

Probe International (Canada), in collaboration with 3S Rivers Protection Network, Cambodian Environmental Preservation Association, NGO Forum on Cambodia, MekongWatch (Japan), and International Rivers Network (USA), *Submission to Swedish Ministry of International Development Cooperation, Swedish International Development Cooperation Agency (SIDA), Swedish National Audit Office, Norwegian Ministry of Foreign Affairs, Norwegian Agency for Development Cooperation, Office of the Auditor General of Norway*, February 2007.

## **COMPLIANCE REVIEW**

### **An assessment of the Swedish-funded *Environmental Impact Assessment on the Cambodian part of Srepok River due to Hydropower Development in Vietnam* against Swedish Guidelines for Dams**

Probe International  
225 Brunswick Avenue  
Toronto, Ontario  
Canada M5S 2M6  
[www.probeinternational.org](http://www.probeinternational.org)

February 2007

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## 1. FINDINGS & RECOMMENDATIONS

The submission finds that the *Environmental Impact Assessment on the Cambodian part of Sre Pok River due to Hydropower Development in Vietnam*, funded by the **Swedish International Development Cooperation Agency (SIDA)** and conducted by **SWECO Groner** fails to comply with Sweden's 2005 guidelines for future and existing dams. Note the guidelines were endorsed by **SIDA** and **SWECO** in December 2005 and published by the **Swedish Water House** with funding from the **Swedish Ministry of Sustainable Development** (now **Ministry of Environment**) and **Swedish Ministry for Foreign Affairs**. The submission further concludes that:

**1.1** SWECO Groner's EIA is not a complete EIA as is required for public review prior to dam approval and construction, in accordance with international standards. It fails to present feasible environmental mitigation measures, alternative operating scenarios to minimize downstream damages, compensation options, and benefit-sharing mechanisms for communities in northeast Cambodia threatened by hydro development on the Vietnamese side of the Sre Pok river. As such, the report fails to meet Swedish standards and Cambodian expectations, and it leaves SWECO's client, Electricity of Vietnam, out of compliance with those same standards.

**1.2** SWECO's and SIDA's failure to uphold Swedish standards has direct consequences for more than 11,000 people of ethnic minority cultures living along the Cambodian part of the Sre Pok river: they are now at risk of increased poverty without compensation or effective mitigation measures provided by the dam developer, Electricity of Vietnam.

**1.3** The EIA's lack of compliance with Swedish standards, despite more than US\$10 million in Nordic aid for hydro planning in Vietnam, should prompt questions about the effectiveness of Nordic hydro aid and warrants further scrutiny from Nordic auditors, elected government representatives, and taxpayers.

**1.4** Additional Nordic aid for hydro development along the Sre Pok river would not only undermine the Nordic donor country's commitment to poverty reduction; it would conflict with the explicit wishes and rights of downstream Cambodians to participate in development that does not threaten their resources, livelihoods, and cultures.

**1.5** The Swedish guidelines wrongly attempt to shift responsibility for upholding Swedish standards onto dam project owners in developing countries. This places an unfair burden on citizens to hold dam builders to international standards in jurisdictions where the rule of law is weak. As leading aid donors to Vietnam, SIDA and NORAD have a *shared responsibility* to uphold and advance the international standards to which they claim to subscribe. Otherwise, SIDA and NORAD are lending legitimacy to poor hydro practices

that imposes unacceptable risks and hardship on poor and marginalized riparian communities.

## 2. BACKGROUND

The Sre Pok EIA in Draft (February 2006) and Final (November 2006) versions were prepared for **Electricity of Vietnam** by **SWECO Groner** in association with **Norwegian Institute for Water Research, ENVIRO-DEV**, and **ENS Consult**. SIDA negotiated the EIA contract with Statkraft Groner (now SWECO Groner) in 2003. The EIA was to be conducted in parallel to Stage 2 of the National Hydropower Plan Study in Vietnam, also conducted by SWECO. The NHP, which identifies six potential hydro dam sites on the Sre Pok river, cost more than US\$10 million and was paid for by SIDA and NORAD. See Table 1 for a breakdown of Nordic bilateral aid for hydro planning in Vietnam since 1999.

