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The History of the Mainstream Dams, the Proposed Don Sahong Dam, and Civil Society Concerns

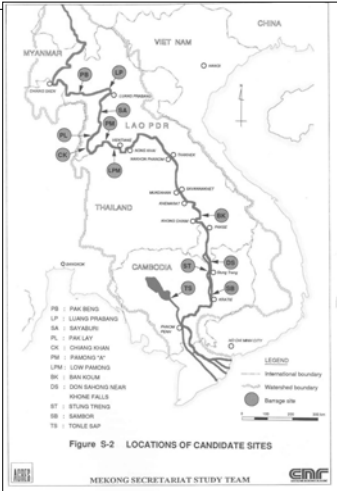
Carl Middleton Ph.D.

International Rivers

Key messages

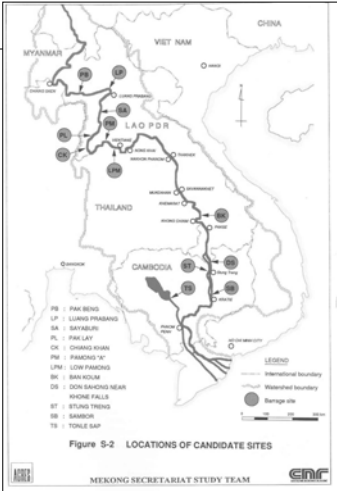
- Plans for Mekong mainstream dams have existed since the 1950s, but never proceeded
- The Don Sahong dam is now proposed in Lao, just upstream of the Cambodia border. The project, if built, will impact fisheries and livelihoods locally and regionally
- Other options exist to meet regional energy needs and to ensure sustainable economic growth

