Dams in the Sekong basin: Environmental overviews fail to see Cambodia

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Norconsult's initial environmental examinations for the environmental impact assessments for the Sekong 4 and Nam Kong 1 dams recognize many of the inevitable impacts of these projects on the environment and people living along these rivers in the Sekong River Basin in southern Laos. However, these IEEs fail to refer to the impacts of these projects on people living downstream in Cambodia. Meanwhile, the World Bank's Regional Director for Southeast Asia, Ian Porter, and other proponents of large hydroelectric dams invariably claim that these dams produce electricity that is "environmentally and socially clean".[1] The experience with the trans-boundary impacts of large hydroelectric dams elsewhere in the Mekong Region clearly indicates that the impacts of the Sekong 4 and Nam Kong 1 dams on Cambodia and in Laos must not be ignored, and should not be allowed to happen, no matter how easy it is for the proponents of dams *per se* to dismiss these impacts.

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The Norwegian consulting company Norconsult has recently completed the Initial Environmental Examinations (IEEs)[*] for the proposed Sekong 4 and Nam Kong 1 Hydroelectric Projects and are, according to Norconsult, "intended to provide an overview of the project and the areas of environmental concern" for the environmental impact assessments (EIAs) of these projects. The 'synopsis' of each of these IEEs is notable for its straightforward statements regarding some of the inevitable social and environmental impacts of these dams. The two projects are located approximately 100 km apart, one on the Sekong River and the other on one of its major tributaries, the Nam Kong, in the Sekong River Basin in southern Laos (see Table 1 for details).

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[*] Norconsult. June 2007. *Environmental Impact Assessment (EIA) of the Reservoir Impoundment for the Se Kong-4 HEP: Synopsis of the Initial Environmental Examination*. 17 pp.
Norconsult. June 2007. *Environmental Impact Assessment (EIA) of the Reservoir Impoundment for the Nam Kong-1 HEP: Synopsis of the Initial Environmental Examination*. 18 pp.

Table 1: The proposed Sekong 4 and Nam Kong 1 Hydroelectric Projects

	Sekong 4	Nam Kong 1
Dam height	155 m	80 m
Crest length	860 m	390 m
Reservoir area	150 km^2	21.8 km^2
Generation capacity	600 MW	150 – 200 MW
Transmission lines	Double 230 kV overhead	Single 230 kV overhead
Transmission line length	60 km	77 km
Main purpose	Export to Vietnam, Thailand, and/or Cambodia	Export toVietnam, Thailand, and/or Cambodia

The IEEs for the proposed Sekong 4 and Nam Kong 1 describe impacts on the specific areas and communities that would be directly affected by the projects (e.g., areas to be flooded by reservoirs, resettlement issues, etc.) and the impacts of each project on the Sekong River (e.g., aquatic ecosystems, riverbanks, fisheries and other aspects of people's livelihoods). For the purposes of this article, and as the synopsis of the IEE for each project describes the impacts on the Sekong River in the very similar ways, even to the extent of using the exact same wording at times, these impacts will be mainly cited from the Synopsis of the IEE for the Sekong 4 project.

According to the Synopsis of the Initial Environmental Examination (S-IEE), the Sekong 4 hydroelectric project would require the resettlement of approximately 5,000 people, 98 per cent of whom are of ethnic minority communities. The Sekong 4 reservoir would flood extensive areas of forests and other lands that are a source of non-timber forest products, are used as grazing lands, and on which local people conduct rotational swidden cultivation. The district capital of Kaleum would also be flooded by the reservoir. With a catchment area of 5,400 km^2 – 19 per cent of the total area of the Sekong River Basin – the Sekong 4 dam would detach the upper reaches of the Sekong from the rest of the river basin and 'regulate' 22 per cent of the Sekong's total flow.

For the Nam Kong 1 dam, over 1,600 people living downstream from the dam are expected to be directly impacted by the project. Many of these people previously lived in the reservoir area but were resettled by the government with donor support in the 1990s.

