



The 1999 Mekong Papers

Presented by:

MekongForum

5235 Avenida Encinas, Suite G
Carlsbad, CA 92692, USA

and

Vietnamese American Science & Technology Society

1910-62 Palmyra Avenue
Orange, CA 92868, USA

Front cover photo: Sunrise on The Mekong by MekongForum
Back cover photo: Floating House on The Mekong by Hai D. Pham
Published by: MekongForum & The Vietnamese American Science and Technology Society
Printed by: Mekong Printing Inc., Santa Ana, California, U.S.A.

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December 28, 1999

The Honorable Yamaha Suto *and* Members of Distribution List
Mekong River Commission Secretariat
P.O. Box 1112
364 M.V. Preah Monivong
Sangkat Phsar Doerm Thkouv, Khan Chamkar Mon
Phnom Penh, Cambodia

Subject: **The Mekong River Basin in the 21st Century**

Dear Mr. Suto,

The MekongForum and The Vietnamese Science and Technology Society wish to present you The 1999 Mekong Papers which contain "**The 1999 Mekong River Declaration**" and a number of supporting articles written by scientists, engineers, and economists familiar with the historical and recent development of the Mekong River Basin.

The 1999 Mekong Papers include:

- ◆ **The 1999 Mekong River Declaration**
- ◆ **The Importance of the Mekong River to The Cambodian People**
- ◆ **The Existing Challenges and Future Dangers to the Tonle Sap and the Mekong Delta**
- ◆ **POWER STRUGGLE: The Impacts of Hydro-Development in Laos**
- ◆ **Vietnam and the Development of the Mekong**

The 1999 Mekong River Declaration is the product of an international conference held by MekongForum and VAST in California last May. This Declaration has garnered the enthusiastic endorsement of the scientific communities, the natives people of Cambodia and Vietnam, the Australian Vietnamese Science and Technology Link, the International River Network and Both ENDS.

The 1999 Mekong Papers expressed the Conference attendees concerns on the serious impacts of Mekong development projects on this pristine environmental resource and the fragile food security of the millions Mekong farmers and fishermen. We urge you to take all necessary actions to protect the biodiversity of the region and the vital interest of the 100 million people living in the Mekong River Basin.

Respectfully,



Dr. Tran Tan Phat
President
MekongForum



Dr. Mai Thanh Tuyet
President
Vietnamese American Science and Technology Society

The 1999 Mekong River Declaration

Safeguarding the Mekong River, Her Delta, and Her People

The Mekong River, the world's 11th longest river, is also the world's 2nd most biodiverse river. Fed by the melting snows of the Tibetan Himalayas and monsoon rains of Southeast Asia, the 4200 km Mekong is home to thousands of rare and endangered species of plants and animals. The main river and her countless tributaries nourish and support over 100 million people from China in the north to Burma, Thailand, Laos, Cambodia, and finally to the millions living in Vietnam's Mekong Delta region.

The fish in the Tonle Sap Lake, UNESCO's Biosphere Reserve, and the Mekong represent the source of 80% protein for millions of Cambodian and Vietnamese living there. The Delta, Vietnam's "rice bowl" and its crops are feeding and sustaining the people of many nations, making Vietnam the second largest rice exporting country in the world. Today, the Tonle Sap Lake and the Delta region, and all those residing in the Mekong Basin are threatened by the reckless development and misuse of this great river and her waters. The new threats are far greater than any drought or flood in their history of existence.

Water diversion and development projects along the Mekong River and her tributaries threaten not only to the Delta inhabitants' way of life, fisheries and agriculture, but also to the river and Delta ecosystems. Scientists and engineers around the world are concerned by the environmental damage to the Delta caused by development projects far upstream. These projects include large-scale hydropower developments in Yunnan [China] and Laos, along with the massive Mekong water diversion projects proposed by Thailand. The economic costs and environmental consequences of the projects, however, are being borne most heavily by those living and farming farther downstream in the Mekong Delta. These people have no voice in these project decision making process, reap no benefit from these projects and bear the greatest burden of their impacts.

Alarm bells are now ringing in the Tonle Sap Lake and the Delta. The fish catch in the Tonle Sap Lake in recent years has decreased by 50%. In November 1998, the annual flood needed by the Delta farmers to control soil acidity and saltwater intrusion did not arrive. The water level at Tan Chau monitoring station, at the end of the 1998 rain season, fell to a 73-year record. Accompanying the drastic reduction in Mekong water levels are similar reductions in fishing harvests and loss of the Mekong's nutrient-rich river sediments which are essential for rice farming and crucial for erosion control. The water table in the delta is now falling due to the shortage of river water available to recharge the aquifer. Saltwater has invaded up to 70 km into the Mekong delta, threatening to contaminate existing ground water supplies and rendering million of hectares of farmland unproductive.

Existing and proposed water-diversion and hydropower dam projects will alter the Mekong Basin's hydrologic cycle permanently. Upstream, thousands of square kilometers of critical forest could be inundated due to reservoirs. Downstream, the floodplain's croplands could be deprived of the water and fertile silt supplied by the annual floods. Some 100,000 people could be displaced. Experts around the world have established that if one robs a river of its waters and alters its natural cycles, that river will die.

The fisheries, the agriculture and environment richness of the Tonle Sap Lake, and the Mekong Delta must be protected on behalf of all the people of Southeast Asia. The Mekong river - the world's last remaining major unobstructed riverine ecosystem must be preserved and the food security of 100 million poor people should be safeguarded.

We urge action now to safeguard the Mekong River ecosystem and her people and submit this to:

The governments of China, Thailand, Myanmar, Laos, Cambodia, and Vietnam
The United Nations Development Program and The Mekong River Commission
The World Bank
The Asian Development Bank
Donor Countries and International Aid Agencies
Multinational Corporations and Investors

We call upon all national and international agencies, policymakers, and residents of the Mekong Basin and Delta region to observe and uphold these principles for responsible development of the Mekong River Basin:

1. That a moratorium be imposed immediately against further Mekong water-diversion, damming, and hydropower projects, the top priority for national and international agencies should be the development of scientific baseline data on the Mekong, its hydrology, and its ecosystems.
2. That a comprehensive environmental impact assessment will be required for all Mekong projects and an environmental management system in compliance with ISO 14000 series will be required from all Mekong projects developers. The EIA's shall be carried out by independent and qualified scientists, free from any conflict of interest.
3. That all Mekong development and diversion projects, regardless of their sources of finance and ownership, must honor and grant the "right to be educated" along with "the right to know" for all affected populations. Affected populations must be provided with adequate information and knowledge necessary to understand the project's design, review the costs and benefits, and assess for themselves the long-term impacts of the project.
4. That all affected populations throughout the basin, without regard to national borders, have the right to participate in any project's "go or no go" decision.
5. That all agencies and authorities conduct their business on the principles of transparency and full disclosure, that all development plans, agreements, environmental baseline data, environmental impact assessment reports, feasibility studies be made public and available for review by the international scientific community, non-governmental organizations, and by individual private citizens.
6. That the development of all policies and decisions, project, and rules and regulations of the Mekong River Commission and all member nation agencies shall include a public participation program with guaranteed freedom of expression and freedom of the press.
7. That developers, owners and development agencies be held responsible for all planned and unplanned environmental losses and damages caused by their projects and for the losses inflicted on properties, people's income and livelihood.
8. That the four Lower Mekong nations: Laos, Thailand, Cambodia and Vietnam modify the 1995 agreement to closely follow the language of the United Nations' Law of the Non-Navigational Uses of International Watercourses of 1997; and that China and Myanmar join the above four lower Mekong countries, and together negotiate an agreement for the development and protection of the Mekong in the 21st Century.

Considered and Adopted at:

The 1999 Conference on The Mekong River at Risk
The Impact of Development on the River, her Delta, and her People

and Endorsed by:

The United Hometown Associations of Tien Giang and Hau Giang
The Cambodian Association of America
International Rivers Network
Both ENDS
The Australian-Vietnamese Science and Technology Link
The Vietnamese American Science and Technology Society
The MekongForum

The Importance of the Mekong River to The Cambodian People

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The Mekong River, the eleventh longest river in the world with 4200 km, rises on the Tibetan Plateau, flows generally southeast, and empties into the South China Sea through a large delta. The river and her countless tributaries nourish and support over 5.0 million people, from China to Myanmar, Thailand, Laos, Cambodia and Vietnam. In Cambodia, the Mekong River runs from the north to the south, for a little over 500 km. It supports the blood veins of Cambodia economy and the livelihood of the Cambodian people.

