Global Ecology
And the "Made in China" Dams

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To the Friends of the Mekong Group

"Water has become expensive, and it will be even more expensive in the future, which will make it the 'Blue Gold' of the 21st century".
Ricardo Petrella, 3/2000_ The New "Conquest of Water"

HALF A BILLION PEOPLE ON THIS PLANET

A decade ago, the World Commission on Dams (WCD) published a research on the impacts of big dams on human development for worldwide distribution.

This year (2010), Water Alternatives, an independent academic on-line journal staffed with researchers and editors, has conducted an evaluation of the works done by WCD. Its aim is to determine the extents of the impacts the big dams have exerted on the ecology, socio-economic milieu, and living conditions of the inhabitants along the banks of the rivers in question.

The scope of this study is not limited to the people who resided in the vicinity of the dams and became victims of forced relocation. It also covers the communities that dwelled downstream the 120 rivers that flow through 70 countries of the world.

According to Brian Richner, Director of the Nature Conservancy Program and leader of the study group, there are approximately half a billion souls

(472 million) - 85% of them in Asia - who live downstream those rivers. These unfortunate people will have to bear the brunt of the dreadful effects brought about by those mammoth dams - be it degradation of the ecology, deforestation, depletion of fish source and reduction of grazing grounds for cattle raising… A case in point: if we remove the urban population from the picture, the remaining more than 40 million people - mostly farmers and fishermen - still have to depend on the life-giving water of the Mekong to till their rice fields or catch the fish which represent their main source of protein.

China is the birthplace of many rivers. By now, most people have become familiar with the argument that this country puts forth about the benefits emanating from its dams such as electricity generation, flood control, and water irrigation for farming. On the other hand, China fails to mention the negative and long-term impacts that its dams visited on the ecology, environment, and life of the people living down the river.

A study done by Water Alternatives (June 3, 2010) shows that there was an upsurge in the number of big dams' construction in the world: from 5,000 in 1950 to 50,000 currently. Brazil, the country of soccer, single handedly reported 1,700 new projects for dam building.

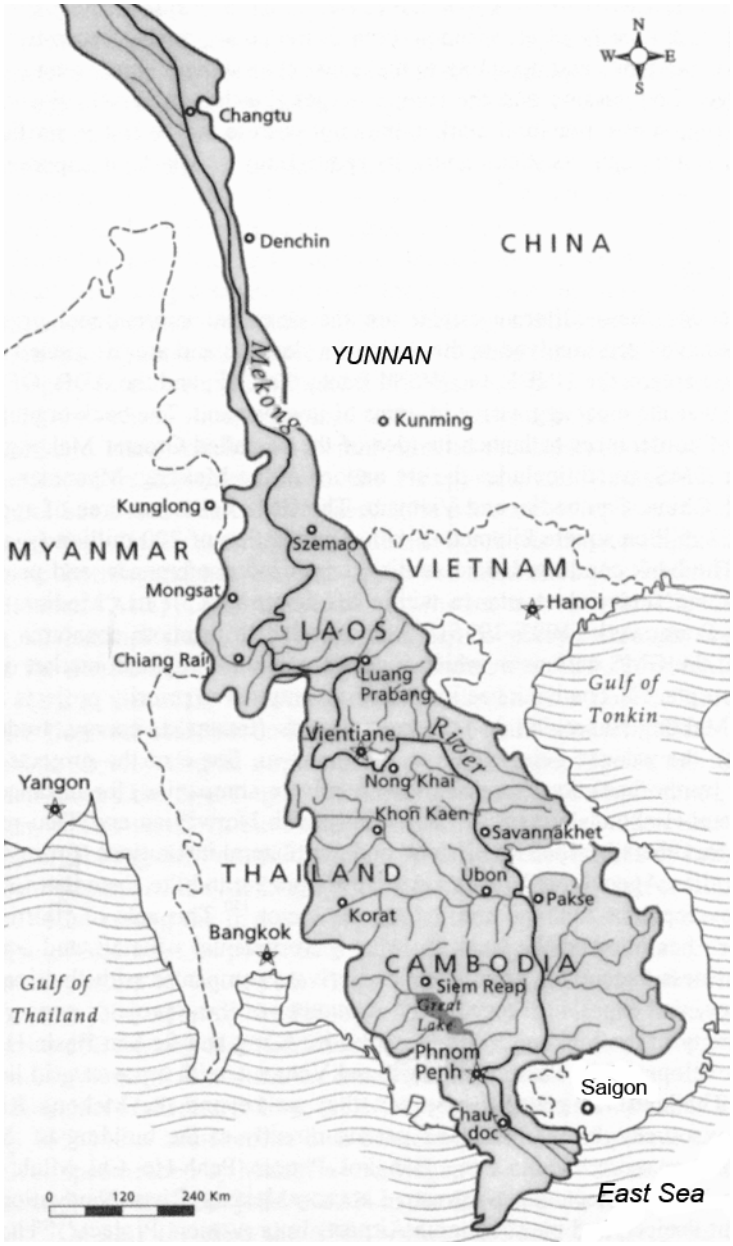
Again, in Brian Richner's view, at a time when dam construction fever reaches its apogee all over the world, we must show more proof of good judgment and prudence right from the inception of the projects to their operational procedures in order to minimize their harmful impacts on human life and the ecology. [12]

