

# THE TWO POLES OF DESTRUCTION FROM NUOZHADU TO DON SAHONG THE MEKONG IN THE CLAWS OF DEATH

*“My heart, soul and brain is now in focus to see how we can stop the madness on the Mekong.”* Tom Fawthrop, Journalist / Producer of the film *Killing the Mekong Dam by Dam*.

To The Friends of The Mekong  
Ngô Thế Vinh

## THE CHAIN-REACTION IMPACTS FROM THE DAMS

With the passing of time, the cumulative and irreversible chain-reaction impacts coming from the occluding rivers as well as the 26 mainstream dams (14 dams in the Mekong Cascades in Yunnan and 12 in the Lower Mekong) on the more than 4,800 kilometer-long Mekong include:

1/ Changes in the natural state of the river prevent its current from maintaining its seasonal “flood pulse” which is of vital importance to the Tonle Sap Lake, the heart that regulates the eco-system of the Mekong River and the Mekong Delta.

2/ Changes in the current’s flow will result in a reduction in the wetland areas and destruction of the vital habitat required by the fish species of the Mekong that in turn will adversely affect the fish source and food security.

3/ The altered current threatens the diversity of the fish population including flagship species that serve as a gauge of the wellbeing of the Mekong’s ecosystem like the Irrawaddy Dolphins and Pla Beuks that are facing the risk of extinction.

4/ The forests along with the wetlands of the Lower Mekong are classified as key biodiversity zones therefore protected by the Ramsar Convention. The dams will cause the wetlands to be submerged and impact the fauna and flora of the entire basin.

5/ Agricultural production will be adversely affected on account of the submerged lands. In addition, alluvia retained in the dam reservoirs upstream will deprive the fields along the riverbanks especially those in Cambodia's Tonle Sap Basin and Vietnam's Mekong Delta of their essential nutrients like phosphate and nitrogen.

6/ Reduction in the quantity of alluvia leads to imbalances in the current flow and cave-ins of riverbanks. Meanwhile the Cape Cà Mau is being continuously eroded and its seacoasts receding inland. The reservoirs bring about a weaker current flow and climate change results in a rise in the seawater level: the end result is an ever worsening and encroaching salinization in the basin. No rice species or orchards can survive in fields covered by sea salt.

Witoon Permpong-sachareon, director of TERRA, a Bangkok-based environmental-advocacy group stated: "Dams are the biggest threat to the Mekong and a healthy environment. Building a dam is like putting a clamp on the artery of a healthy person. If your blood doesn't flow naturally, your body will certainly be damaged." [Strangling the Mekong. Ron Moreau, Richard Ernsberger Jr. Newsweek International, March 19, 2011]

## THE TWO POLES OF DESTRUCTION

Of the 26 mainstream dams on the Mekong, the Nuozhadu Dam (5,850 MW) in Yunnan is the largest while the Don Sahong Dam (260 MW) the smallest but most important one in southern Laos. (We do not take into consideration the Thakho Diversion, also in Laos, 50 MW sponsored by CNR & EDL). This article discusses the two poles of destruction: the

impacts of the largest and the smallest dams on the entire eco-system of the Mekong.

## NUOZHADU THE LARGEST DAM

Ranked second in size only to the Three Gorges Dam on the Yangtze River, the Nuozhadu Dam resembles a dinosaur straddling the Mekong River. Its construction started in 2006, and required the relocation of 24,000 inhabitants from the building site. The reservoir of the Nuozhadu Dam measures 226 km in length, its area 320 km<sup>2</sup> (almost half the area of the island nation of Singapore: 716 km<sup>2</sup>) its capacity 22 billion m<sup>3</sup>, (Xiaowan Dam: 15 billion m<sup>3</sup>) is 30 times larger than that of the Tokuyama Hydroelectric Dam, the largest in Japan. The dam has 9 generator units that were completed in 2014. They boast a total output of 5,850 MW, the equivalent of more than 5 large nuclear reactors. [*Chinese dam projects raise alarm in Asia according to Asahi Shimbun, 16/08/2010*]

Though the Nuozhadu Dam [261.5 m] is not as high as the Xiaowan Dam [293 m] it still ranks as the “largest dam” built over the Mekong’s mainstream. In Fred Pearce’s opinion: “*With the completion of the Xiaowan and Nuozhadu Dams in Yunnan, the Mekong is destined to become China’s new water tower and electrical powerhouse*” Fred Pearce (*Damming the Mekong: Major blow to an Epic River, Yale Environment 360, 22 June 2009*) [Figure I & II]

The Japanese expert Hiroshi Hori works with the Mekong River Committee of the United Nations. This author of the book “The Mekong: Environment and Development” remarks: “*The upper Mekong Basin is an earthquake zone, it is feared, earthquakes may occur if dams are built in the upper Mekong Basin.*” (2)

In the past, Chinese scholars and environmentalists have also sounded the alarm concerning the dam collapses. (3)

There are no guarantees that such a disaster will not befall the Mekong River. If this river is the lifeline to almost 70 million inhabitants of the basin then each dam represents the Achilles' heel of the entire region. Apparently, man-made disasters will prove to be much more devastating than those caused by Mother Nature.