A Brief History of Mekong mainstream dams

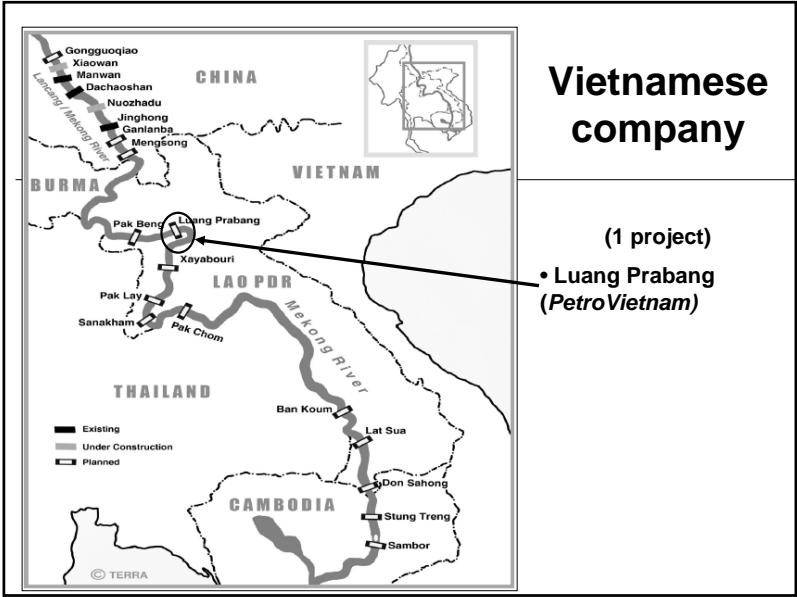
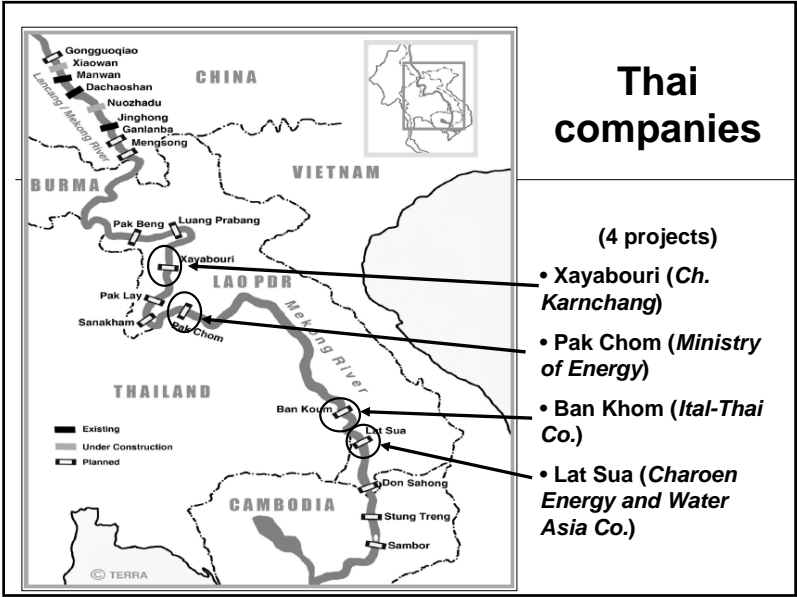
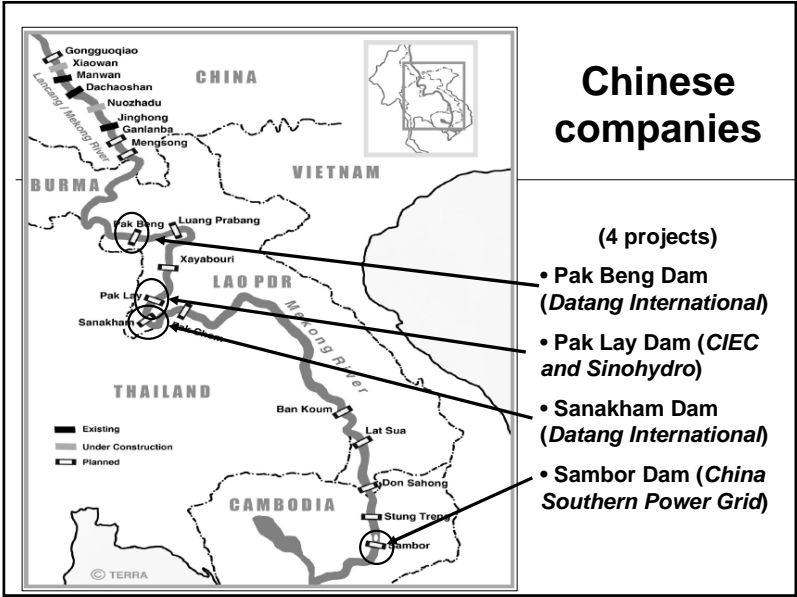
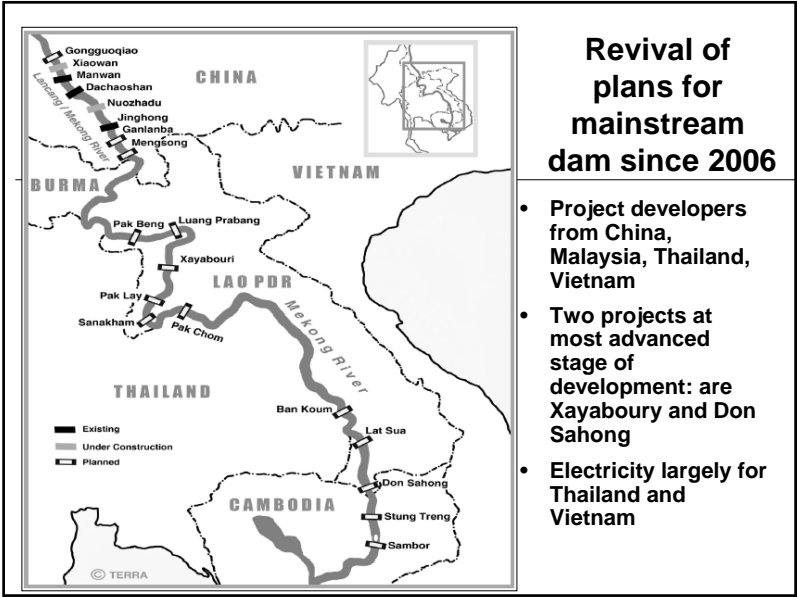