**Table 1: Nordic Bilateral Aid for Hydro Planning in Vietnam**

<b>Grant #</b>	<b>Project</b>	<b>Donor Funding (US\$)</b>	<b>Nordic Consultants</b>
<b>1.</b>	<b>National Hydropower Plan Phase 1 (1999 – 2002)</b>	<b>SIDA 2.7 Million</b> <b>NORAD 2.5 Million</b>	<b>SWECO</b> <b>International</b> <b>Statkraft Groner</b> <b>(now SWECO Groner)</b> <b>Norplan</b>
<b>2.</b>	<b>National Hydropower Plan Phase 2 (2003 – 2005)</b>	<b>SIDA 1.92 Million</b> <b>NORAD 3.06 Million<sup>1</sup></b>	<b>SWECO</b> <b>International</b> <b>Statkraft Groner</b> <b>(now SWECO Groner)</b> <b>Norplan</b>
<b>3.</b>	<b>Sre Pok Environmental Impact Assessment Study (2005 – 2006)</b>	<b>SIDA 122,277</b>	<b>Statkraft Groner</b> <b>(now SWECO Groner)</b>
<b>4.</b>	<b>Capacity Building in Licensing and Water Resources for Utilisation for Hydropower (2006 – 2009)</b>	<b>NORAD 1.4 Million</b>	<b>Norwegian Directorate for Water and Energy (NVE)</b>
<b>TOTAL</b>		<b>US\$ 11.7 Million</b>	

## **2.1 SWECO Groner's EIA Report**

A review by the 3S Working Group in Cambodia found the SWECO Groner EIA report inadequate as a basis for project approval and investment decision making.

SWECO Groner describes the purpose of its EIA report as to evaluate the potential impacts in Cambodia due to planned hydropower development upstream in Dak Lak province, Vietnam; and to describe possible mitigation measures to minimize or avoid possible impacts from operation of the Sre Pok power project. It calls for more detailed impact studies for each of the six dams planned for the Sre Pok river. However, according to the final version of the EIA dated November 2006 four of the six planned Sre Pok dams are already under construction (Buon Kuop 280 MW; BanTou Srah 86 MW; Dray Linh New 16 MW; and Sre Pok 3 220 MW).

The report recognizes that the Srepok river is a critical resource for at least 11,000 people in communities along its banks in Ratanakiri, Stung Treng, and Mondulkiri provinces of northeast Cambodia. It predicts that hydro development as currently planned will have serious negative impacts on people's livelihoods and food security in downstream Cambodia. It also lists possible mitigation measures to reduce or avoid impacts from construction and operation of the Srepok dams.

The following negative downstream impacts due to hydro dam construction and operation on the upper Sre Pok river are expected:

1. large daily water fluctuations
2. river bank erosion and landslides
3. reduced fish stocks
4. loss of fisheries habitat and diversity loss
5. blocked fish migrations
6. water quality unfit for drinking 5 to 10 years; and
7. disruptions to wildlife habitat and populations of rare and endangered birds and animals within three nationally designated conservation areas.

Without effective mitigation measures, the report predicts downstream communities will experience the following impacts:

- loss of productive fisheries
- riverside agriculture will no longer be possible
- loss of river-based income, food security, livelihoods
- increased health problems due to poor quality of water
- protein deficiency and malnutrition especially among children
- increased safety risk and navigation problems due to rapid water fluctuations and sedimentation of river channel.