- The section from Vietnam border upstream to Kratie for about 400 km is navigable all-year-round. Ocean-going vessels of 2,000 tons are moving up and down the river regularly from the sea to Phnom Penh. From Phnom Penh, north to Kratie about over 200 km, the fluvial traffic is intense; farmers bring in their agricultural products to the market.
- The alluvial soil deposited along the river after high water season creates ideal conditions for agricultural cropping such as: rice, corn, tobacco, potatoes, and fresh vegetables.
- Mekong River is one of the main sources of fresh water fish supply. It supplies about 20% Of protein from fish to the Cambodian people.
- From Phnom Penh to the Great Lake for about 120 km., meanders the Tonle Sap, also known as the Great Lake. During the dry season the Tonle Sap covers 250,000 ha but during the wet season it can reach 1,250,000 ha. it is one of the richest lakes in Asia. The fish production varies from 50,000 to 60,000 tons per year which represent 80% of national fish production.
- From the viewpoint of nutritional values the Great Lake supplies 60% of protein needed by the Cambodians.
- The Mekong River and the Tonle Sap are ideal sites for eco-tourism. More and more tourists are coming to take advantage of this natural beauty, rich in culture.

- By 1996, 54 dams were scheduled to be built on the Mekong River and her tributaries. In Cambodia, only two dams have been planned on the main channel: Sambor and Tonle Sap; but so far none has been realized yet. Only one dam was built on the tributary; Prek Thnot, in 1960; currently, it has not been rehabilitated yet because it was damaged during the war,



Casting Net [Photo by Hai D. Pham]

Today, the Mekong River is seen by many as one of the great "undeveloped resources" of Southeast Asia, however, one should not be rushed into developing this last remaining major unobstructed riverine ecosystems.

The 50 million residents and countless river and floodplain biota of the basin depend on the Mekong's annual flood-drought cycle, and the entire natural functions driven by this process. All planned water resource developments must meet the requirement of a comprehensive environmental impact assessment carried out by independent and qualified scientists, free from any conflict of interest, and political pressures.

The Existing Challenges and Future Dangers to the Tonle Sap and the Mekong Delta

Long P. Pham, P.E.
MekongForum

Introduction

The Mekong River, the world's second richest river biota originates from the Tibetan Plateau and has a 790,000 square kilometer catchment area. It carries 475 billion cubic meters (BCM) of runoff and transports 250 million tons of sediment to the South China Sea every year [1]. Below Yunnan, the Mekong Basin is home to about 60 millions people; this population includes almost all of Laos and Cambodia, one third of Thailand, and one quarter of Vietnam. The Mekong River's hydrologic cycle and ecological processes are being threatened by several massive upstream developments. This includes a total of 37,000 MW of proposed hydropower projects in China and Laos, and 8,800 MCM of water diversions proposed in Thailand.

While the power is produced to energize the industry of Yunnan, to revive the economy of Bangkok and to produce a wind fall revenue for the government of Laos, the lower Mekong inhabitants in Cambodia and Vietnam were promised that 10-year flood events or smaller would be controlled. What a son of the Mekong Delta would likely to say to that? "Excuse me! Small floods are our blessing not our disaster."

The Delta inhabitants are mostly farmers and fishermen. They have survived natural floods, not for ten's, not for hundreds, but for thousands of years without any dams or water diversion projects. Their livelihoods have depended totally on the river, and the annual flood-drought cycle for the entire history of their existence. Below the Khone Falls is the Tonle Sap and the Delta, a distinctly flat physio-graphic area called the Mekong Plain. There, the Tonle Sap is the largest freshwater lake of Southeast Asia, which covers 27,000 hectares during the dry season and 150,000 hectares during the rainy season. The Tonle Sap River reverses her flow seasonally and acts as a reservoir to regulate the flow of the Mekong.

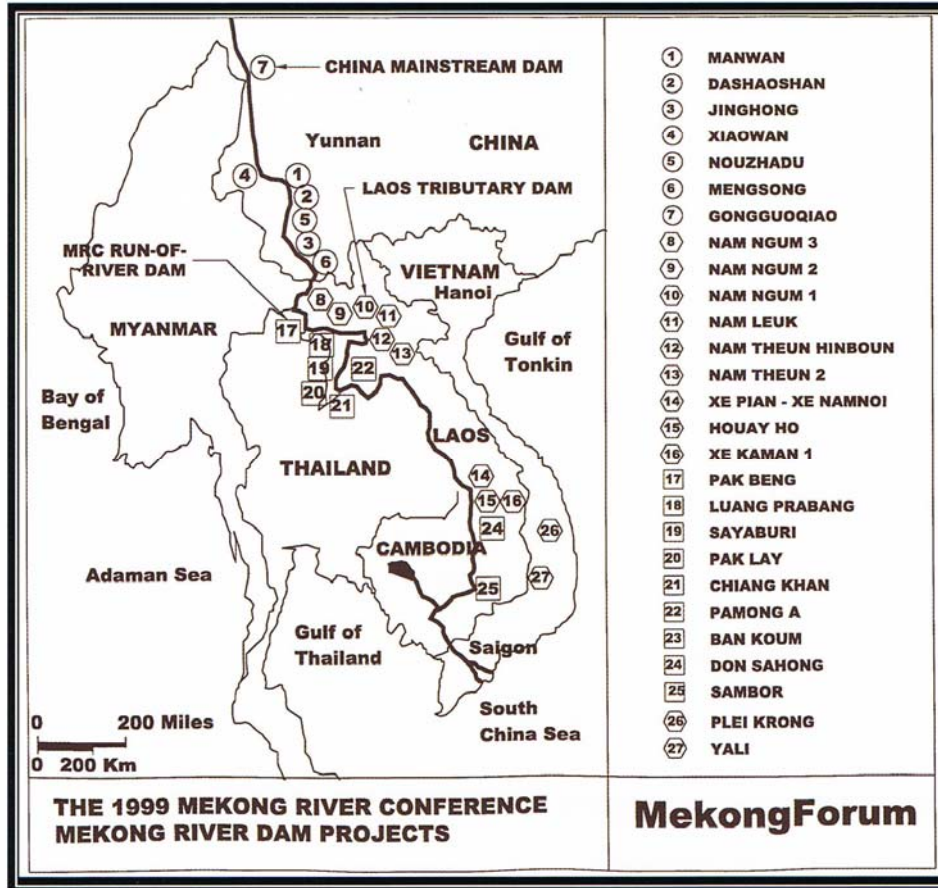
While the Tonle Sap is vital for Cambodia, it produces 100,000 tons/year of fish providing 80% of the protein consumed within the country [2]; the Delta is vital for Vietnam, it produces 14 million tons of rice harvest, exports 4 million tons Vietnam the second largest rice exporting country in the world. The Tonle Sap Lake and The Mekong Delta are life supporting organs for the Cambodian and Vietnamese economy.

The Mekong Delta people have learned to tolerate the floods and appreciate the many benefits brought about by the floods: the nutrient rich sediment and the water for their paddies, and the feeding and spawning ground for their fish in the seasonally flooded forests. They rely on the large flood water volume to leach, flush, and control acid in their soils. Therefore, the real danger to them is not the floods but the dams and diversion schemes upstream. A change to the river flow and sediment loading will trigger immediate impacts on their environment and undermine their food security.

If these development projects are completed, the vibrant Tonle Sap fisheries would be diminished, the Mekong Delta would turn into an acid plain, her ground water into brine, and the coast would be eaten away by the South China Sea. America has lost the Colorado Delta and Egypt lost the Nile Delta. The Mekong may be the first major river that is prevented from sharing this fate. The paper will briefly review:

- ◆ The existing challenges faced by the Mekong Delta inhabitants.
- ◆ The general impacts of hydropower development.
- ◆ The specific impacts of hydropower projects in China.
- ◆ The specific impacts of hydropower projects in Laos and other tributary dams.
- ◆ The specific impacts of hydropower projects proposed by Mekong River Commission.
- ◆ The implications of water diversion plans in Thailand.

Figure 1.1 The Mekong River



1. Existing Challenges at the Mekong Delta

The fertile Mekong Delta has always been the "rice bowl of Vietnam", but that does not mean life is easy for the farmers living there. Mekong Delta inhabitants already bear heavy burdens with their existing soil and water as is. The upstream development projects would aggravate the problems and transform them into catastrophes:

1.1 Acid sulphate soil: Out of the 4 million hectares of the Vietnam Mekong Delta, 1.6 millions contain pyrite or acid sulphate soil (ASS), meaning the soil is acidic or potentially acidic, both of which would be hostile to agricultural activities. The Delta farmers depend on the annual flood for the vast volume of water they need to leach and flush acid off their soil. The process is both labor and water-intensive which must be continued during the plant growth cycle and then repeated year after year [3].

This is a reason why controlling small floods are not exactly welcome news for Mekong Delta farmers.