An overall review of China's plan for the exploitation of the Mekong led Tyson Roberts of the U.S.-based Smithsonian Tropical Research Institute to this observation: "The Chinese hydropower dams, channelization for navigation and heavy commercial shipping will kill the river...[China's moves] will turn the Mekong into a biologically degraded, badly polluted, dying river like the Yangtze and other big rivers of China," (6)



Picture I \_Nuozhadu, *the largest hydroelectric dam on the Mekong River:*  
*The red letters on the left: "The hydroelectric station Nuozhadu of the*  
*Huaneng Power International, Ltd.;" the white letters on the right: "Power*

*comes from water – Ability to contain generates great things” (Source: Ying Qiu, International Rivers)*



Picture II \_ *The reservoir of Nuozhadu, the largest dam on the Mekong River length: 226 km, lake area 320 km<sup>2</sup> (almost half the area of Singapore: 716 km<sup>2</sup>) capacity: 22 billion m<sup>3</sup>. (Source: Ying Qiu, International Rivers)*

### **DON SAHONG THE SMALLEST DAM**

Almost a year ago, October 3, 2013, the Lao government notified the Mekong River Commission / MRC of its decision to build the second mainstream dam Don Sahong. It is a run-of-river dam located near the Khone Waterfall in the Siphadone area of Champasak Province southern Laos, only 2 km from the Laos-Cambodia border. Laos has not officially produced any project's final design or other details pertaining to the Don Sahong Dam. Preliminary data show the dam's output to be 260 MW, its height 30m, its width 100m. It is situated on the 5 km long Hou Sahong water channel. (4)

The Khone Waterfall looks extremely majestic with countless falls, whirlpools and thousands of continuous islands (hence its name Four Thousand Islands). According to the expert on Australia's ecology Dr. Nguyễn Đức Hiệp, during the Rainy Season, the volume of water and alluvia discharged by the Khone Waterfall is greater than that of the Niagara Falls in North America and Victoria Falls in Africa combined.(7)

From its western to its eastern bank, the Khone Waterfall can measure up to 14 km at its widest span. From the standpoint of biodiversity, the Khone Waterfall remains the most fascinating site of the Mekong. Right at the foot of the Waterfall, one can find a congregation of the largest variety of fresh water fish not only in Southeast Asia but also in the whole world. It is the source of water, alluvia, and aquaculture such as fish, crustaceans, molluscs and aquatic plants... particularly fish, the most important supply of protein to the majority of the inhabitants of the basin especially of Laos and Cambodia.

The section of the Mekong at the Khone Waterfall can be considered as the vital point of the entire eco-system of the Mekong basin.

The biodiversity of the Mekong River consists of about 1,200 different fish species, 2/3 of which belong to the migratory variety. Seasonally, they swim upstream the Mekong and its tributaries to their breeding grounds to spawn and grow. The lion's share of them are caught and traded as food source.

The fresh water and abundant alluvia in the Mekong help transform the Mekong Delta in Vietnam into the second largest granary of the world after Thailand and also the world's largest fishery of fresh water fish with an annual catch of 4 million tons worth US Dollars 9 billion. Together with the large catch of shrimps, crabs, turtles, snails, alga and seaweeds they account for upto 80% of the protein intake of the people in the basin.

The French expedition team led by Doudart de Lagrée and Francis Garnier sailed upstream the Mekong in 1866. They stood in awe at the magnificent landscape the Khone Waterfall unveiled before their eyes with the thundering sounds of the water crashing down and the whirlpools foaming and splashing all around them.

The Khone Waterfall has often been compared to an ideal laboratory of nature, a microcosm of the entire ecosystem of the Mekong for biologists and ichthyologists to come and do their research. It is this unique attribute that prompts Doctor Mark Hill to argue that the integrity of the Khone Waterfall must be preserved at all cost during the review of all development plans and hydroelectric dam projects for the Mekong.

The Canadian Ian Baird, currently a professor at the University of Wisconsin had volunteered to go and live in Laos for many years. Since 1993, he served as the director of the *Laos Community Fisheries and Dolphin Protection Project* in southern Laos. With an annual budget of only US Dollar 60,000 he managed to coordinate the activities of 63 villages in the region to save the Dolphins from imminent extinction. His long-run objective is to establish a sustainable fishery because it is a known fact that “rice and fish” form the backbone of the Mekong basin’s economy. (1)

[Picture III]



Picture III\_ Ian Baird, environmentalist, has lived in Laos for many years and is a Mekong fisheries expert. (Source: Tom Fawthrop)

### JOY-COATED NATURAL DISASTER

If conventional way depicts an idyllic time in the Mekong Delta when a man could just “pick” his food from Mother Nature to eat his fill and the fields were so vast the egrets could fly at will, then nowadays, to paraphrase the bible, he has to earn his bread with the sweat of his forehead while his offspring has to travel to faraway lands like South Korea, Taiwan, China...to make a living. On the other hand, on that unfortunate land, people still try to maximize their exploitation of Ecotourism with their endless advertisements praising a Mekong Delta being favored by nature with its orchards, bird sanctuaries, delectable local dishes cooked with fish and shrimps, exotic flowers and fruits...