SWECO Groner acknowledges that more detailed EIA studies, analysis of mitigation options, and consultations with affected people and other concerned parties, should be done before approval and construction of each hydropower project, in accordance with international standards. However, the reality is that four hydro dams – originally planned by SWECO and Electricity of Vietnam as part of the National Hydropower Plan – are now under construction on the Vietnamese side of the Srepok river. The largest hydro dam in the Srepok cascade has been under construction since 2003. This means that serious negative impacts have either already materialized or are imminent. The Sre Pok EIA is therefore the wrong kind of study that fails to provide the level of detail and analysis required at this advanced stage of hydropower development along the Sre Pok river.

### 3.0 COMPLIANCE REVIEW

Probe International has assessed SWECO Groner’s *Environmental Impact Assessment on the Cambodian side of the Srepok River due to hydropower development in Vietnam* against Swedish guidelines for future and existing hydro dams as shown in Table 2. The Swedish guidelines on dams are set out in a report published December 2005 by **Swedish Water House**, a research institute funded by the **Swedish Ministry of Sustainable Development and Ministry for Foreign Affairs**. Endorsed by SWECO and SIDA, the report *Future Dams: Recommendations to Swedish Stakeholders on Implementing ‘Dams and Development – A New Framework for Decision Making’* was written to help Swedish actors apply international “best practice” guidelines for dam building in developing countries.

**Table 2: Compliance Review**

<b>Swedish Guidelines for Dams</b> <a href="http://www.swedishwaterhouse.se">www.swedishwaterhouse.se</a>	<b>Non-Compliance Issue</b>
<p><i>1. Project agreements shall not be entered into with actors who already have unresolved conflicts or unfinished compensation agreements in their own projects.</i></p>	<ul style="list-style-type: none"> <li>▪ SIDA and NORAD negotiated two funding agreements with Electricity of Vietnam (EVN) in 2003 – Stage II of the National Hydropower Plan and the Sre Pok EIA – knowing that EVN had unresolved conflicts with downstream Cambodians over damages caused by the Yali Falls dam. EVN has not yet provided compensation to thousands of Cambodians adversely affected by EVN’s first dam on the Se San River, the 720-MW Yali Falls dam.</li> </ul>
<p><i>2. Responsibility for consultations and establishing a fair, transparent process rests with the project owner.</i></p>	<ul style="list-style-type: none"> <li>▪ Nordic donors have missed the opportunity to insist upon and contribute to a fair and transparent EIA process for hydro development along the Se San and Sre Pok rivers, under the auspices of the National Hydropower Plan for Vietnam and the Sre Pok EIA.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ SWECO’s Sre Pok EIA does not meet Vietnamese EIA standards, which came into effect July 2006.<sup>2</sup></li> <li>▪ As major donors to Vietnam, SIDA and NORAD have a <b>shared responsibility</b> to uphold and advance international standards for hydro planning, particularly to ensure that hydro projects and plans do not undermine development objectives i.e., reducing poverty and promoting sustainable development. If Nordic donors cannot uphold their own standards, they are lending credibility and funding to bad hydro planning that threatens the well being of riparian communities and the resources upon which they depend for survival.</li> </ul>
<p><b>3. Documents which are relevant for the project’s planning and assessment of its appropriateness, such as social and environmental impact assessments, shall be publicly available in good time before the decision to start construction. Swedish actors shall actively strive after the highest possible transparency in regards to power purchase agreements and feasibility studies.</b></p>	<ul style="list-style-type: none"> <li>▪ The Srepok EIA report notes that Vietnam’s National Hydropower Plan – conducted by SWECO Asia and funded by SIDA/NORAD – is closely connected to the Sre Pok EIA report with results of “major importance” to the Sre Pok study. The NHP has not been released to Cambodian stakeholders.</li> <li>▪ The Srepok EIA report notes that SWECO is doing a parallel assessment of impacts caused by hydropower development on the Se San River, an adjacent Mekong tributary. Last year, SWECO refused to release its draft Se San EIA and its draft Sre Pok EIA, citing commercial confidentiality on the part of its client, EVN.</li> <li>▪ SIDA released the draft Sre Pok EIA (dated February 2006) in May 2006, but only after requests from Cambodian NGOs and the media. SIDA/NORAD failed to make disclosure of the Sre Pok EIA and the National Hydropower Plan an explicit condition of funding.</li> <li>▪ The Sre Pok EIA was presented in “final” form at a SIDA/NORAD-sponsored workshop in Phnom Penh in January 2007, also prompted by requests from Cambodian NGOs. The “final” report failed to incorporate Cambodian comments on the draft or register local opposition to dam construction on the Sre Pok, as is required by international EIA standards (i.e., Asian Development Bank, World Commission on Dams).</li> </ul>
<p><b>4. [T]he impact assessment should include an analysis of those economic values which are lost through deteriorated opportunities for fishing, agriculture, hunting and other types of natural resources use.</b></p>	<ul style="list-style-type: none"> <li>▪ The Sre Pok EIA does not include an analysis of economic losses due to the dams’ negative impacts on downstream fishing, agriculture, hunting and other types of natural resource use (i.e., non-timber forest products, nature tourism).</li> </ul>
<p><b>5. Project-generated benefits shall be directed</b></p>	<ul style="list-style-type: none"> <li>▪ The Sre Pok EIA does not propose or include analysis of</li> </ul>