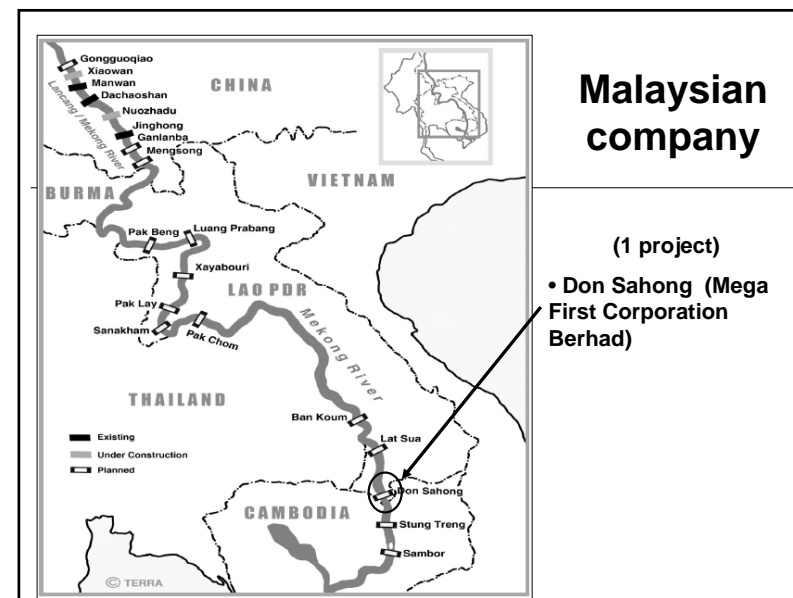
- Plans for seven multipurpose mainstream dams were first developed in the 1950s
- Conceived by United States (US) Bureau of Reclamation (who considered Mekong's floods as "destructive"), and developed under the Mekong Committee (1957)
- Design claimed to provide 23,300 MW hydropower, flood control, irrigation and improved navigation
- Would have stored 1/3 of the rivers flow

A Brief History of Mekong mainstream dams

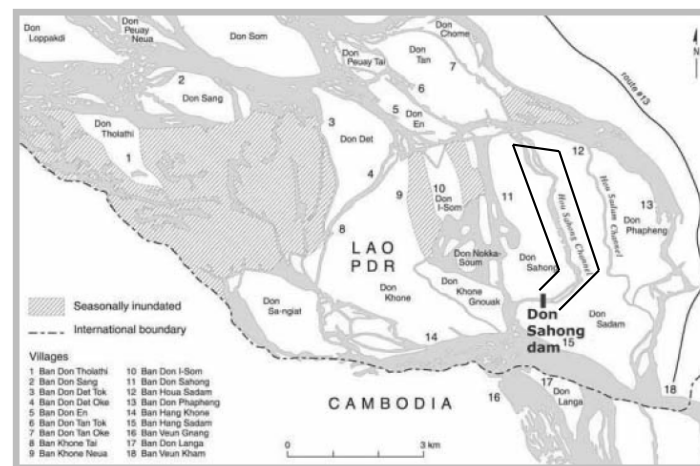


- Plans reformulated in 1994 as nine "run of river" dams (13,350 MW) with 600 km of reservoir, displacing 57,000 people
- MRC tried to secure funding for pre-feasibility studies for Don Sahong, Sambor and Ban Koum dams for its 1996 programme
- Electricity mainly for export to Thailand





Don Sahong, Hou Sahong Channel



- MFCB is a Malaysian Engineering and Construction company
- Registered on the Kuala Lumpur stock exchange
- Business interests include thermal power plants, engineering and property in the UK, China and South Africa
- MFCB view Don Sahong as a catalyst for further investments in Laos