1.2 Drought: Although not falling on the direct path of the El Nino southern oscillation, the Mekong Basin has experienced longer and more widespread droughts than normal. Despite the fact that total precipitation over the Basin showed little sign of reduction, the water levels at Tan Chuuo and Chuuo Doc stations fell below the 73-year record since in November 1998. At the same time, the annual flood did not arrive to the Delta. These are not just warnings but alarms that Cambodia and Vietnam must take seriously. No possible cause should be left unquestioned: neither the massive development scheme in China and Laos, nor the diversion in Thailand, nor the deforestation, nor the relentless and intensified farming activities in the Mekong Delta. It's time for the scientists to voice their concerns out of their sense of responsibility and intellect.

1.3 Saltwater intrusion: Saltwater intrusion has invaded up to 70 km inland, and the southernmost province -Ca AMU- salt level has reached 8-10 g/liter. Hundred thousands of hectares of productive cropland are being threatened; once the soil is over-salinated, rice would grow but would only produce empty panicles [3]. Farmers would lose all harvest, profits and included investments.

1.4 Water pollution: The lowering of the water table in dry season causes the oxidation of the pyrite (FeS₂) to produce acid which pollutes the canal systems by coming rains. The acid could dissolve toxic minerals such as arsenic, selenium and labil aluminium inherent in the soil which would contaminate the Delta ground water [9]. Even at sub-ppm level, if present, the arsenic could enter the food chain and accumulate in organs over many years before it attacks [10]. The United Nations International Children Fund (UNICEF) has provided 180,000 wells which draw ground water to serve 23 millions people in Vietnam. MekongForum has advised UNICEF to monitor for arsenic at these wells take appropriate action to protect the population [11].



Bank Erosion [Photo by MekongForum]

1.5 Sea level rising and coastal erosion: The Mekong Delta is mostly a low-lying land ranging from 1 m below to 5 m above sea level. The Mekong Delta is, therefore, vulnerable to sea level rising. A report in Vietnam stated that the high tide at Vung Tau was recently measured at 10 cm higher than last year. The situation needs to be monitored more closely. Only the continued replenishment of the coastal area by river sediments would match the erosion and sea level rising of this magnitude.

The protection of sediment transport becomes crucial to the protection of the Delta's very existence.

2. General Impacts of Hydropower Dams

The introduction and the rapid increase in the use of electricity by 60 million consumers and the demand of the expanding economy drive the Mekong countries into an energy hunt. Hydropower is the most obvious, readily available therefore an irresistible source of electric energy for them. While their energy need is unquestionable, the absence of a smoke stack and heat release from a hydropower plant may lead the people to believe that hydropower is a clean and inexpensive source of energy. Not true! The followings are experiences known from existing hydropower plants:

2.1 Impacts on reservoir area: The inundation of spawning areas would economically impact important species which are sensitive to water depth. The inundation of wet land adjacent to the river would impact the nursery habitat. The blockage of migratory species may cause their extinction and the disruption of fishery dynamics. Pollutants from hydropower reservoirs could harm the reservoir fish and, therefore, the food chains.

2.2 Air pollution: Hydropower dam reservoirs are not harmless but they are permanent man-made floods on vast areas of forest. The decay of vegetation in inundated areas is the source of invisible carbon gas envision (methane and carbon dioxide) for several decades, contributing to global warming, climate change, and sea level rising. The carbon emission could be as high as 26 times that of a coal fired power plant with the same output.

2.3 Impact on downstream fisheries: The alteration of the river's hydrologic cycle would have an impact on the entire downstream river habitat. The rise and fall of water levels create the seasonally-flooded forest, forming the feeding and spawning grounds for fish. After the Hoover Dam and Glen Canyon Dam, the Colorado, since 1960, no longer flowed to the sea. The once vibrant fishing economy of the Colorado was destroyed. The dam's damage to downstream fisheries is irreversible and devastating to inhabitants who depend heavily on fish for protein and their means of their living.

2.4 Sediment loss: Mainstream dams are designed to block the river flow, hold back water and, therefore, all the sediment at their large reservoirs. Although water is discharged and sluice gates are provided, they do little to solve the reservoir sedimentation problem. The loss of sediment in the delta will be very costly to the unprepared and poor farmers. The chemical fertilizer substitution is another danger to the uninformed users and to the unprotected environment.

2.5 The forced relocation of thousands of ethnic minority people to new resettlement centers would deprive them of their traditional living environment, rob them of their means of living and even pollute their culture.

3. Impacts of China Dams

Table 3.1 Chinese Dams on Mekong			Active Storage	Electrical Power
Country	Year	Dam	MCM	Capacity
	Complete	Name	per MRC	MW
China	1993	Manwan	9200	1500
China	Began 1996	Dashaoshan	370	1350
China	<2010	Jinghong	1000	1500
China	<2010	Xiaowan	14500	4200
China	<2020	Nuoshadu	22700	5500
China	<2020	Mengsong	~60	600
China	<2020	Gongguoqiao	120	750
Total:			47950	15400
Regulation:			53%*	

*Note: Based on total annual discharge from China of 90,000 MCM

3.1 Hydrology: The total active volume for all Chinese dams would be 48 BCM. China would regulate or hold back about 53% of its annual river discharge (90 BCM).

3.2 Sediment transport: The Chinese dams would hold back all the river sediments at their reservoirs in Yunnan. Total sediment lost would be about 125 million tons/year representing 50% of the Mekong's total sediment loading.

3.3 Industrial pollution: The Yunnan mountain terrain is known to contain very large deposits of coal and heavy metals and the home of the Yunnan Metallurgical General Company. Their demand for power would be uncompromising and the industrial waste would end up no where else but in the Mekong River.

3.4 Fisheries: The Manwan dam has caused "the lowest water level and lowest fish catches in Laos and northern Thailand in living memory". The people of Thailand reported that their catch of the region's giant cat fish -Pla Buek, has reduced from 69 fish in 1990 to only 1 fish in 1998. They believed that the Manwan dam had stopped the fish from migrating to China to lay their eggs. Mr. Pakprom of Songkhram River Conservation Group, summed up their view in three words: "**No dam please!**" [14]

3.5 Security and environmental threats: The Chinese dams would empower China with an awesome capacity: China would be able to cause artificial flood or drought to the lower region at any time or in any season. China can decide the fate and livelihood of 60 million people living in four countries: Laos, Thailand, Cambodia and Vietnam. **For example: If the Chinese stops generating power for just a few days during the dry season, they could cause severe drought to the Delta. The industrial waste discharge from Yunnan alone, if flowing unchecked, could pollute the Mekong river, the Tonle Sap Lake and the Mekong Delta basin wide.**

4. Impacts of Tributaries Dams

Table 4.1 shows 24 both existing and future dams on Mekong tributaries: the Kok, Mun, Lam Di Moi, Chi, Pong and Huay Mong rivers. Their probable impacts to the environments would be:

4.1 Hydrology: The Laos tributary hydropower reservoirs, together, would hold back 78.6 BCM or 67% of her 117 BCM total contribution to the Mekong.

4.2 Sediment transport: The Laos tributary dams would block 60 million tons/year of sediments from reaching the South China Sea. The combined sediment loss between China and Laos would reach 180 million tons or 75% of all the Mekong River's annual loading.

4.3 Fisheries: The complexity of the Mekong's fish migration is still a fascinating research subject for modern science; a complete change in fish species was observed between the dry and the wet season. There is still no knowledge about where they came from and where they have gone. The existing dams in China, Laos, and Thailand have already damaged the fisheries in the Mekong Basin. Pak Mun Dam has caused more than 50% fish decline, the Theun Hinboun has caused the disappearance of many fish species, and 30-90% decline depending the species within two months following its completion [14]. In 1994, the Tonle Sap Lake's annual catch was halved due to the lost of seasonally inundated forest.

Country	Year	Dam	Investment	Active Capacity	Capacity
Laos	Year Completion	Name	US\$	million m3	MW
		1972 Nam Ngum 1			150
		1998 Houay Ho		523	150
		1998 Nam Theun Hinboun	2.6	20	210
		1999 Nam Leuk	130	88	60
		Nam Theun 2	1200	2607	600
		Nam Hai		100	800
		Huay Lamphanh		103	144
		Hongsa Lignite			600
		Nam Tha 1		230	2000
		Nam Ngum 2		2500	320
		Nam Theun 1		400	20
		Nam Ngiep 1		2900	440
		Nam Khan 2		480	145
		Nam Ngum 3		1700	400
		Senamnoy M		225	192
		Senamnoy D		20	63
		Se Done		1734	54
		Nam Ou 2		66100	950
		Nam Ngiep 2			495
		Se Kong 4		1287	346
		Sekaman 1		833	255
Thailand		Pak Mun			136
*Cambodia		Lower Sesan 2			
		Lower Seprak 2			
Vietnam	2000	Yali			700
	2005	Plei Krong			120
		Total		78612	8180

5. Impact of Mekong River Commission's Run-of-River Dams

MRC had a plan to build 9 major run-of-river dams on Mekong mainstream, and to date they have not publicly declared that they no longer wish to implement them. The possibility for MRC to go ahead with these dams is extremely remote.