To the uninformed it seems as if this is an inexhaustible natural resource without having the slightest idea that this is actually “a joy-coated natural disaster” to borrow a line in one of Nguyễn Đình Toàn poems. This poet once compared the water in the Mekong to the blood of the earth. Who can imagine that the Mekong Delta is like a ship bumbling in the high sea and each dam built on the Mekong mainstream is like a big or small hole puncturing the side of the hull allowing seawater to slowly flood its holds. The immediate outcome can be seen in the Mekong’s rice fields looking barren due to saline intrusion. [Picture IV]

Of the same desolate fields, Professor Võ Tòng Xuân, former president of An Giang University had this to say: “*Rice production in the Vietnamese Mekong Delta is further threatened by the building of the next dam on the main stream, the Don Sahong Dam in Southern Laos. This dam will block the Mekong’s main stream just before the famous Khone Falls, reducing its flow and endangering the Ramsar site in Siphandone and the crops and fisheries downstream. We observed that dry season rice areas are being expanded in Northeast Thailand, Southern Laos and Cambodia. Substantial*



*water abstraction is occurring in these areas. During the past several years water supply during the dry season in the Mekong Delta was reduced severely, resulting in saline intrusion as far as 80 km further inland, adversely affecting crop yields. We call on the Lao government as well as the Malaysian investors to refrain from altering the main stream of the Mekong River to save the Lower Mekong environment and people.” [26-10-2013] Prof. Võ Tòng Xuân, Rector Emeritus An Giang University, Vietnam.*



*Picture IV\_ Prof. Võ Tòng Xuân in a barren field caused by saline intrusion at the Gia Rai District, Mekong Delta. (Source: Prof. Võ Tòng Xuân. University of An Giang)*

[ Probably we should take a pause here and have a brief look at the Ramsar Convention (1971), whose objectives are the conservation and wise use of the natural resources of wetlands as well as the classification of preserves to be protected by individual countries and the world community. All the three

countries of Cambodia, Laos, and Vietnam have wetlands that are protected by the Ramsar Convention like: the Khone Waterfall, Middle Stretches of the Mekong River north of Stung Treng, The Tonle Sap Lake Biosphere, Tam Nông Bird Sanctuary, Cape Cà Mau National Park...]

## IN LIEU OF EPILOGUE

The American Secretary of State Hillary Clinton then U.S. Senate (07/2011) had eagerly called upon the Mekong countries to avoid the mistakes the American government committed in its hasty decisions to build the dams so that they can be spared the painful consequences the United States had to suffer over the last 100 years. (5)

We have the case of a big country like China that behaves irresponsibly in its attempt to appropriate and overexploit the hydroelectric potentials of the northern half of the Mekong River with little regard for the impacts and the price the countries downstream have to pay. Sadly enough, the other Mekong countries do not act any better either. Granted that their urge for economic development and need to assuage the energy thirst are legitimate but they do not warrant the rush to build dams heedless of their nefarious impacts on these countries' ecology, economy, society, and food security. It's like building castles on the sand.

A myopic focus on short-sighted benefits would inexorably result in an “unsustainable development”, or more precisely “self-destructive development” that will eventually exhaust the country's natural resources. And future generations would have to live in a barren and increasingly impoverished land.

After 19 years in existence since its establishment in 1995, the Mekong River Commission/ MRC had dealt ineffectively with the challenges posed by the two Xayaburi and Don Sahong Dams in Laos. Those incidents showed that this institution is not vested with the needed authority thus

rendered powerless in mediating the transboundary disputes among the Mekong countries. The crux of the problem is the Commission lacks an enforcement mechanism. Failing an immediate reorganization of this institution, we will undoubtedly witness a replay of the same scenario with the remaining 10 mainstream dams in the Lower Mekong. That would represent a complete catastrophe for the Mekong's eco-system and the death knell for the Mekong Delta.

With the “The Spirit of the Mekong” as a common denominator and unhindered by political divergences and parochial ineterests, the Mekong countries do have the ability to close ranks and build a sound foundation for lasting effective development, meet their demand for electricity, stimulate economic growth, and eradicate poverty while conserving natural resources for future generations.

To reiterate: *“The Mekong River is being threatened by serious problems arising from both the unsustainable use of water and the effects of climate change...But without good and careful management of the Mekong River as well as its natural resources, this great river will not survive.”* P.M. Abhisit Vejjajiva, MRC Summit 2010 Hua Hin, Thailand.

The concise and meaningful pronouncement mentioned above did not come from a Vietnamese leader but from the former Thai Prime Minister Abhisit Vejjajiva, at the Hua Hin MRC Summit of 2010 over four years ago.

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