Don Sahong, Hou Sahong Channel



Don Sahong Dam Design



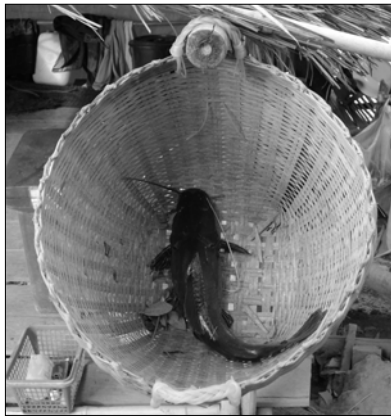
- Dam is located on the Hou Sahong channel in Lao, less than 2km upstream of the Lao-Cambodia border
- Dam height = 30-32 meters
- Capacity = 240-360 MW
- Cost is approximately US\$300 million
- Project developers are:
 - 50% MFCB;
 - 30% IJM Corporation Berhad;
 - 20% Govt of Lao

Don Sahong Dam: Current Status



- MoU signed in March 2006
- PDA signed in February 2008, to be complete by September 2009
- According to MFCB PDA confirms “the feasibility and social/ environmental studies of the proposed Don Sahong project to be technically and financially viable”
- Reportedly though, GoL has requested further environmental and social studies, in particular on fisheries impacts

Don Sahong Dam: Current Status



- MFCB is now preparing detailed project design
- Company is negotiating a 30 year “Build-Operate-Transfer” concession agreement with the Lao Government
- Seeking buyer of the electricity (Power Purchase Agreement) with neighboring countries
- Planned COD is 2013

Siphandone area: Globally Unique



- At Siphandone, the river drops 30 meters through a maze of channels and islands
- Name translates to “4000 Islands”
- The area is an ecologically rich and unique island-river habitat of global value
- Siphandone is a strong candidate for accession to the “RAMSAR International Convention on Wetlands of International Importance”

Siphandone: Home to endangered species

- Birds e.g.: the White-rumped Vulture
- Fish e.g.: the Giant Mekong Catfish
- Reptiles e.g.: the Asian Giant Soft-Shell Turtle.
- Mammals e.g.: Irrawaddy Dolphin



Siphandone: Spectacular scenery and ecotourism



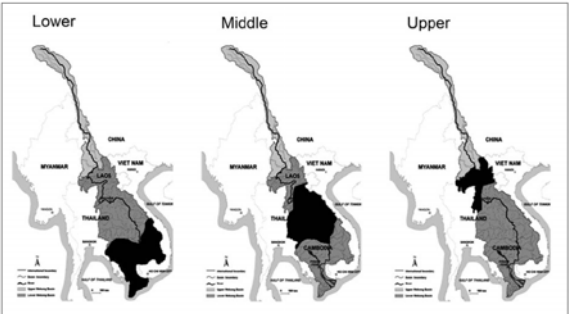
Siphandone: Rich fisheries



- Fishing is primary livelihood activity for local communities
- 210 species in the area know to be of high commercial value
- Wide diversity of fishing techniques

Siphandone: Fisheries bottleneck

- Scientists consider the Khone Falls area to be a critical year-round bottleneck for fish migrating throughout the lower Mekong Basin – ensuring an abundant catch for local communities!



Source: Baran & Jutagate (in press) after Poulten et al. (2002)

1994 Mekong Secretariat fisheries evaluation of mainstream dams



The Khone Falls is “an ecologically unique area that is essentially a microcosm of the entire lower Mekong River... Such a site is so rare in nature that every effort should be made to preserve all of Khone Falls from any development”

Mekong River’s fisheries are central to regional economy and food security



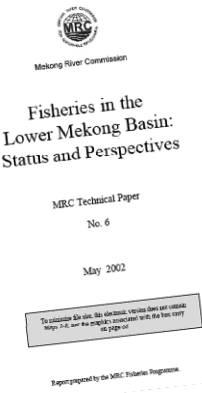
- The Mekong supports the world’s largest inland fishery
- First catch value is up to US\$2 -3 billion
- Economic value is up to US\$9.4 billion
- 64-93% of rural households are involved in fisheries
- Consumption of fish/ aquatic animals contributes 47-80% of animal protein intake
- Fish are central to nutrition and food security for the 60 million people in the Lower Mekong basin

Mainstream dams will block major fish migrations



- Mainstream dams are a barrier to fish migration
- Dams on middle and lower reaches of Mekong could affect 70% of commercial fish catch
- There are no current technologies that can mitigate the impacts to fisheries