Theoretically, a run-of-river dam is a dam design that does not require conventional storage reservoirs to operate. In reality, however, the lower Mekong run-of-river dams still require cross channels with an average height of more than 35 m to support the turbines.

Country	Year	Dam	1995 US\$ Investment	Capacity
	Completed	Name	in Million	MW
Laos	Planning	Pak Beng	1180	1230
Laos	Planning	Luang Prabang	1970	1410
Laos	Planning	Sayaburi	1710	1260
Laos	Planning	Pak Lay	1720	1320
Laos	Planning	Chiang Khan	1150	570
Laos	Planning	Pa Mong A	2540	2030
Thailand	Planning	Ban Koum	2860	2330
Cambodia	Planning	Don Sahong	530	240
Cambodia	Planning	Sambor	3940	3300
Total			17600	13690

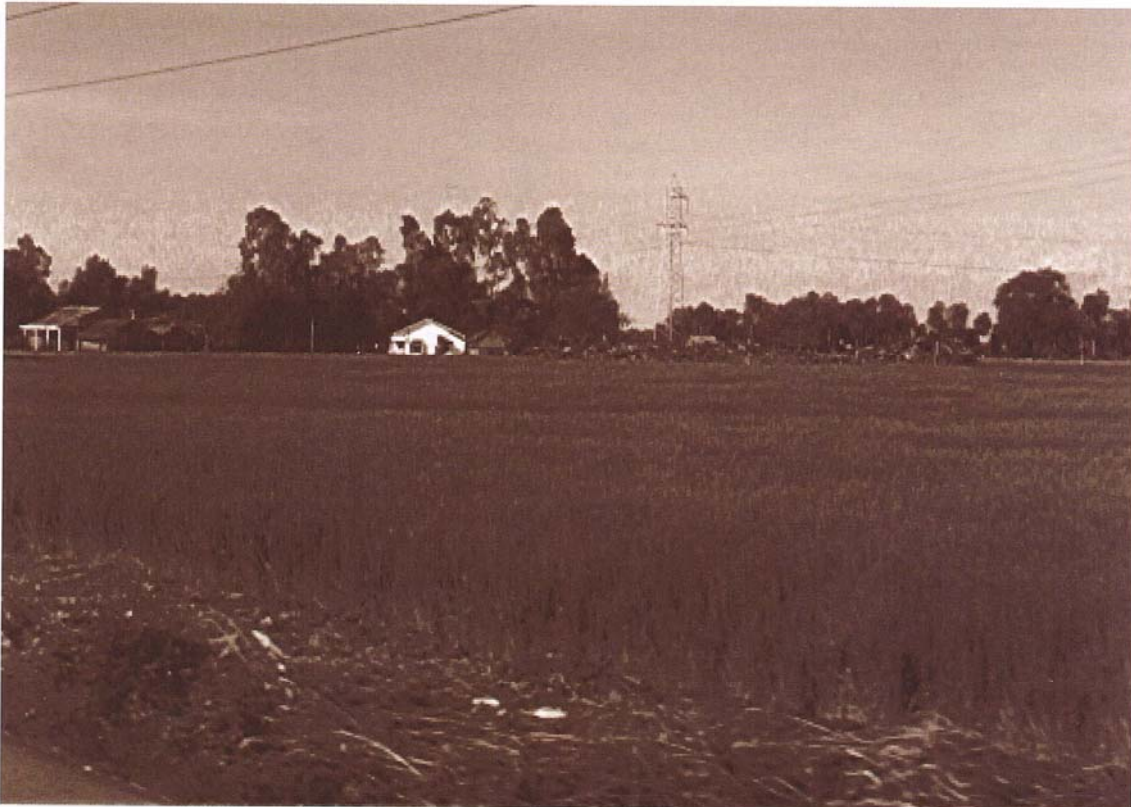
Station	Drainage Area	Discharge	Annual	Storage	Regulation
	km ²	m ³ /sec	BCM	BCM	% Mainstem
Chiang Saen	189000	2730	86	45	52%
L. Prabang	268000	3850	121	50	41%
Vientiane	299000	4580	144	102	71%
Thakhek	373000	7490	236	115	49%
Pakse	545000	10180	321	126	39%
Kratie	646000	13970	450	130	29%

The cumulative impact of these dams and those in China and Laos would be drastic; the degree of regulation varies from 29% at Kratie to 71% at Vientiane. A 35 m increase in water level at the 9 dam sites along the 2,400 km stretch of lower Mekong would lead to opportunities for the water diversion in Thailand which would be impossible for MRC to monitor, much less control.

6. Impact of Thailand's Water Diversion Plans

The so-called Landmark Agreement in 1995 among the four Mekong countries has removed the main obstacle -veto power of other countries- and paved the way for any member country to divert water for their use. This encourages Thailand to entertain some of the most ambitious water diversion projects of Asia. The Khong-Chi-Mun project alone, started in 1990, has an astronomical budget of US\$ 61.6 Billion approaching the cost of the Three Gorges Dam on the Yangtze River of China.

Project	Volume	Time Frame	Cost
	MCM		US\$Million
Kok-Ing-Yom-Nan	2200		
Huai Kha Khaeng			
Kohng-Chi-Mun	6580	1990-2017	61,600
Nam Song / Nam Leuk			
Nam Theun II			
Songkhram	n.a.		400
Total	8780		62,000



Rice Field of Mekong Delta [Photo by MekongForum]

7. Conclusion

The right of Mekong nations to develop the natural resources to benefit their people should be respected; however, that does not mean the reckless destruction of the environment and the disregard of the vital interests of neighboring countries should be tolerated. When it comes to an international river like the mighty Mekong, the benefits and impacts must be fully disclosed and assessed on a basin wide context.

In Cambodia and Vietnam, the fishermen need the seasonally flooded forests for the fish to return. The farmers need to flood their fields for rice growing and to cover the soil to keep the acids from coming. They need the flood to fight the intrusion of saltwater, and they need the sediments to protect their shore from erosion.

Oceanographer Dr. Michael Rozengurt testified to the Ottawa Congress in 1994 that the river's critical threshold regulation level should be about 25% [13]. The regulation of 53% of the river flow in China and 67% in Laos would completely and permanently alter the Mekong's natural hydrologic cycle.

When all the development in China, Laos, and Thailand are completed as planned, 75% of the Mekong's sediment loading would be blocked; 126 BCM runoff would be held back in China and Laos, and 8.8 BCM would be diverted in Thailand. While the benefits remain questionable, What is certain is the loss of thousands square kilometers of seasonally flooded forests at the Tonle Sap Lake, and the loss of millions tons of fertile sediments for the Mekong Delta. The means of living and the food security of the Delta inhabitants are at stake. The vibrant Tonle Sap Lake fisheries would be diminished; the fertile Mekong Delta would turn into an acid plain, the ground water into brine, and the coast would be eaten away by the South China Sea.

The Mekong Basin people have endured unimaginable sufferings throughout this Century. The bad news for us is the fish basket of Cambodia and the rice bowl of Vietnam could be no more. That is only the case if nothing is done, the people of Mekong Basin have a historic opportunity at the verge of the 21st Century: To save the world's second richest biota -the Mekong- from the peril of becoming another victim of dams and diversions. Together we must

safeguard the food security and the means of living of 100 million poorest people from almost certain destruction. "The 1999 Mekong River Declaration" will be our message of hope to the people of Mekong and the future generations of the world.

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POWER STRUGGLE: The Impacts of Hydro-Development in Laos

A report by International Rivers Network 1999

Aviva Imhof

INTRODUCTION

Since the late 1980s, the Lao People's Democratic Republic (Lao PDR) has been instructed by advisors from the World Bank, Asian Development Bank, United Nations Development Program and bilateral western donors that it has no option but to develop its hydropower resources and sell the power to Thailand. These advisors, coupled with hydropower industry consultants, have promised huge influxes of foreign exchange that will help fuel economic development in the country.

Many people are concerned that the dependence of Lao people on their rivers for all aspects of their lives – including for fish, fresh water, irrigation and fertilization of crops, transportation, and recreation – renders them highly vulnerable to the very substantial changes in the river systems brought about by large dams, and that these costs may outweigh any economic benefits.