For instance, one must ensure that "the dam will release enough water downstream to sustain [the survival of the] species" as well as maintain the river's natural flow and conserve the ecology.

Writer's comments*: the above expectation amounts to wishful thinking if not in itself a paradox considering the "conflict of interests" between the affected countries and the companies that own the dams. For instance, due to a severe water shortage during the recent drought, operators of the dams in Yunnan found it difficult to run their turbines while at the same time maintain a steady supply of electricity to the fast developing industrial zones in the Southwest of China. Under those extreme conditions, it would be clearly "unrealistic" to expect the Chinese to release out of "voluntary*

kindness and selfless compassion" the already scarce water in their dams' reservoirs to save the rivers downstream from being drained dry.

THE DAMS ON THE LANCANG JIANG - MEKONG



GMS _ Greater Mekong Subregion
Drainage area: 795,000 Km2
Length of mainstream: 4,400 Km
Average discharge: 15,000 m3/sec
[Source: Mekong River Commission]

Based on the forecast of the U.N. Environment Program (UNEP), the population in the Lower Mekong will total 90 million in 2025. One third of them will make their home in urban areas. The rest - mostly farmers and fishermen - will settle along the riverbanks. Those people will directly suffer from the accumulative and nefarious impacts caused by the dams in Yunnan.

To assuage the thirst for energy of its fast growing industrial development, China will continue to build dams in the Mekong Cascades regardless of the socio-economic and ecological price incurred by the nations downstream.

To this day (2010), there exist three dams which are operating at full capacity: Manwan (1,500MW), Daichaosan (1,350 MW), and Jinghong (1,350 MW). The fourth one, Xiaowan (4,200 MW) measuring 292 meters in height is the tallest in the world. With an area of 190 square kilometers and a capacity of 15 billion cubic meters, it ranks second largest after the Three Gorges Dam on the Yangtze River. Beginning in 2009, water from the Mekong has been diverted to the Xiaowan Dam and this process is expected to go on for four years (until 2012) before the planned water level could be reached. However, the first generator began to produce electricity as of September 25, 2009. In a statement attributed to Mr. Wang Yongxiang, General Manager of the Hydrolancang Company, there are presently three more dams under construction in the 14 dam series of the Mekong Cascades in Yunnan. [13]

Not content with building dams on the sections of the Mekong that courses through Yunnan Province, China also controls the construction projects for the dams downstream in Laos: Pak Beng (1,320 MW), Pak Lay (1,320 MW), Sanakham (1,000 MW); and in Cambodia: Sambor (2,600 MW) which is bigger than the Manwan Dam in Yunnan (1,500 MW) and bears a price tag of $US 5 billion.

Along with the dam projects downstream, the Sambor and Don Sahong Dams act as barriers preventing the migratory fishes in Cambodia from swimming upstream and also threatening the existence of the two famous and endangered species of the river: the Mekong Giant Catfish [Pla Beuk] - well known as a long-distance migratory fish - and the Irrawaddy dolphins that always need deep holes to survive in the Dry Season. [3]

The Summit Conference on the Mekong, Hua Hin Thailand

To respond to the pressure of:

a) public opinion, the environmental groups and especially the protestations from the inhabitants living downstream (most notably in the Northeast of Thailand) and the direct victims of a Mekong running dry

b) the threat of a Mekong being drained dry by the series of dams built upstream in Yunnan

the four Southeast Asian nations in the Lower Mekong (Thailand, Laos, Cambodia, and Vietnam) have convened a meeting in the beach city of Hua Hin, 200 kilometers to the South of Bangkok, to work out a sustainable strategy for the exploitation of the Mekong's resources.