<p><b><i>to those who are negatively affected. This analysis should be done in close cooperation with the affected local population and in good time before the decision to start construction. The result of the analysis shall form the foundation for a compensation agreement and for calculation of the economic returns of the dam.</i></b></p>	<p>project-generated benefits directed to affected local communities.</p> <ul style="list-style-type: none"> <li>▪ No consultation with affected people was conducted before dam construction began on the Sre Pok. Buon Kuop dam construction began on Sre Pok tributary in 2003; SWECO did not start work on the Sre Pok EIA until late 2005.</li> <li>▪ The report contains no analysis for developing compensation agreements, and no calculation of economic returns for any of the dams under construction on the Sre Pok.</li> </ul>
<p><b><i>6. When negative impacts cannot be avoided, satisfactory compensatory measures should be taken. Compensation and benefit-sharing agreements shall be completed before the decision to start construction.</i></b></p>	<ul style="list-style-type: none"> <li>▪ The Sre Pok EIA fails to propose compensation and benefit-sharing agreements beyond general recommendations that such things should be worked out at some undefined point in future. As such, the EIA fails to meet the needs and expectations of Cambodians threatened with lost livelihoods, loss of food security, and increased safety risks in the coming months and years.</li> <li>▪ The Sre Pok EIA does not reference Vietnamese or other international standards for compensating people affected by state-financed development projects. Cambodians therefore have no relevant information from the Vietnamese side or elsewhere in the Mekong region, on which to develop their case for fair compensation. This omission suggests SWECO is either unfamiliar with compensation experience in the region or uninterested in increasing project costs for its client.</li> <li>▪ SWECO missed the opportunity to inform Cambodian and Vietnamese stakeholders about compensation packages offered by dam builders on other Mekong tributaries i.e., the Pak Mun dam in Thailand. As of March 2000, six years after the 136-MW dam was completed on the Mun, a large Mekong tributary in northeast Thailand, Thailand’s electricity generating authority (EGAT) paid 6,200 Mun river fishermen a total of US\$19.5 million in compensation for fishing income lost due to the dam’s negative impact on migratory fish species. This amount covered income losses for three years during dam construction only. Thousands more people lost income but were not compensated. Mitigation for the long-term loss of fisheries livelihoods along the Mun River has yet to be resolved (World Commission on Dams Case Study, 2000).</li> </ul>
<p><b><i>7. Since large water infrastructure projects, among them dams, seriously affect ecosystems, the project planning must be directed to the minimization of negative</i></b></p>	<ul style="list-style-type: none"> <li>▪ SWECO and Electricity of Vietnam did not consult or inform downstream Cambodians about the dam site selection process, neither as part of the National Hydropower Plan nor the Sre Pok EIA.</li> </ul>