As a very large dam situated on the mainstream of the Sekong River, the Sekong 4 would create major impacts on the river and the communities living along it. According to the Sekong 4 S-IEE,

"All villages in the reservoir flooding area have robust fisheries primarily for subsistence, contributing a large part of the protein in their diet. The fisheries downstream of the dam in the Se Kong plain through to the Cambodian border and beyond are significant both for subsistence and trade." (p.8)

"The [Sekong 4] reservoir will change the hydrology of the [Sekong] river significantly both upstream and downstream. Upstream the river ecology will change from a fast upland river to a deep, steep sided lake, which is expected to be relatively unproductive

from a fisheries point of view. Much of the biodiversity of the upstream section will be lost, and changed to species that are more adapted to lacustrine conditions. Fish migrations up the mainstream of the Se Kong will be lost, with resulting loss of productivity of the river fisheries." (p.14)

"Downstream, the flows in the river will be evened out over the year, with smaller peak flows during the rainy season, and potential for smaller flood events. Higher flows and water levels are expected during the dry season. The most affected area will be the stretch of river between the dam site and Attapeu, and about a relatively small influence upon the flows in the Mekong mainstream. There is potential for a loss of aquatic biodiversity and productivity in the Se Kong River downstream due to these changes in flow. Diurnal changes in flow and water level dependent upon [the project's electricity] generation mode may also impact upon the aquatic flora and fauna, and the fishing operations." (p.14)

"The release of poor quality water from the reservoir will have an effect upon the aquatic flora and fauna in the first stretches of the river below the dam, tending to reduce both diversity and populations…However, the major impacts upon aquatic life can be expected as a result of the changes in flow regime. The existing diversity of fish and invertebrate fauna has developed as a result of these seasonal changes in flow and the flood pulse down the river. The predictable increases and decreases of water level through the wet and dry seasons has allowed the development of many different ecological niches, and the well-recognised productivity of the Mekong basin rivers depends upon these flow related niches." (pp.11-12)

As the Sekong 4 project generates electricity, according to the Sekong 4 S-IEE, "It is likely that as a result of the more evenly spread river flows downstream, the habitats will change over time, deep pools will tend to fill up, river banks will become less productive, and there will be a gradual loss of diversity and productivity. Fish that undertake long distance migrations up the Se Kong from the Mekong will be blocked by the dam and may lack the necessary triggers for migration such as the early wet season flood. Whilst some may go up other tributaries, this will certainly have an effect upon the overall populations that the river can support." (p.12)

According to the Nam Kong 1 S-IEE, "The most affected area will be the stretch of river between the dam site and [the Nam Kong River's] junction with the Se Kong River…There is potential for a loss of aquatic biodiversity and productivity in the Nam Kong river and its associated wetlands downstream due to these changes in flow."

Initial environmental examinations are the first step in the environmental impact assessments for the Sekong 4 and Nam Kong 1 hydroelectric projects. As the above excerpts from the Sekong 4 S-IEE indicate, some of the main impacts of the project (and be extension, the impacts of the Nam Kong 1 project) have been identified. However, noticeably absent from the S-IEE is an explicit recognition that these impacts will extend along the Sekong River in Cambodia. Clearly, the Sekong 4 hydroelectric project would cause impacts along the entire Sekong River in Laos and in Cambodia. The construction

and operation of the Nam Kong 1 project would also certainly cause impacts to Cambodia, as the Nam Kong River enters the Sekong only a few kilometers upstream of the Lao-Cambodia border. Together, the Sekong 4 and Nam Kong 1 dams intensify these impacts on the Sekong. Individually or collectively, these projects would cause trans-border impacts that extend from Laos into Cambodia.

The cumulative impacts of Sekong 4 and Nam Kong 1, both being developed by the Russian energy corporation, Region Oil Company, indicates that a cumulative EIA would be possible, marking the first time such a cumulative assessment would take place in a river basin in Laos, and the first time such an assessment would include the trans-border impacts of these projects (and, by extension, other projects proposed to be built in the Sekong basin in Laos) on Cambodia.

There are recent precedents for conducting trans-border, or 'transboundary', EIAs for large dams in the Mekong River Basin. In 2006, the Swedish consulting company SWECO Groner, with funding provided by the Swedish and Norwegian governments, undertook the "Environmental Impact Assessment on the Cambodian part of Srepok River due to Hydropower Development in Vietnam". Located in northeast Cambodia, the Srepok is the main tributary of the Sesan River, which is the main tributary of the Sekong River. SWECO Groner also conducted an EIA on the Cambodian part of the Sesan River, which has been badly impacted by hydroelectric dams built upstream in Vietnam.