The Prime Minister of Thailand, Mr. Abhisit Vejjajiva, despite having to confront a political crisis which may lead to civil strife in his country, still managed to attend the Summit to make this inaugural statement:

"The Mekong River is being threatened by serious problems arising from both the effects of climate change, without good and careful management of the Mekong River as well as its natural resources, this great river will not survive" [4]

Prior to the Hua Hin Summit Conference, in an attempt to ease the anger and criticism of environmental groups and the inhabitants of the Lower Mekong, the Chinese Assistant Foreign Minister, Mr. Hu Zhengyue, visited Thailand in March 2010. He was told by the Thai Prime Minister, Mr. Abhisit Vejjajiva, that Thailand expected China's cooperation in dealing with the problem.

Soon afterwards, Beijing sent another 27-member delegation led by Mr. Song Tao, Deputy Foreign Minister, to observe the Summit. Not being a member of the Mekong River Commission, China is not held accountable to anything besides being just a "dialogue partner". Beijing has consistently insisted that droughts have always been the real culprit leading to serious water penuries and consequently the drying up of the Mekong River. Ironically, an analysis done by the Mekong River Commission itself (MRC) has supported the Chinese argument. [4] And this is the reason why the environmentalists have blamed the Commission for failing to protect the Mekong and not doing its work. [5]

Bowing to pressure from public opinion, Beijing began to share hydrological information concerning its two dams in Yunnan. It would be appropriate to

take note of the regrettable reception China reserved for the four member countries of the Mekong River Commission as described in the interview with Mr. Boonchai Ngamvitrot, Director of Thailand's Hydrological Research Office:

"The first day the delegation visited the Jinghong Dam. We arrived at the site and observed for about one hour. The Chinese allowed photographs to be taken. The second day, the delegation visited the Xiaowan Dam, observed for about one hour but was not allowed to take pictures there. Only five or six employees of the hydroelectric company greeted the delegation. No representatives of the government or the Chinese Department of Hydrology accompanied us. We rarely exchanged views and mostly came to look". [15]

Calling it a fact-finding trip would be an overstatement. What can the four-country delegation really learn about the two dams they visited within those two short hours?

Notwithstanding the above-mentioned half-hearted public relation campaign, China continues to reject any responsibility for the Mekong being drained dry in the past. [2] The arguments she offers are "old wine in new bottles" lacking any convincing power for the following reasons:

(1) The Chinese delegation claimed that the water coming from upstream the Lancang Jiang only amounts to 13.5% of the average annual discharge of the Mekong into the East Sea. Therefore, the dams in Yunnan only bear minimal impacts on the river downstream. Moreover, their reservoirs play a positive role in regulating the current flow, prevention of floods, and improved irrigation for farming.

Writer's comments*: According to Milton Osborne who is a respected expert on Southeast Asia and author of many books on the Mekong River ("The Mekong: Turbulent Past, Uncertain Future" and "River Road to China: The Search for the Source of the Mekong"), the current flow of the Lancang Jiang (the Chinese name of the Mekong) during the Dry Season at certain sections contributes up to 40% of the Mekong's water capacity – about three times the figures of 13.5% cited by China. [11]*

(2) The Chinese delegation claimed that the countries downstream were not the only ones that suffer from the Mekong River being drained dry. Millions of inhabitants of the Southwestern provinces in China had also to deal with the problems of water shortages, and severe droughts in recent periods.

***Writer's comments**: a combination of climatological phenomenon such as climate changes, lack of rains, and droughts resulted in the dams' water levels to drop near the "critical level". To ensure that there would be adequate water to run the turbines and satisfy the electricity needs of the industrial zones, 40% of the water during the Dry Season is kept in the reservoirs of the dams in Yunnan. It would not be hard to imagine how much more serious will the water shortage and drying up of the rivers be downstream.*

(3) The same Chinese delegation had turned a deaf ear to the warnings raised by the environmental groups. It referred to an article in the issue on March 8, 2010 of "The Nation" in Bangkok to support their stand. That article stated: "claims made by environmentalists are scientifically groundless and the real cause of falling water levels is low rainfall".

***Writer's comments**: low rainfall in all the areas the River runs through – from the Upper to the Lower Mekong – during the entire Dry Season leaves the melting of snow in the Tibetan High Plateau as the very last source of water to maintain the Mekong' current flow at its age old natural rate. That last hope evaporated when the river's water was kept in the reservoirs of the mammoth dams in Yunnan. The saying "water kept upstream, shortage runs downstream" would then become an undeniable fact. Nevertheless, that self-evident truth is being disparaged by China. [11]*

No matter what, to the present day, China categorically refuses to join the Mekong River Commission to avoid being bound by any decisions adopted by that international body. In the eye of the inhabitants living downstream the Mekong, China appears to be "ruthless" or in more diplomatic terms totally "insensitive" toward the tribulations the countries to its Southern borders are facing.