In February 1998, during a dialogue with Lao government officials, International Rivers Network was encouraged to visit the Lao countryside and some dam sites. As a result, IRN visited six project sites at various stages of implementation and talked to many observers within the country. The sites visited included Nam Theun-Hinboun, Nam Leuk, Nam Theun 2, Houay Ho, Xe Pian-Xe Namnoi, and Xe Kaman

1. These field studies form the basis of this report, which aims to provide an overview of hydropower development in Lao PDR, informing the debate at the local, national and international levels. The study revealed some similar and very fundamental problems with all of the projects, including:

- poor financial viability
- inadequate resettlement practices
- inadequate compensation
- uncontrolled logging
- problematic environmental impact assessments
- lack of appropriate regulation

These problems are illustrated below and discussed in greater detail in the case studies.

Poor financial viability

While the Lao government has invested millions of dollars in encouraging private sector investment in hydropower development, there are already signs that this strategy is not working. Out of the five projects that have been built in Lao PDR to date, four involved concessionary financing from a public source, and one was financed entirely from a company's own resources. No other private consortium has managed to raise commercial financing, nor successfully negotiate a power purchase agreement with Thailand, nor are they likely to until at least 2006 when Thailand may negotiate additional power purchases from Lao PDR.

Those projects that have proceeded are already running into financial difficulties. As a result of the economic crisis, revenues for Houay Ho and Theun-Hinboun hydropower projects - the first two public/private projects to be built in Laos - have been affected due to the low tariff and the drop in the baht exchange rate. In 1998, in its first year of operation, Theun-Hinboun lost around \$10 million in revenue due to the devaluation of the baht. The 150 MW Houay Ho Hydropower Project was funded entirely from Korean conglomerate Daewoo's balance sheet, and was completed at the end of 1998. The financial viability of Houay Ho is so poor that Daewoo has been looking to sell its stake for the past year but has had trouble finding a buyer. The 60 MW Nam Leuk hydropower project, owned entirely by the Lao government and due to be completed in 1999, is expected to incur a \$15-20 million cost overrun which will affect the economic viability of the project. The government may be forced to sell a part of the project to a private power company.

Inadequate resettlement practices

Hydropower is increasingly being used as a pretext to resettle ethnic minorities from upland areas to lowland areas in keeping with the government's policy of resettling shifting cultivators by the year 2000. Anticipatory resettlement is occurring in some watersheds and inundation zones long before it is certain that a dam will actually be built. At Houay Ho, Xe Pian-Xe Namnoi, and Xe Kaman 1, resettlement is taking place under very poor

conditions, causing hardship and suffering for the ethnic minority groups who have been forced to move. A lack of arable land and fresh water supplies, coupled with an unfamiliarity with wet rice cultivation and separation from ancestral lands, has resulted in food shortages and increased rates of morbidity and mortality for those resettled.

Inadequate compensation

Hydropower projects in Lao PDR are proceeding without adequate efforts to document the livelihoods of people living downstream and upstream from the dam site prior to construction, nor to provide for sufficient compensation for livelihoods losses occurring as a result of the dam. These impacts have been best documented in the Nam Theun-Hinboun case study, where villagers in three different areas reported substantial declines in fish catches, flooding of vegetable gardens, transportation difficulties and fresh water shortages. As with resettlement costs, private developers must be held responsible for paying their fair share of the compensation costs of a project. It is also important to recognize that compensation will never substitute for an unobstructed riverine ecosystem.

Uncontrolled logging and access to protected areas

Hydropower projects are being used as a pretext for logging of reservoir areas, long before a decision to build a dam has actually been made. The construction of roads and bridges has opened up more land for logging and hunting and has led to increased environmental degradation. As many hydropower projects are situated in protected areas, the impacts on biological diversity are especially serious. In the case of Nam Theun 2, the military-run logging company, the BPKP, has logged more than one million cubic meters of timber on the Nakai Plateau to clear the reservoir area even though the dam may never be built.

Dam proponents now justify building the project on the basis that the Nakai Plateau is so degraded from logging that it is not worth saving. At Xe Kaman 1, all indications are that the dam may never be built, and that the project is in fact an elaborate logging scheme in disguise. In this case, the Lao government is foregoing lucrative logging revenues in anticipation of future

proceeds from electricity sales that may never eventuate. Meanwhile, some of mainland southeast Asia's last remaining tropical rainforest, together with an array of rare and endangered species, may be sacrificed.

Problematic environmental impact assessments

Rather than being used to ensure that all of the social and environmental costs of a project are known and accounted for, the environmental impact assessment (EIA) process is being manipulated to protect hydro and logging interests. EIA's in Lao PDR are carried out by hydropower consultancy companies with vested interests in ensuring that the project proceeds, mainly because they stand to gain further lucrative contracts once the project goes ahead. EIAs for Theun-Hinboun, Nam Leuk, and Xe Pian-Xe Namnoi were heavily criticized for omitting crucial information and ignoring or downplaying concerns about the potential negative impacts of the projects. Other problems with how EIAs are carried out in Lao PDR include preparation late in the process of project approval, insufficient capacity within the government to critically review highly complex documents in English, lack of public consultation, and the lack of monitoring and enforcement of recommendations.

Lack of appropriate regulation

The financial interest that the Lao electricity utility, Electricité du Laos, has in maximizing profits from projects in which they are joint venture partners creates a conflict of interest with their role as regulator. This places a constraint on EdL's ability to negotiate a risk allocation which is in the best interests of the Government and Lao PDR. In Northern – and increasingly in developing – countries, an independent regulatory body establishes and enforces licensing and environmental assessment procedures. These licensing procedures allow for early and effective public notification, access to information, consideration of the “no-go” option, the right to review decisions, and the right to legal remedies if damages occur.

It is clear that more work needs to go into developing a regulatory regime for Lao PDR that is fair, efficient and ensures the greatest possible benefits for the Lao people. Continued unregulated development will only cause further problems along the way.

ECONOMICALLY SHAKY GROUND – THE VIABILITY OF HYDROPOWER IN LAO PDR

A History Of Dam Plans For Lao PDR

Hydropower is not new to Lao PDR. Plans to dam Lao PDR's rivers go back as far as the mid-1950s when foreign engineers inspired by the Tennessee Valley Authority's (TVA) development of the Tennessee River Basin in the United States envisaged a grand plan to build a cascade of seven dams on the mainstream of the Mekong River and identified numerous smaller projects on its tributaries. While these plans never came to fruition, largely due to years of war and political instability in the region, they had a profound influence on the development path prescribed for Communist Lao PDR as it moved out of isolation in the mid-1980s. The New Economic Mechanism, launched by former premier Kaysone Phomvihane in 1986, signaled a new era for Lao PDR and marked the country's move towards a market economy. The fall of Communism in the Soviet Union and its satellite regimes, and the gradual withdrawal of Vietnamese assistance, created a critical gap in the Lao administration that was quickly filled by advisors from bilateral western donors and the multilateral development banks.

Faced with very little experience of capitalism, a shortage of educated personnel, and a dwindling level of financial assistance from its allies in the Eastern Bloc, the Lao government has had little choice but to comply with the dictates of its foreign advisors, primarily the IMF, World Bank, Asian Development Bank and United Nations Development Program, as well as the dam-building consultants and engineers that flocked to the country in the late 1980s and early 1990s.

According to these advisors Lao PDR, with its large hydropower potential, low level of development, proximity to Thailand, and high level of foreign debt, had no option but to develop its hydropower resources and sell the power to Thailand.

Poor Advice To A Poor Country

The advice was simple. In the early 1990s, Thailand, undergoing a massive boom in its economy, was growing rapidly and needed additional sources of power. Power demand was expected to grow by as much as 12 percent per year during the period to 2010, and the

Electricity Generating Authority of Thailand (EGAT), facing increasing opposition to hydropower projects at home and limited supplies of domestic fossil fuels, could not satisfy this demand internally. Lao PDR, with its abundance of hydropower potential and modest domestic demand for power, was in a good position to become the "battery" of Southeast Asia: supplying first Thailand, and then its other neighbors, with much-needed power.

The quandary was how to raise the massive capital required for large dams, which involve high initial construction costs and long capital payback periods. The ADB and World Bank encouraged the Lao government to allow private sector participation in the hydropower sector through a new mechanism called BOT: Build, Operate, Transfer. The private sector would build the project with their own financing; operate, maintain and manage the facility for a period of up to 30 years; and then transfer ownership to the government. Thus the private sector would invest the capital and absorb the risks, with virtually no drain on the public purse. The advisors recommended that smaller projects such as the 60 MW Nam Leuk dam be built by the public sector with aid financing, and the larger export-oriented projects be left to the private sector, with the government taking an equity in the project.

Enormous aid resources were poured into exploring the options for hydropower development in Lao PDR. Numerous reports were produced by western hydropower consultancy companies eager to shore up a future for themselves in one of the most promising hydropower markets in the world. These reports formed the backbone of the Government of Lao's (GoL) development strategy.