For more than ten years, 55,000 people living along the Sesan River in Ratanakiri and Stung Treng provinces have witnessed the devastating impacts on their river and fisheries by the dams in Vietnam. More than 10,000 along the Srepok River were not informed of the potential impacts on their river and fisheries before Vietnam began construction of the dams on that river. Clearly, these EIAs should have been completed and informed the decision-making processes regarding construction of these dams.

There are 30,000 people living along the Sekong River in Stung Treng province, Cambodia, the majority of whom are of ethnic minority groups, including Lao, Khmer Khe, Kavet, Lun, and Kuy. The Sekong's productivity, from its fisheries to the riverbank vegetable gardens, is essential for these people's food security and local economies.

It is clear that the impacts of the Sekong 4 hydroelectric project, and the cumulative impacts of Sekong 4 and the Nam Kong 1 project, would not be confined to the Sekong River on the Lao side of the border, but will extend along the Sekong River in Cambodia. Experience indicates that proposals to build large dams on trans-border rivers require comprehensive and participatory transboundary environmental impact assessments. Only then can a process of informed decision-making begin.

The Government of Cambodia will need to approach the Government of Laos and make known its concerns about the impacts of dams in the Sekong basin on Cambodians. There is no mechanism through the Mekong River Commission that requires Laos to inform Cambodia of these impacts or by which Cambodia can demand that such impacts be prevented, mitigated, or put to an end. The Cambodian government should have learned

from the experience of its people along the Sesan and Srepok rivers and proactively work to prevent such impacts from occurring along the Sekong.

In Laos, however, it is encouraging that some of the serious negative impacts of the dams proposed to be built in the Sekong River Basin have been identified by the IEEs for the Sekong 4 and Nam Kong 1 dams. It remains to be seen whether the identification of these impacts will actually bring about any changes in plans, or provide base-line data that would allow for the substantial compensation that is invariably deserved by the tens of thousands of people in southern Laos who will be impacted by these dams. So far, there is no indication that the people living along the rivers of the Sekong River Basin will receive treatment any better than the tens of thousands of Lao citizens whose livelihoods and economies have been ruined by dams built in Laos over the last decade, or of those who will be similarly impacted by the World Bank-funded Nam Theun 2 Hydroelectric Project. As Bank officials like Ian Porter seem unable to comprehend, the construction of every large dam in Laos has severe environmental and social impacts that frequently extend beyond the borders of any single country. The Initial Environmental Examinations for the Sekong 4 and Nam Kong 1 hydroelectric dams indicate that nowadays, even dam industry insiders like Norconsult recognize that hydro dams are not “environmentally and socially clean”. Tens of thousands of people living along the Sesan River in Cambodia could tell Norconsult – and the World Bank – that the impacts of hydroelectric dams do not become any less ‘dirty’ when they cross national borders.

Photo 1: Boat traveling on the Sekong River in the vicinity of the site of the proposed Sekong 4 hydroelectric project, Sekong province. As the largest Mekong tributary in Laos that has not been impacted by hydroelectric dams, the Sekong’s highly productive fisheries feed tens of thousands of people living along the river in Laos and Cambodia, and Sekong fish are sold in markets and restaurants as far away as Phnom Penh and Bangkok.

Photo 2: An ethnic Brao man fishing in the Nam Kong River, Attapeu province. In the mid-1990s, the Brao communities that now live downstream of the proposed Nam Kong 1 hydroelectric project were involuntarily resettled from their homelands, much of which would be flooded by the project's reservoir.

Photo 3: The Nam Kong River in the reservoir area of the proposed Nam Kong 1 hydroelectric project. Although the government resettled the ethnic Brao communities that lived in the reservoir zone to an area downstream of the proposed dam, many of these people continue to return to their former lands to collect non-timber forest products and cultivate swiddens.

Photo 4: The communal house of an ethnic Ngkriang community living in the vicinity of the proposed Sekong 4 reservoir. This upland community is located a 30-minute walk from the river so it may not be flooded by the reservoir. But many people in the community frequently use the Sekong River and it is their main source of fish. They may not be resettled as a result of the Sekong 4 hydroelectric project, but they would be severely affected by the project.

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1 Ian Porter, “Sustainable hydropower can benefit us all,” Bangkok Post, 7 September 2007.