG INSPIRES

The timeless rhythm of the Mekong River's seasonal cycles has nourished and inspired the peoples of the region for millennia. As the river provides many of life's basics for both rural and urban populations, it also nourishes their vibrant cultures and traditions, inspiring music, dance, song, cuisine, crafts, and rituals that breathe colorful life into the region. Throughout its course, celebrations of the river abound. Cambodia's famous "water festival" in November, for example, marks the mass fish migrations from the Tonle Sap Lake as it empties into the Mekong with electrifying boat races.

The river has inspired a wealth of folklore. In Laos and Thailand, for example, the "Naga Fireballs" draw tens of thousands who are awed by the reddish-pink orbs that mysteriously emerge from the river. The fireballs are said to be the mythological serpent Naga's breath, forming a staircase to heaven for the Lord Buddha to descend and close Buddhist Lent. If the Naga's rivery home was turned into a series of placid lakes by mainstream dams, would it continue to work its magic?

The region's rich and diverse culture is also proving a burgeoning market for ecotourism, yet several of the mainstream dams threaten emerging ecotourism hotspots. Promoting tourism is a commonly shared policy of all governments throughout the Mekong region. At the Siphandone region, in Southern Laos, the Irrawaddy Dolphins and the Khone Phapheng Falls are national tourist attractions that sustain a thriving local tourism industry. Both attractions would be irreversibly affected by the proposed Don Sahong Dam. And, in Ubon Ratchathani province, Thailand, the Ban Koum Dam threatens to submerge the "moonscape of the Mekong", an unearthly natural landscape formed from over 3,000 holes carved into the rocks by the river.

BETTER ENERGY SOLUTIONS

Fortunately, the energy revolution that is now sweeping the globe provides many new options to meet electricity demand, making river-destroying big dams an outdated technology. Electricity needs can now be better met by improving energy efficiency and deploying recent innovations in decentralized and renewable energy technologies. By



adopting national energy policies that encourage investment in these new energy technologies, the Mekong governments could leapfrog the 1950s-era of big dams and start growing sustainable, modern economies without losing the benefits that healthy rivers bring.

AN UNPRECEDENTED PUBLIC OUTCRY

Over the past two decades, public concern about extensive plans for big dams throughout the Mekong region has been growing. With the revived proposal for mainstream dams, these concerns reached new heights. On March 14, 2009, the Save the Mekong coalition launched a new campaign to protect the Mekong River. The Save the Mekong coalition is a network of civil society groups, academics, journalists, artists, fishers, farmers, and ordinary people from within the Mekong countries and internationally – including International Rivers – that is working together to protect the Mekong River, its resources and people’s livelihoods.

Since its launch, the Save the Mekong coalition has collected over sixteen thousand signatures from concerned citizens in the Mekong countries and around the world through a post-card and online petition urging the region’s political leaders to keep the river flowing freely and to pursue less damaging electricity options. The petition is signed by fishers and farmers living along the river’s mainstream and tributaries, as well as by monks, students, city-folk and even some of the region’s well-known celebrities.

THE MEKONG RIVER COMMISSION

The Mekong River Commission (MRC) is a regional river basin management organization directed by the governments of Cambodia, Laos, Thailand and Vietnam with a history of promoting hydro development along the mainstream that dates

back to the 1950s. Today the agency survives on international donor aid from the World Bank, Australia, Denmark, Finland, France, Japan and Sweden, amongst others.

Continued efforts by civil society groups over the past two years to ensure disclosure of information on the impacts of the dams from the MRC have received limited response, despite the compelling scientific evidence from the MRC’s own research papers that indicate the mainstream dams’ severe impacts. Instead, the MRC has skirted some of the most critical issues, including on ensuring transparency and public participation, and protecting regional food security, and is positioning itself as a “facilitator” among the region’s hydro developers. For the MRC to become the credible river basin organization it aspires to be, it must immediately place in the public domain all of its relevant reports about the Mekong mainstream dams, and act in a manner that is transparent, objective and accountable to all stakeholders.

A HEALTHY MEKONG RIVER IS PRICELESS

The Mekong mainstream dams just don’t add up. In a region where wild-capture fisheries remain of critical importance to riparian communities, these dams threaten to undermine fishery- and tourism-based economies, as well as regional food security. As the Mekong River sustains both rural and urban populations and is intimately linked to local cultures and traditions, the recent revival of plans for dams on the river’s mainstream will undermine the region’s prospects for sustainable development.

The decision-making processes for these mainstream dams to date have largely ignored the potential harm to the river’s biological and cultural richness. While there is greater acknowledgment globally that large dams can be hugely destructive forms of development, in the Mekong region these mainstream dams are being examined under a veil of secrecy.

In a world facing a growing food and water crisis, working together to protect and share the river’s rich resources, rather than wrecking them, should be a high priority for the region’s decision-makers. Acting to protect the priceless, life-giving Mekong River’s natural wealth will in turn ensure sustainable economic growth, protect food security and promote regional peace and prosperity.

WHAT IS INTERNATIONAL RIVERS DOING?

As a partner of the Save the Mekong coalition, International Rivers is working to raise regional and international public awareness about the risks associated with damming such an important international river, and to persuade policymakers to adopt more sustainable and peaceful ways of meeting people’s energy and water needs.

JOIN US!

For more information, visit International Rivers’ website: internationalrivers.org, and the multi-lingual website: savethemekong.org.