The Hydro Rush

In June 1993, the government signed a memorandum of understanding (MoU) with Thailand to export 1,500 MW of power by the year 2000. In June 1996, the GoL signed a further MoU with the Thai government to supply an additional 1,500 MW by 2006. An agreement with Viet Nam for the transfer of 1,500-2,000 MW of power by 2010 was also signed in September 1995. The 1993 deal resulted in a flurry of agreements between foreign investors and the GoL to build hydropower projects in Lao PDR. By 1995, 23 MoUs had been signed with Korean, Thai, Australian, European and North American companies to build dams with a total capacity of 6,676 MW. The Lao government would have an equity share in all of the projects, and would benefit

from royalties, taxes and proceeds from power sales. The government estimated that by the year 2000, receipts from hydropower would be worth approximately \$120 million, making it the country's largest source of foreign exchange earnings. By 2010, the government's earnings would reach \$350 million annually. But in the great rush to sign deals, secure finance and build dams, nobody stopped to warn the government of the enormous economic, social and environmental risks in such a strategy.



Housing by the Mekong [Photo by MekongForum]

Thailand: A Reliable Customer?

While Lao PDR has MoUs with both Thailand and Viet Nam for export of power, until now Electricity of Viet Nam (EVN) has expressed little interest in buying Lao power, and the Vietnamese Government itself often talks of exporting power to Thailand. This leaves Thailand as the sole market for Lao power, putting Lao PDR in a highly vulnerable position. In 1994, EGAT launched its private power program and invited private generating companies to submit bids to own and operate new plants and sell their output to EGAT. The response was overwhelming: altogether EGAT received over 30 bids to supply 32,000 MW, which exceeds EGAT's projected expansion needs for at least the next 15 years. Many of these bids were for highly efficient combined cycle gas turbine plants, which could produce electricity for a lower cost than hydropower.

The economic crisis, now expected to be more severe and protracted than originally anticipated, is having a significant impact on Thailand's demands for power. EGAT's latest revised power development plan for 1998-2001 shows that given existing commitments for power purchases, EGAT's reserve margin will reach a high of 61.2 percent in 2004, and in 2006 it will

still be 46 percent. EGAT's power reserve requirement is only 25 percent. As a result, EGAT is working to reduce power supply by 2,000 MW in 1999 and another 4,000 MW in 2000 through renegotiating start-up dates for new independent power producer (IPP) projects and through reducing capacity in existing power plants. This has affected Thailand's need for Lao power. In November 1998 it was reported in *The Nation* newspaper that EGAT has decided to delay power purchases from Laos. EGAT stated that it will now buy 1,600 MW from Laos in 2006, and another 1,700 MW in 2008. However, this could be subject to further delays, depending on Thailand's economic situation. Lao PDR also faces competition from other neighbors, most particularly Yunnan Province of China and Burma.

A Private Investor's Paradise?

It is evident from examining the current status of hydro in Lao PDR, that the optimistic predictions for the "Kuwait of Southeast Asia" have thus far failed to materialize. By 2000, Lao PDR will be selling only around 467 MW of power to Thailand, a far cry from the 1,500 MW of new power sales predicted in 1993. Only 313 MW of these 467 MW will be from capacity added in the 1990s. This power comes from five projects: Nam Ngum 1, Xeset, Nam Theun-Hinboun, Nam Leuk, and Houay Ho. Six other memoranda of understanding – five hydropower projects and one lignite plant – are apparently still valid, although these are all stalled awaiting power purchase agreements and commercial financing: Nam Theun 2, Nam Ngum 2 and 3, Xe Pian-Se Namnoy, Xe Kaman 1, and Hongsa Lignite Plant. With such a high reliance on a notoriously risky sector such as hydropower, the economy could be in for further shocks in the coming years, particularly as it is increasingly unlikely that any consortium will be able to attract the necessary financing in a country considered to be of high political and economic risk. The prices being offered by EGAT to the Lao government are simply too low to make the projects economically attractive to the private sector. As a result, hydro proponents are counting on continued subsidies to the industry from the multilateral development banks and bilateral aid agencies. As will be shown in the following six case studies, those dams that have been proceeding are causing substantial social and environmental impacts, while their claimed economic benefits to Lao PDR may not even be realized. The question to consider is whether the benefits outweigh the economic, social and environmental risks.

CONCLUSION

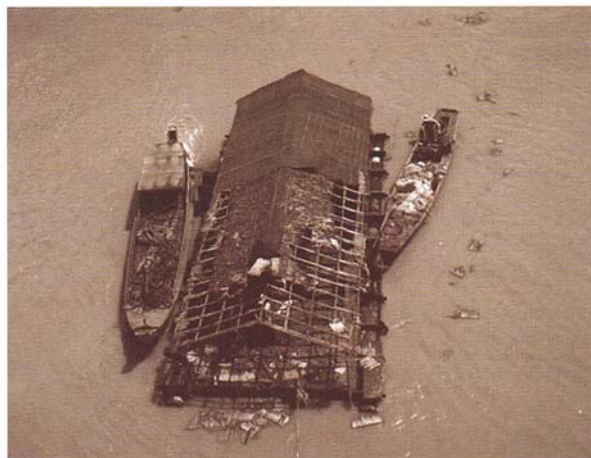
The economic uncertainty of hydropower in Lao PDR, coupled with the significant impacts that such schemes are having on the economy, environment and people of Lao PDR, point to the need for a fundamental rethinking of Lao PDR's economic development strategy.

There is clearly a need for a reassessment of the best use of the scarce financial and human resources in the country, including the benefits from possible investments in areas such as tourism, agriculture and non-timber forest products as alternatives to hydropower. The fact that such an assessment has never been done points to the one-sided advice of the World Bank, ADB and other development agencies.

Far-reaching reforms are needed in order to ensure that future hydropower development in the Lao PDR is in the best interests of the country as a whole. Initiating such a process of reform will require substantial political will on the part of Lao decision-makers and the inclusion of people within the country that until now have been unable to participate in the hydropower debate. In the meantime, it is irresponsible of the Asian Development Bank, the World Bank, and other donors to be pushing ahead with the funding of individual hydropower projects as "aid" in the Lao PDR.

Firms proceeding with private financing also need to be challenged. Projects completely privately funded have invariably involved either bad deals for the Lao government or hidden agendas on the part of the private developers.

Rather than being an obstacle, the slowdown in the development of hydropower in Lao PDR, brought about by the Asian economic crisis, should be seen as an opportunity for the Lao government and the donor community to reconsider the problems with the current path of hydropower development and to initiate changes. Addressing the above problems through a process of fundamental reform will be needed to ensure a more sustainable and just path to future development for the people of Lao PDR.



Broken Barge Photo by Hai D. Pham]

ABOUT INTERNATIONAL RIVERS NETWORK

International Rivers Network is a nongovernmental organization dedicated to protecting and restoring the world's rivers and watersheds for the benefit of the people and ecosystems who depend on them. IRN was established in 1986 when it was recognized that US and European dam builders, faced with declining or vanishing markets in their own countries, were looking abroad for new business opportunities. The industry has maintained its momentum in Asia, Africa and Latin America, despite the growing body of evidence that dams frequently fail to deliver their predicted economic benefits, and too often bring social hardship and environmental degradation.

Bilateral aid agencies and multilateral development banks promote and subsidize dams in low income countries through financing feasibility studies, environmental impact assessments, and dam construction. Frequently, the main beneficiaries of this aid are the western corporations that procure consultancies and construction contracts. Many dam projects in low income countries proceed with few environmental and social safeguards, under standards that would not be tolerated in the company's host country. IRN believes that as western taxpayer's money is being used to subsidize hydropower development in low income countries, we have a right and a responsibility to question the strategies being promoted by these development agencies, and demand accountability for their activities.

Vietnam and the Development of the Mekong

Nguyen Huu Chung, M.S.

MekongForum

Summary of Mekong Developments and Their Potential Impacts

First, I wish to sum up some facts and potential impacts of the Mekong River development projects on the Mekong Delta presented at this 1999 Mekong River Conference:

1- China would construct 7 hydropower dams (one was already completed and one in progress). Their reservoirs would hold back more than 45 BCM (billion cubic meters) of runoff in the rainy season every year. That is more than 50% of the total 90 BCM volume the China normally discharges to the Mekong through Laos.

2- Lao would construct at least 23 dams (4 of which have been completed). Their reservoirs would hold back about 85 BCM of runoff in rainy season. That is about 73% of the total 115 BCM annual volume Laos contributes to the Mekong.

3- Thailand has far less hydropower potential, although 4 small dams were already completed. Thailand however, has two massive water diversion plans, which would divert about 10 BCM water or 20% of the total 54 BCM that Thailand contributes to the Mekong.