THE DAMS IN ASIA

Dams on the Irrawaddy River:

China has started construction of Myanmar's largest dam on the Irrawaddy River at the end of 2007. Named Myitsone, the dam has an output of 3,600 MW. It is located right at the junction of two river branches, 42 kilometers to the North of Myitsone, the capital city of Kachin State.

As reported in the state owned newspaper, The New Light of Myanmar, since May of 2007, the Burmese Government has adopted a project to build

seven hydroelectric dams on the Irrawaddy River with a combined total output estimated at 13,360 MW. This is a joint venture between the China Power Investment Corporation (CPI) and Burma's Ministry of Electric Power No. 1. However, according to the Kachin Environmental Organization based in Chiang Mai, Thailand, the human rights of the inhabitants of the region adjoining the dam sites are being constantly violated. The natural and cultural heritage of the Kachin people are being destroyed: 40 villages in the vicinity of the construction site will be completely inundated and more than 10,000 people will lose their homes and be forced to relocate. If we also consider the danger posed by a dam collapse caused by an earthquake, the impacts on the millions of inhabitants living downstream in such case would be catastrophic. (The northern region of Myanmar, like Yunnan, is a seismically active zone) [9]

In June 2010, the Chinese Prime Minister, Mr. Wen Jiabao, paid a visit to the military leaders of Myanmar to discuss "energy issues" and indicated that the two nations will give more impetus to the building of hydroelectric dams in Myanmar. The Myitsone Dam Project on the Irrawaddy River is only one of nine to be implemented. Besides the China Power Investment Corporation (CPI), a second big Chinese dam-building company called China Datang Corporation (CDC) recently joined the construction effort.

The dam project meets with strong oppositions from the Kachin people. An example of it is the bomb explosion on 4/17/2010 at the construction site killing 4 Chinese workers and injuring many others. Immediately after, members of the Kachin group were arrested, tortured and the group as a whole suffered harsher repression at the hand of the Burmese military. Nevertheless, the program of forced relocation and the pace of dam construction went ahead unabated. [10]

It is not difficult to understand why China prefers to sign business deals with dictatorial regimes that oppress their people under the pretext political stability.

Dams on the Tibetan High Plateau:

Snow covered Tibet towers at an altitude of 3,500 to 5,000 meters and is called the "rooftop of the world". The big rivers that serve as lifelines to the entire Asian continent derive their source from the Tibetan High Plateau. In the East, besides the Yellow and the Yangtze Rivers that flow within the Chinese borders, one must mention three others: the Mekong, Irrawaddy,

and Salween. To the West and Southwest, there are the Indus, Sutlej and Yarlung Zangpo also known as the "the highest major river in the world".

Beijing has confirmed with New Delhi that it will build the first dam on the Yarlung Zangpo or Brahmaputra. It is a big river that flows across the Himalayas into a huge and deep canyon before entering India. This river brings the life sustaining water to millions of Indians.

The Chinese experts also disclosed a plan to build 4 more dams in the valley lying in between the Sangro and Jiacha districts. When completed, the total power output of those dams will be many folds higher than that of the world's largest dam, Three Gorges Dam, on the Yangtze. [6]

This new energy source is the equivalent of 100 million tons of coal. To put it differently, "it could generate energy equivalent to all the oil and gas deposits in the South China sea". [14]

It is common knowledge that the East Sea is a "hot zone of contest" between China, Vietnam and the other Southeast Asian nations.

India has voiced its concern about the future dams in China that may exert harmful impacts on the already fragile ecology of the Himalayas – particularly about the direct effects they will bring to bear on the current flow of the Brahmaputra. This river supplies water to the agricultural and industrial areas in the northeast of India. India's concern grows even deeper as the country realizes that with those dams Beijing will wield full control of the water supply to the 90,000 square kilometers that lie within the area being contested by those two nations.

[It would be appropriate to recall that in October 1962, those two countries fought each other in a border conflict named Sino-Indian War at an altitude of over 4,000 meters. In spite of a subsequent armistice, the situation remains tense and the border dispute unresolved. In retrospective, one cannot disregard the political factor that led to this war: the uprising of the Tibetan people was suppressed by China in 1959. In its aftermath, for humanitarian reasons, New Delhi welcomed and granted political asylum to the Dalai Lama in the face of Chinese protests].