MRC on the value of fisheries



“The cost of replacing this essentially-free resource with another food, income and employment would be prohibitive. With this perspective, it is clear that the conservation of capture fisheries is crucial to maintaining food security and social stability”

Fisheries in the Lower Mekong Basin: Status and Perspectives: MRC Technical paper no. 6

Mekong mainstream dams: Other impacts



Upstream of the Sambor Dam site

- Blockage of sediment flows
- Fragmentation of ecosystems
- Local hydrological impacts and loss of river bank gardens and agricultural land
- Involuntary resettlement

Impacts of Don Sahong: Fisheries



- Don Sahong will block the main channel passable year-around through Siphandone between Cambodia, Vietnam, Lao and Thailand
- Will impact migration, feeding and breeding patterns of a diverse number of fish species, including commercially important species
- Threatens subsistence and commercial fisheries locally and throughout the Mekong region
- Serious repercussions for food security

There is scientific consensus on fisheries impacts from Don Sahong dam



- Letter from 34 globally respected “concerned” scientists stated:
- “the location of this proposed dam is probably the worst possible place to site a 240 MW project since it is the point of maximum concentration of fish migration in the river that supports the world’s largest freshwater fishery”

Is fisheries mitigation an option?



Failed fish pass structure at Pak Mun Dam, Thailand

- Option 1: Fish pass structure
 - “In the Mekong basin there are no examples of effective [fish] passes” WorldFish Center Brief
 - “[t]here is no prospect that a fish pass could make a significant difference to the blocking effects of this dam.” Letter from Concerned Scientists

Is fisheries mitigation an option?



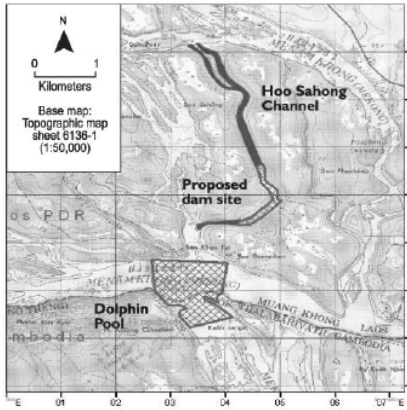
- Option 2: Widening adjacent channels
 - New hydrological conditions mean there are no guarantees fish will find the other channels
 - Blasting the channels will damage Siphandone and Stung Treng
 - Ensuring flow in the new channels is a significant engineering challenge

Don Sahong impacts: Mekong Giant Catfish


- Catfish have been caught only in the Hou Sahong channel
- Thought to be migrating between Tonle Sap Lake and Northern Laos and Thailand




Don Sahong impacts: Irrawaddy Dolphin




- The Veun Nyang/ Anlong Cheuteal deep pool is home to approximately 10 Irrawaddy Dolphins.
- In the dry season, they live in the deep pools.
- In the wet season, move to within just a few hundred meters of the proposed dam site.



Don Sahong impacts: Irrawaddy Dolphin




- **Impacts:**
 - the potential loss of dolphin habitat due to alterations in daily flow patterns;
 - reduced food availability due to a reduction in the dolphin's fish prey supply;
 - and construction-related stress, which would affect dolphin breeding and foraging habits
- “the possibility for effective mitigation of the proposed Don Sahong dam appears low” *WWF*




Don Sahong impacts: Ecotourism

- The dam jeopardizes the last remaining population of Irrawaddy Dolphins in Lao
- The dam will divert water from the Khone Phapheng waterfalls
- The dam threatens Siphandone's RAMSAR site status
- The dam would impact tourism in Lao and in nearby Cambodia

Don Sahong impacts: Lao-Cambodia Transboundary



- In addition to fisheries impacts...
- New water flows could cause erosion of some downstream islands in Lao and Cambodia
- Construction could impact the Stung Treng Ramsar site



No public information disclosure/ participation

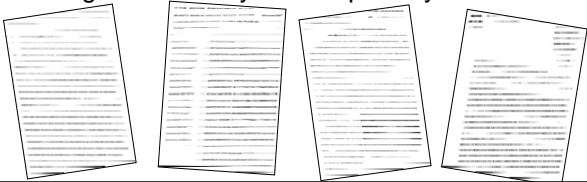
- Local Lao people have received no or misleading information
- People in Cambodia have received even less information.
- The project's draft EIA and SIA were reportedly submitted to the GoL in July 2007, but have not been publicly released.
- No consultations have been held at the national level in Lao.