4- Besides the above projects, there are 9 run-of-river mainstream dam projects on the Mekong in Laos, Thailand and Cambodia. Although these dams, due the design, do not involve large volume reservoirs, they still obstruct the free movement of fish and disrupt their reproductive migration. The water level still will be increased by some 30 m, sufficient for Thailand to divert the mainstream water for use within their territory.

A portion of the hydropower generated from Yunnan is exported to Thailand, and the majority of the electric energy generated from other Mekong countries is also intended for Thailand. Note that Thailand is the most developed country and has the highest demand for power in the lower Mekong.

Secondly, I wish to discuss the political aspect of the Mekong damming and the relations between

Vietnam and other Mekong countries with respect to the development of the Mekong River. As a downstream Mekong country, Vietnam has no benefit from the above river development, and yet Vietnam bears most of the damages potentially caused by them. The question is what can Vietnam do to protect the interest of the Vietnamese people?

The Mekong River Committee

The Mekong River Committee was established in 1957 and includes representatives of four countries Thailand, Laos, Cambodia and South Vietnam with its headquarter based in Bangkok. The United Nations Development Program (UNDP) sponsored the Mekong River Committee. Although there were numerous hydropower development proposals on the Mekong, no project was ever approved by this Committee for implementation. South Vietnam, recognizing the severe impacts on the Mekong Delta, had opposed these projects. It should be noted that at the time, the Mekong River Committee operated on the basis that a consensus among all four countries was needed for a project to proceed. In another word, a single member country could veto any Mekong project.

The Committee stopped all activities in 1975 when South Vietnam ceased to exist. In 1978, an Interim Committee was formed and operated on a temporary basis due to the absence of Cambodia (when Cambodia was under Khmer Rouge's control). At that time, the Socialist Republic of Vietnam assumed the position previously held by South Vietnam. After which was a long period the Committee had no activity and made no announcement until 1992, Cambodia rejoined the Committee and the Mekong Committee was transformed into the Mekong River Commission.

In 1995, the four member countries signed an Agreement. The 1995 Agreement was a product of 17 years of low key effort of the Interim Committee. This is a historic event for the Vietnamese. A distinct characteristic of this Agreement is that river development projects no longer require the consensus of all four members, in the other words, Vietnam lost the right to veto

over any project even if it causes damage to Vietnam. This Agreement paves the way for Thailand to build dams across the mainstream and diverts water away from the River for their own use as they please. After this Agreement, a member country is free to do what they want with the tributaries on their territory, only to notify others. It needs not to consult or negotiate an agreement for these projects.

An important fact that must be made clear is the 1995 Agreement was signed just before the United Nations announced the "United Nations Law of the Non-Navigational Uses of International Watercourses" in May 1997. If we analyze and compare the 1995 Mekong Agreement and the 1997 UN Law, we can see the 1995 Mekong Agreement is too loose, ambiguous, and full of disadvantages for Cambodia and Vietnam, while the UN 1997 Law is tight and the responsibility of upstream countries are well articulated.

Article 5A of the 1995 Mekong Agreement requires member countries only to notify the Mekong Joint Committee on their tributary projects. The Agreement did not define the role, the responsibilities of the Joint Committee or what the Joint Committee must do upon such notification. The term "notification" was used in the 1995 Agreement is in stark contrast with the terms "consultation" and "agreement" clearly preferred in 1997 UN Law. The 1995 Agreement does not provide a procedure to address the impacts of the development on the environment, and makes no provision to address the associated loss caused by the development to other Mekong countries.

Article 5A of the Agreement differentiates tributaries from the mainstream and provides almost complete freedom for member countries to develop their projects on the tributaries. In contrast, the 1997 UN Law accepts no such differential treatment and goes further to treat all surface and ground waters as watercourses. The UN defines watercourse as "a system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus (Article 2A of the Convention).

Article 5B of the Agreement deals with the use of water of the mainstream. As written, this Article fails to protect the interest of Vietnam in every aspect. For example, it permits the construction of hydropower dams without an expressed pre-

requisite for an environmental impact and basin wide loss assessment. The rules for water utilization and diversion are left to be discussed later. Complete text of the 1995 Mekong Agreement and the 1997 UN Law can be browsed at MekongForum web site:

<http://www.mekongforum.org>

In summary, the 1995 Mekong Agreement, especially Article 5, is designed to give Thailand and Laos the green light to build dams to generate power and to divert water for irrigation without an agreement with the two lower Mekong countries which are Cambodia and Vietnam as should be required by say the UN Law.

From the technical point of view, a project must have a comprehensive study and an agreement must be signed among related countries before it can proceed. No party can accept consultation after the project is already completed.

I could not figure out why the Mekong Agreement was not formulated according to the UN Law. Note that the "United Nations Law of the Non-Navigational Uses of International Watercourses" was drafted by the UN International Law Commission since 1973.

The final draft was presented to the UN General Assembly in 1994. By Resolution 49/52 of 9 December 1994, The UN had accepted the final draft. The UN General Assembly, in resolution 51/229 of 21 May 1997, adopted this Law.



Mekong Children [Photo by MekongForum]

I wonder why the Vietnam government did not study the UN Law, and why they signed the 1995 Mekong Agreement with terms completely unacceptable to the Vietnamese people. I wish to

point out the fact that in 1995, when the Mekong Agreement was signed, the UN Law is already well in the process of adoption, that means all countries, Vietnam included must know about this Law and its imminence. It is unforgivable that the Mekong Commission, an organization formed, financed and operated by UNDP had ignored the UN Law and promoted a substandard agreement such as the Mekong Agreement against the UN's own principles. The difference between the 1995 Agreement and the UN Law is the proof that the Mekong River Commission and the four Mekong Countries governments, and the UN are living in two different worlds. I can offer no explanation for this situation and have no intent to blame anyone, however as a responsible Vietnamese for Vietnam, I feel obligated to bring this issue at this Conference, although having been away 24 years and 8 days, I remain a Vietnamese.

China's dams in light of the 1997 UN Law

China has the plan to build 7 cascade dams on Lancang Jiang (upper Mekong) in Yunnan province. Manwan dam was completed in 1993 supplying power to Yunnan. The second dam, Dashaochan was started in 1996. China did not notify other countries about these dams and the design details of these dams remain ambiguous. For example: He Daming, Director of the Yunnan Province Geography Department disclosed at Monash University, Australia in 1996 that the active volume of Manwan reservoir was 258 million cubic meters. The Asian Development Bank and The Mekong River Commission documents show this to be 9,200 million cubic meters, 36 times bigger. I must contend that He Daming's figure is far from the truth, because at a capacity of 1,500 MW and 100 m hydraulic head, Manwan hydropower plant would turbine all 258 MCM in just a few days. China did not even carry out an environmental impact analysis for these projects as disclosed by He Daming at the Monash.

I have sent an enquiry on the list of signatory nations of the 1997 UN Law. To date, I do not know if China has signed it. The 1997 UN Law is still open and available for signature until 21 of May 2000. China is a member of the UN International Law Commission and the UN 1997 Law has a Chinese version. Regardless of China's position and decision, the UN Law will remain the model for modern International cooperation. Article 12 of the UN Law states that: "Before a watercourse State implements or permits the

implementation of planned measures which may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification thereof. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment, in order to enable the notified States to evaluate the possible effects of the planned measures.

Article 13 of the UN Law states that: A watercourse State providing a notification under article 12 shall allow the notified States a period of six months, within which to study and evaluate the possible effects of the planned measures, and to communicate the findings to it; and this period shall, at the request of a notified State for which the evaluation of the planned measures poses special difficulty, be extended for a period of six months.

On the obligations of the notifying State during the period for reply, Article 14 states that: "During the period referred to in Article 13, the notifying State shall cooperate with the notified States by providing them, on request, with any additional data and information that is available and necessary for an accurate evaluation; and shall not implement or permit the implementation of the planned measures without the consent of the notified States."

Article 15 states that: "The notified States shall communicate their findings to the notifying State as early as possible within the period applicable pursuant to article 13. If a notified State finds that implementation of the planned measures would be inconsistent with the provisions of articles 5 or 7; it shall attach to its finding a documented explanation setting forth the reasons for the finding.

Article 17 requires that all watercourse States engage in consultations and negotiations in good faith to arrive at an equitable solution to the situation.

Article 18 provides that, if a watercourse State has reasonable grounds to believe that another watercourse State is planning measures that may have a significant adverse effect upon it, the former State may request the latter to apply the provisions of article 12. The request shall be accompanied by a documented explanation setting forth its grounds. This will then trigger a

chain effect on the application of Articles 13,14,15,16, and 17 as well.