<p><b><i>impacts on the environment – in particular, irreversible impacts – through careful site selection and environmental impact assessments in accordance with international standards.</i></b></p>	<ul style="list-style-type: none"> <li>▪ SWECO fails to include a description of Vietnamese EIA standards and procedures that apply to hydro development projects within Vietnamese territory.<sup>3</sup></li> <li>▪ International standards for environmental impact assessments require a description and cost estimate of feasible mitigation measures. The Sre Pok EIA recommends a number of mitigation strategies without establishing cost or technical and economic feasibility or public acceptability.</li> <li>▪ SWECO recommends further study of fish ladders and other bypass systems, implying that such measures could mitigate the expected damage to migratory fisheries caused by Sre Pok dams. SWECO’s recommendations lack credibility in light of regional experience: a fish ladder was constructed after completion of Thailand’s Pak Mun dam at a cost of US\$80,000; it has never performed as claimed and does not allow upstream fish migration. By 2000, the authorities had discontinued monitoring the fish ladder (World Commission on Dams Case Study, 2000).</li> <li>▪ SWECO recommends fish stocking as a long-term measure to cope with declining fish populations, without providing evidence that this has worked elsewhere. Between 1995 to 1998, Thailand’s power utility spent between US\$30,000 and US\$40,000 stocking the channel upstream of the Pak Mun dam with fresh water prawns. But the prawns spawn in salt water and migrate to fresh water therefore are not suited to reservoir conditions. According to the World Commission on Dams’ experts, it is doubtful whether or not any fishing income was generated from this stocking program. The program has since been discontinued. (WCD, Pak Mun Case Study, 2000).</li> <li>▪ SWECO’s practice of recommending further studies without reference to cost or feasibility or international experience – particularly at this advanced stage of hydro development along the Sre Pok – is irresponsible.</li> </ul>
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<p><b>8. Projects shall avoid significant negative impacts on areas which are protected by legislation and/or international agreements and conventions.</b></p>	<ul style="list-style-type: none"> <li>▪ The Sre Pok EIA acknowledges that Sre Pok dam construction and operations will affect river flow in nationally-designated protected areas in Cambodia: Lumphat Wildlife Sanctuary and Mondulkiri Protected Area. No further analysis of impacts on habitat and wildlife is presented.</li> <li>▪ EVN’s Buon Kuop EIA report (obtained by Cambodian NGOs from the Cambodian National Mekong Committee) recommends maintaining a minimum flow downstream of the dam to protect tourism revenue from nearby waterfalls. The Sre Pok EIA makes no reference to this nor does it provide any related analysis on the Cambodian side.</li> </ul>
<p><b>9. Optimisation of the potential investment calls for the implementation of thorough sediment transport studies in the water course. These studies shall build upon a good understanding of the sediment-transport dynamics, and shall serve as the basis for prevention of unwanted sedimentation.</b></p>	<ul style="list-style-type: none"> <li>▪ No sediment transport studies have been carried out for the Sre Pok EIA or as part of the National Hydropower Plan.</li> <li>▪ SWECO has effectively preempted further studies of sediment transport by recommending a re-regulating dam near the border as its main mitigation strategy. SWECO fails to substantiate its claim that a re-regulating dam will eliminate downstream erosion problems. Its recommendations for dealing with unwanted sedimentation in upstream reservoirs lack credibility without information about cost, feasibility, and implementation.</li> </ul>
<p><b>10. The need for safety is provided for by design, operation, permit control and maintenance of dams and their discharges. Further, the operational regime must be analysed in regards to the safety of people residing within the project affected areas.</b></p>	<ul style="list-style-type: none"> <li>▪ The SWECO EIA fails to present information about design, operation, permit control and maintenance of dams and their discharges, as they relate to downstream safety concerns. No analysis of the operating regime of individual projects or the entire cascade, or definition of accidental flooding, is provided in terms of downstream safety, beyond reference to a 1988 US guideline for the definition of hazardous water fluctuations. SWECO provides no analysis of the experience with accidental flooding and hazardous water fluctuations downstream of Se San dams.</li> </ul>
<p><b>11. Countries with shared water resources need to agree on how these resources can be optimized for the common benefit of all partners.</b></p>	<ul style="list-style-type: none"> <li>▪ SWECO’s NHP has proved a one-sided exercise in hydro planning for Electricity of Vietnam, without optimization for the benefit of all stakeholders, including Cambodians.</li> </ul>
<p><b>12. For a transboundary water project, an agreement must be established between the</b></p>	<ul style="list-style-type: none"> <li>▪ The Nordic-funded National Hydropower Plan Stage 1 and 2 identifies six potential hydro dam sites along the</li> </ul>