Like in the case with the dams in the Upper Mekong, China always adhere to the same policy of "denial" concerning the impacts the dams in the Tibetan High Plateau have on the water supply of India.

With a somewhat nationalistic attitude, the leaders in Beijing feel that they are under no obligation to inform India, its powerful nuclear neighbor, of their projects. Nevertheless, they did just that in order to build the trust and lessen the tension between the two countries. [Sic]

Mr. Yan Zhiyong, General Manager of China Hydropower Engineering Consulting Group, observed: “Tibet has the largest stock of hydropower among all provinces. Exporting Tibetan electricity to eastern provinces will significantly ease China’s energy shortage problem”.

A senior diplomat of India, Mr. Anant Krishnan, believes that even though this unchecked building of dams is confined to the Chinese borders, it would unavoidably cast a dark cloud over China’s relationship with the countries downstream. He went on to make this comparison:

“India is just as alarmed about dams on the Yarlung Zangbo as Thailand, Laos, Vietnam and Cambodia are about China’s dams on the Mekong River in Yunnan” [6]

THE DAMS IN THE AFRICAN CONTINENT

According to the “Economist”, Africa is the continent that builds the least number of dams while also experiencing the most critical penury of water and electricity. It would be a “dream land” for the construction of dams and China is the nation that invests amply toward that end. The drawback is that the dam’s output generally does not measure up to expectation due to an irregular climate, inaccurate weather forecasting, and political corruption. In the past, China has derived much profit from business activities such as land lease, wood cutting, and import of natural resources from Africa. However, this continent turns out to be not the “opportune land” for China to invest in dam projects. [7]

DAM CONSTRUCTION WORLDWIDE AND HUMAN RIGHTS

Approximately half of the world’s dams are found in China. Beijing also owns the biggest dam building companies on the globe.

Only a few decades ago, China still had to rely on the dam building companies in the West like the multinational conglomerate Ertan Hydroelectric Development Corporation (EHDC) for technological assistance in the implementation of the Three Gorges Dam projects. However, the Chinese meantime had in the ready a strategy to deal with

foreign companies. They required those who do business with them to manufacture half of the turbines and electric generators in China with the participation of local hydroelectric engineers and technical workers. This is a cost-effective way of achieving technological transfer from the West to China in a very short time.

Lured by billions of dollars in profit, the big companies of the West like ABB, Alstom, General Electric, and Siemens agreed to those terms and by the same token facilitated the transfer of industrial production process to China. The young Chinese engineers did not let that opportunity slip through their fingers. They learned fast and mastered the science of dam building from their foreign colleagues. It did not take them long to design and manufacture all the machinery and equipments needed for the construction of dams in Mainland China.

The end result: China, nowadays, has surpassed its teachers, controlled the market of dam construction and is now in charge of 19 of the 24 largest dam building projects in the world. There are no known statistics to verify it but it is safe to assume that not a few turbines and equipments in the big and small dams of Vietnam bear the stamp "made in China".

Besides the fact that China has mastered the technology for dam building, many have wondered how she was able to "export the industry of dam building" to so many countries in such a short time?

Mr. Peter Bosshard, Policy Director of the International River Network (IRN), believes he has found the answer to that question. In his opinion, Western companies may command more experience and higher technology but, as a group, they are at the same time more mindful of the social and environmental impacts caused by the dams they build. On account of this "respect for human rights", they tend to be "cautious and conservative" in their business dealings. On the other hand, China failed to show the same degree of concern to those issues. Beijing had never let go of an opportunity to make a profit. It did not have second thoughts when submitting a bid and proceeded on regardless of whether it met the ecological criteria set by the international community or not. [8]

In the end, before the court of public opinion, China cannot claim total innocence for the disastrous impacts caused by the dams it has invested in and built. A good example of it are the ecological mishaps that are unfolding in the Greater Mekong Subregion (GMS). To describe this situation, the

press has cleverly offered a picture of a China that walks on thin ice. Such an image of China will undoubtedly worsen were that country to persist in carrying out their objectionable building projects all over this planet.

It is this author's hope that the countries involved will succeed to work out an equitable arrangement for their worsening water shortage to spare a large portion of the world's population from much suffering and miseries. A "war for water" that a number of observers foresee will not be in the interest of humankind and should be avoided at any costs.

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[Source: Viet Ecology Foundation]

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