Don Sahong Dam: Project questioned

- In April 2007, 28 NGOs sent an open letter to the GoL, the MRC and its member governments urging for the project to be reconsidered.
- In May 2007, 34 scientists sent a letter to the GoL urging decision makers: “to consider the weight of scientific evidence [that] will show the Don Sahong project to be hugely destructive, such that even the economic (including livelihood) costs outweigh the net benefits—even before the environmental impacts are taken into consideration.”
- The WorldFish Center and WWF have released science briefs highlighting concerns about the project’s threat to fisheries and Irrawaddy Dolphins.

Don Sahong Dam: Project questioned

- In November 2007, 201 organizations and individuals from 30 countries around the world—including 126 citizens’ groups from Mekong countries—sent a letter to the MRC raising objections to the revival of plans to build dams on the Mekong mainstream, with Don Sahong identified as a project of special concern.
- The letter requested the release of economic a review of the Don Sahong’s draft EIA prepared by the MRC – although this is still yet to be publicly available



Mekong Public Forum, November 2008, Bangkok



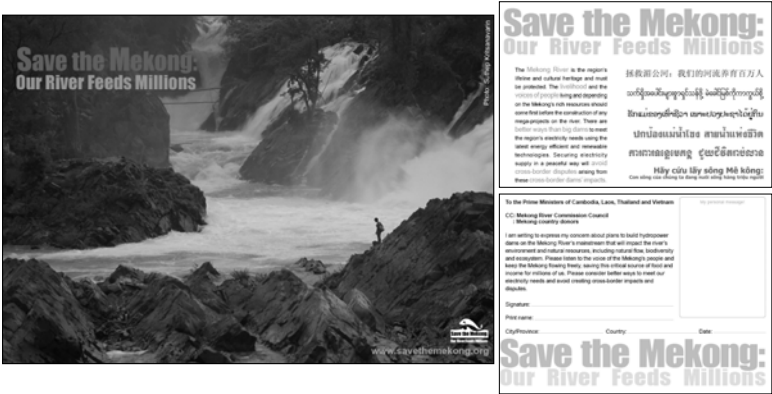
- Revealed deep concern amongst the regions academics, civil society groups and the public over revived plans for mainstream dams

Save the Mekong coalition

- The Save the Mekong coalition is a network of non-government organizations, community groups, academics, journalists, artists, farmers and fishers from within the Mekong countries and internationally
- Recognizes that the Mekong River’s fisheries are central to regional food security
- Urges regional leaders to work together to protect the Mekong River and promote better ways to meet electricity needs.
- This will ensure sustainable economic growth, protect food security and promote regional peace and prosperity.



Save the Mekong Postcards



Save the Mekong exhibition, Bangkok, March 2009



THE WAY FORWARD Better electricity planning is urgently required



Monorail bridge over the Chao Phraya River, Thailand

- Balanced assessment of supply and demand side electricity options urgently needed
- Energy efficiency potential is huge in Thailand and Vietnam
- New renewable and decentralized technologies becoming viable
- Empowered electricity regulators are needed
 - Public participation crucial

THE WAY FORWARD Basin scale planning needed before projects are developed



- Poor river planning will lead to more dams, higher impacts, fewer revenues.
- In Laos, planning currently led by the private sector
- Planning needs to consider long term versus short term benefits – and transboundary impacts
- Scientific and local knowledge in partnership
- Public participation

THE WAY FORWARD
**World Commission on Dams:
Options assessment**



- Need to consider all options before building a dam including the “no project” option:
- Fish for the future: Recognize the development potential of wild-capture fisheries and role in current food security.
- Alternative options, such as: ecotourism and niche agriculture

For only 300 megawatts of electricity, is the Don Sahong Dam really worth the environmental, social, and cultural cost?

Thank you for your attention



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