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<p><b><i>affected countries at the government level, which considers the following matters:</i></b></p> <p><b><i>That Environmental Impact Assessments, Social Impact Assessments and other project documents shall assess the potential effect of the facility also on other countries in the drainage basin.</i></b></p> <p><b><i>How information on the facility’s technical data and operational policy shall be made available to concerned authorities in countries within the drainage basin.</i></b></p> <p><b><i>How functioning warning systems for sudden changes in operation, accidents etc. which affect the rivers’ discharge shall be established, understood and monitored.</i></b></p> <p><b><i>Establishment of conflict resolution mechanisms.</i></b></p>	<p>Sre Pok river on the Vietnamese side. Social and environmental impacts on the downstream Cambodian side of the river were not considered in the NHP study.</p> <ul style="list-style-type: none"> <li>▪ EIAs for Sre Pok hydro dams prepared by Electricity of Vietnam do not include impact assessment in downstream Cambodia.</li> <li>▪ No working agreement on sharing of technical data and operational policy for each dam facility on the Sre Pok river has been worked out with Cambodia, even though four dams are under construction.</li> <li>▪ The Sre Pok EIA recommends a flood warning system be implemented without elaborating on cost, experience along the Se San, feasibility, implementation, monitoring procedures etc.</li> <li>▪ The Sre Pok EIA provides no information about conflict resolution mechanisms or whether Vietnam and Cambodia agree with the need to use or implement such a mechanism, and under what circumstances.</li> </ul>
<p><b><i>An environmental impact assessment (EIA) – including a zero-alternative analysis – shall be conducted before the decision to start construction.</i></b></p>	<ul style="list-style-type: none"> <li>▪ The EIA is incomplete: SWECO provides an incomplete analysis of different operating scenarios; no analysis of alternative locations, designs, and non-hydro alternatives for meeting Vietnam’s peaking power objectives. As a result of SWECO’s narrowly focused NHP and EIA, Cambodians and Vietnamese stakeholders are now locked into a one-sided hydro development plan, without the benefit of an assessment of viable options, without evidence of economic viability, without an optimization of benefits on both sides of the river, and without a plan for downstream compensation and environmental mitigation.</li> </ul>

### **3.1 SWECO’s Conflict of Interest**

Citizens groups and Asian Development Bank consultants have raised concerns about SIDA’s judgement in handing SWECO the Sre Pok EIA contract, knowing that the company has a conflict of interest as EVN’s longtime hydro planner and contractor (See Appendix 1 and 2). In earlier studies carried out for Electricity of Vietnam, SWECO downplayed as insignificant the transboundary impacts of hydro development along the Se San, another large Mekong tributary shared by Vietnam and Cambodia. SWECO’s failure to warn its client about the potential safety threats and environmental damages arising from operations at the 720-MW Yali Falls dam would likely be grounds for legal action against the company in jurisdictions other than Vietnam and Cambodia. In Cambodia, dam-affected citizens have no such legal recourse.