The 1997 UN Law also includes articles outlining procedure and time frame for settling disputes in which arbitration and the International Court of Justice may be used. As stated previously, China did not notify any watercourse State about their hydropower projects on the Mekong. Vietnam may still base on the spirit of Article 18 of the UN Law to request China to notify Vietnam and other neighbors the details of the Chinese plans in accordance with the procedure of Articles 13, 14, 15, 16, 17 of the same Law.

Vietnam still can request actions to mitigate the environmental impacts of Manwan and Dashaoshan. With respect to the remaining 5 dams, all steps should be taken according to the UN Law before they are implemented.



Mekong Delta Wetland [Photo by MekongForum]

Although reasonable, these actions are more complicated than we can imagine, because China is a super power quite but backward in human right and international relations. Vietnam should know better than anyone else for having had thousands of years of history being next to China. There now exists a border dispute between the two countries on land, water and especially on sovereignty over the Paracel Archipelago and the Spratly Archipelago. I do not think Vietnam has the strength to negotiate with China and resolve their conflict in an equitable and reasonable manner. I do not know of any international court that can indict and enforce a court order over China. There has been no power that could stop China from occupying Tibet by force and killing its people.

Vietnam still should raise the issue on the Mekong hydropower dams with China based on the principles of the 1997 UN Law. Mekong should be made one of many major unresolved issues in Sino-Vietnam relation. Vietnam may or may not

be able to persuade China to enter an agreement on the development of the Mekong, Vietnam would at the least mobilize the world opinion against China's blatant ignorant of the impacts they cause to neighboring countries. The campaign could dampen the enthusiasm of other countries and international financial institutions with the involvement in Mekong development projects. Vietnam and other lower countries in return may choose not to respect China's future navigational need throughout the Mekong once the river is further developed.

Instead of a bilateral negotiation between Vietnam and China, a multi-lateral negotiation which involves all other Mekong countries would better help the situation. It then becomes clear that the Mekong River Commission representing the four countries: Laos, Thailand, Cambodia and Vietnam had failed to initiate talk, consult and negotiate an agreement with China before China moved ahead with these dams. Let it be known that Manwan Dam was started in 1985, and the Mekong River Committee was reactivated in 1978. Only recently that The Mekong River Committee has the opportunity to engage in talk with China through the plan of the Greater Mekong Sub-region (GMS) which was initiated by the Asian Development Bank (ADB). The GMS plans to invest in and develop a network of communication systems, energy generation and power distribution systems, transportation systems which include highway, railroads linking the them to the Regional harbors which reach all the way to Malaysia, Thailand, Myanmar, Yunnan, Laos, Cambodia and Vietnam.

The GMS's plan is ambitious and should be encouraged. The ADB (backed mainly by Japan and USA) could pour massive investment into the GMS to modernize the region, and promote an international cooperation in a spirit of fairness and mutual benefits. Although the GMS had held a number of meetings at Kuming, the capital of Yunnan, no concrete result has been announced in the last few years. Two possible reasons for this state of inaction are the instability caused by China in the South China Sea and the financial crisis in Asia.

The financial crisis began in Thailand in 1997 and caused the economic collapse that had drastically changed that forecast on the power demand in the region. It appears the Asian economic crisis is nearing its end and Thailand has resumed her economic growth. We may again hear about

hydropower in the coming days. If Tokyo and Washington will maintain the GMS plan, it may very well be the most feasible road map to bring Vietnam and China and the Mekong countries together towards a solution favorable to all. Meanwhile Vietnam must begin a discussion with China on the basis of the UN Law, either bilateral or multi-lateral through MRC. About the later, it did not act to protect the interest of the four lower Mekong countries and promote a basin wide approach that include China and Myanmar; if for any reason, it does not wish or does not have the capability to engage in a talk with China on behalf of the lower Mekong States, the MRC would have no reason to exist.

I reckon that the two lowest Mekong countries, Cambodia and Vietnam which share the same ecosystem that spreads from Kratie to the South China Sea, should form an alliance to negotiate with Thailand, Laos and China to protect the Great Lake Tonle Sap and the Mekong Delta. Such negotiation should be based on the UN Law and with the support on the World Bank, the ADB, the government of Japan and the US.

Expected Actions of the Vietnamese government

To the Vietnamese government, I will speak to them on this issue about the Mekong whether they hear me or not. Bear in mind that there are many issues that remain unresolved between the present leadership and Vietnamese people, myself included, I choose not to waste my time to discuss them. But the Mekong River situation however is a different case. It involves the future shape of Vietnam and the greatest national asset of the Vietnamese. It does not resemble say an economic or political problem that Vietnamese can eventually deal with, overcome and catch up with the world. The impacts of upstream hydropower developments on the Mekong Delta would be irreversible, the damage inflicted on Vietnam would not be merely a wound but permanent deficiency on the body of our nation.

Vietnam reaps no benefit from the hydropower developments upstream but that does not mean Vietnam should systematically oppose the development beneficial to the upstream neighbors. The issues Vietnam should raise are:

- 1- At the present time, there is no study conducted on the Mekong River Ecology from the source to the sea. No one

knows, for example, the exact territory of say a Mekong shrimps, its spawning cycles, its breeding and feeding behavior, from new born to maturity and even death. There are several ecosystems working within the Mekong, with many thousands species of animals and plants. No one really knows about the relationship between aquatic species themselves, between aquatic and terrestrial species, between the aquatic life and the River's hydrology and the physical conditions of the basin;

- 2- The present knowledge of the Mekong Ecology is very sketchy, the same is also true about the physical conditions of the river's basin. Without a solid and complete knowledge, no one can assess the impact of the proposed and on going hydropower developments on the River Environment;
- 3- Without an accurate assessment of the impacts in advance, it would be impossible to have an optimal (or environmental) design, and effective mitigation measures to minimize the impacts;
- 4- Most importantly is the lack of the political will on the part of the governments.

Based on the above discussion, I propose that Vietnam initiate the following campaign:

- 1- Build an alliance with Cambodia to protect the Mekong Delta;
- 2- Request all upstream countries to halt all dam projects. In reality, this has already happened thanks for the Asia financial crisis which had caused all hydroelectric developments in the region to come to a stop;
- 3- Request all countries and interested financial institutions to conduct a comprehensive study of the entire physical conditions of the basin and the ecology of the River, from the source to the sea;
- 4- Collaborate with respective countries to investigate the environmental impacts of every project;
- 5- Negotiate and enter an agreement with respective countries on every project. This, in transparency, meaning with the knowledge of the Mekong River people and the world.

In conclusion, I wish to express that the Vietnamese may not oppose other countries in their developments of the Mekong River. However, the Vietnamese need to know the exact impacts these developments would have on Vietnam in order to protect their interests, in the spirit of international cooperation, on the basis of mutual benefit and fairness. The grounds for Vietnam's Mekong River campaign should be based on the 1997 UN Law and the support of the international communities around world.



Hauling Wood [Photo by Hai D. Pham]

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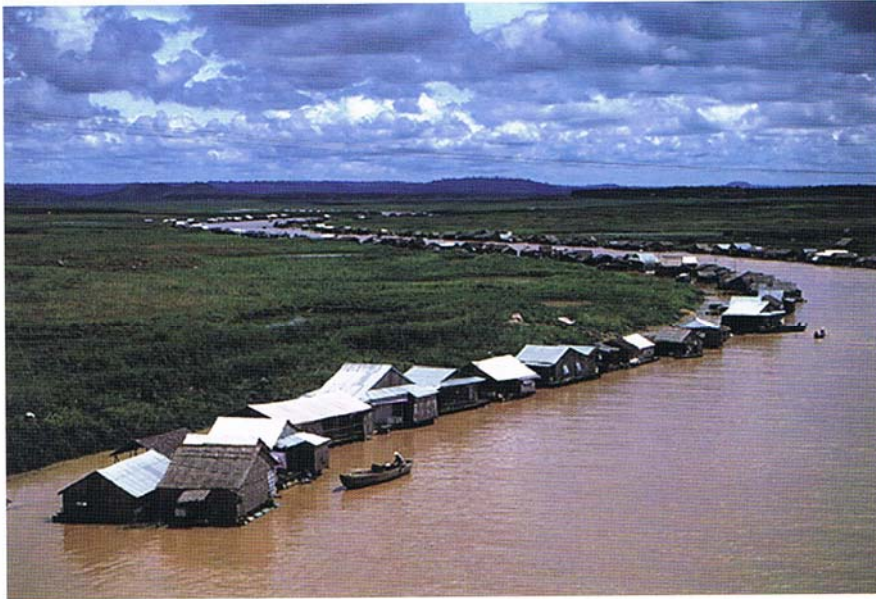
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Rural Transport in Mekong [Photo by MekongForum]

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