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## Endnotes

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<sup>1</sup> Amounts of SIDA and NORAD funding for Stage 2 of the National Hydropower Plan in Vietnam confirmed by Digerud Kirsti Mette, First Secretary, Royal Norwegian Embassy, Hanoi, in an E-mail to Grainne Ryder, Probe International, 13 February 2007.

<sup>2</sup> Vietnam's 2005 Law on Environmental Protection (which came into effect July 1, 2006) specifies the following:

*During the EIA preparation process, comments and feedback from commune-level People's Committees (PCs) and representatives of local communities within the project area as well as opposition to project implementation or environmental protection measures must be incorporated as key contents of the EIA report;*

*During the EIA appraisal process, local organizations, communities and individuals are entitled and encouraged to provide comments, feedback and requests on environmental protection issues to the project appraisal and approval authorities. The project appraisal and approval authorities are then responsible for taking into account all these comments, feedback and requests before any conclusion/decision is made;*

*The approval of the EIA report must be reported to the local PC where the project will be implemented. Information on waste types, treatment technologies, environmental standards and environmental protection measures must be made public and posted at the project site for the purpose of public access, inspection and supervision.*

## **5. APPENDICES**

### **APPENDIX 1: ASIAN DEVELOPMENT BANK REPORT FAULTS NORDIC HYDRO CONSULTANTS IN VIETNAM'S DAM TRAGEDY**

Probe International, Press Backgrounder, [www.probeinternational.org](http://www.probeinternational.org), October 3, 2003.

SWECO could have predicted the catastrophic damages caused by Vietnam's Yali dam but SWECO – Sweden's largest engineering consulting firm and Vietnam's longtime hydro advisors – failed to do so, according to a leaked Asian Development Bank report.

Large spills from the Yali dam killed approximately 25 people in 1999 and 2000, while thousands more are suffering recurring damage to their crops and property several hundred kilometres downstream in Cambodia.

The report ([Vol 1](#), [Vol 2](#)) by ADB consultants, Worley International and Lahmeyer International (Germany), states that Yali discharges transformed the Se San River into a "lethal turbulent channel in which people *cannot survive* . . . . People being swept down rocky chutes suffer numerous violent collisions with rocks which eventually kill them, or leave them too damaged to swim, so that they drown even in the relatively calm waters downstream of the chute." [Emphasis added by Worley]

Yali is "gradually damaging the downstream production systems and ecology and causing considerable difficulty for people living close to the river," the report says, damages for which "[Electricity of Vietnam] and the Yali Hydropower Project Management Board will be considered liable."

### **SWECO gave incomplete warning**

The report also criticizes EVN's consultants, SWECO, for underestimating the downstream effects of Yali and subsequent Se San dams in earlier studies.

**"Although the general consequences of reservoir filling, commissioning, seasonal flow regulation, and peaking operation of Yali and Se San 3 were predictable," writes Worley, "previous studies gave incomplete warning of them."**

Worley's report is part of the Asian Development Bank's 2000 appraisal of Se San 3, a second dam recommended by SWECO in 1999, the year Yali began operating.

**"It would have been a simple step," the report states, "to appreciate that closure of the main Se San river at Yali or Se San 3 dam sites for 14 or 18 hours daily, or for longer periods. . . would have critical impacts on downstream populations and ecosystems."**

According to Worley, **"[SWECO's] belief that negative impacts of intermittent discharges will extend only 20 kilometres below the dam, even for a 6 hour closure of the turbine flows, is unfounded, and no experienced consultant could hold it."**

Worley also points out SWECO wrongly assumed only a few houses existed downstream of the dam sites. Worley estimates 1,400 houses are located within the first 100 kilometres of the sites, and that 2,500 households are entitled to immediate cash compensation for damages.

Worley describes SWECO's analysis of Se San 3 impacts as **"bad science" and its assumptions "unrealistic."** "A wider and more scientific analysis, less dedicated to a single site [Se San 3] and, dare one say, future consultant engineering work" is needed.

### **SWECO's hydro planning approach promotes conflict between water users**

Worley concludes that SWECO's overall approach to hydro planning is flawed: **"SWECO's ranking of Projects is a mere shuffling of cards . . . It does not represent a sound basin wide strategy for using water or other resources, and will lead to serious conflicts between water users within the basin in Vietnam, and between Vietnam and Cambodia."** Worley's report, classified confidential by the Asian Development Bank, recommends that Electricity of Vietnam take immediate steps to improve public safety and prevent recurring damages downstream.

SWECO, meanwhile, has won contracts for work on the Se San 3 dam and EVN's National Hydropower Plan. Yali and Se San 3 are two of six large-scale hydro dams planned for the Se San River, a major Mekong tributary flowing from Vietnam's central highlands through northeast Cambodia.

Data illustrating rapid fluctuations in river flow 110 kilometres downstream of the Yali dam as of January 2003, is posted on the Australian Mekong Resource Centre/University of Sydney's Web site at [www.mekong.es.usyd.edu.au](http://www.mekong.es.usyd.edu.au) (under Case Studies/Se San).

## **APPENDIX 2: ELECTRICITY OF VIETNAM'S 'MANAGEMENTAL RECKLESSNESS' THREATENS PUBLIC SAFETY: ADB REPORT**

Probe International, Press Backgrounder, [www.probeinternational.org](http://www.probeinternational.org), September 23, 2003.

A leaked Asian Development Bank report ([Vol 1](#), [Vol 2](#)) warns Vietnam that major operational changes are needed to ensure public safety downstream of the country's second largest hydro dam.

The report by ADB consultants, Worley and Lahmeyer, confirmed that the filling of the Yali dam reservoir and the commissioning of its turbines had "inflicted unacceptable levels of impact on downstream societies and habitats," and that its operating regime was "dangerous in the short term."

"Operations of the [Yali] spillway gates have, over the last 15 months, transformed the natural river flow pattern to an unpredictable and dangerous series of discharges," reported Worley in April 2000.

Large spills from Vietnam's Yali dam killed and injured dozens of people in 1999 and 2000, and swept away property, livestock, and crops in dozens of communities downstream in Vietnam and Cambodia. The dam owner, Electricity of Vietnam, has compensated none of the victims.

The consultants also report that the Yali spillway is too small to safely pass a large flood and had already been damaged, presumably by large spills in 1999. Without adequate spillway capacity, water cannot be released from the Yali reservoir fast enough, thus increasing the risk of dam failure and life-threatening floods.

The Worley report criticizes EVN for its "managerial recklessness" and makes detailed recommendations "to ensure that [Yali] is operated safely and responsibly, meeting international standards."

Electricity of Vietnam was advised to immediately:

- change the dam's operating regime to mirror the river's natural flows until an optimal operating regime is developed by Vietnam and Cambodia.
- assess short term damages caused by spills from January 1999 "to the time they are brought 'under control' to the satisfaction of representatives of downstream residents in Vietnam and Cambodia."
- compensate "all persons who have suffered losses, injury, dislocation of activities, reduction of food production, inconvenience etc.;" and
- setup a discharge warning system "to prevent further tragedies."

Worley's recommendations formed part of the Asian Development Bank's appraisal of Se San 3, a second dam now under construction 20 kilometres downstream of Yali. The US\$264 million Se San 3 project was to be the Bank's first and model hydro investment in Vietnam. But following Worley's report, the Vietnamese government reportedly told the Bank that it no longer needed ADB assistance to proceed with the project. EVN secured Russian funding instead and began construction last year.

### **EVN and Yali Hydropower Project Management Board will be considered liable**

The US\$1.2 billion Yali dam is the first in a series of large hydro dams planned for the Se San River with funding from the Asian Development Bank.

The Se San is a large Mekong tributary flowing from Vietnam's central highlands through northeast Cambodia, the lifeblood for farming and fishing communities along its banks.

**END/PI**