

**ALLEVIATING DAM IMPACTS  
ALONG THE TRANSBOUNDARY SE SAN RIVER  
IN NORTHEAST CAMBODIA**

***A Review of the Rapid Environmental Impact Assessment on the  
Cambodian Part of the Se San River due to Hydropower Development in  
Vietnam (July 2007 version)***



**Review and comments prepared for  
The River Coalition in Cambodia (RCC), Phnom Penh  
February 2008**

**សម្ព័ន្ធនិរ្តេកម្ពុជា**  
**River Coalition  
in Cambodia**

# សម្ព័ន្ធនិរ្តេកម្ពុជា

សម្ព័ន្ធរវាងអង្គការសង្គមស៊ីវិលនានាដែលធ្វើការដើម្បីការពារ និងស្តារ ឡើងវិញនូវប្រព័ន្ធអេកូឡូស៊ីទន្លេ និងជីវភាពដែលពឹងផ្អែកទៅលើទន្លេ នៅក្នុងប្រទេសកម្ពុជា

## Rivers Coalition in Cambodia

An Alliance of Civil Society Organizations Working to Protect and Restore River Ecosystems and River-based Livelihoods in Cambodia



*The mitigation and enhancement measures will be carried through the Committee for Water Utilization on the Se San River. This committee was established under the Cambodian National Mekong Committee and Vietnam National Mekong Committee and is regulated by an agreement between the two countries on water utilization for the Se San and Sre Pok rivers.*

(Se San EIA, July 2007)

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## 1: Introduction

We have reviewed the following reports:

1. ***Rapid Environmental Impact Assessment on the Cambodian part of the Se San River due to hydropower development in Vietnam***, Final Report, July 2007; and
2. ***Environmental Impact Assessment on the Cambodian part of the Se San River due to hydropower development in Vietnam***, Final Report, December 2006.

Both EIA reports were prepared for the project owner and developer, Electricity of Vietnam, by Nordic engineering consulting firm SWECO Groner in association with the Norwegian water institute, NIVA, and two other Nordic-led consulting firms working in Vietnam, ENVIRO-DEV and ENS Consult. Hereafter, we will refer to the July 2007 version as “the EIA report.”

We submitted our review of the EIA report dated December 2006 to the relevant Cambodian and Vietnamese authorities for their consideration in July 2007. **[Link to this report on NGO Forum website.]** We subsequently received the final EIA report dated July 2007 and re-labeled as a ‘rapid environmental impact assessment.’ We found no substantive changes to the latter version.

The purpose of this EIA review is not to ask for ‘improvements’ to the Se San EIA report. With three large hydro dams now in operation on the upper Se San (Ialy, Se San 3 and Se San 3A), and two more under construction (Se San 4 and Pleikrong), the focus now should be on mitigation and compensation for affected communities in downstream Cambodia.

It has been more than 10 years since Electricity of Vietnam (EVN) began building the Ialy hydro dam on the upper Se San – a major Mekong tributary shared by Vietnam and Cambodia. Today, Ialy, Se San 3, and Se San 3A dams are generating electricity for power consumers in Vietnam while the dams’ worst environmental effects downstream remain uncompensated and unmitigated. The EIA report confirms that Ialy’s operations have significantly disrupted the Se San River’s flow in downstream Cambodia where more than 28,000 people depend on the river for their drinking water, irrigation, fishing, livestock-watering, and transportation.

To advance informed discussion and remedial action, the following report provides a summary and review of the dams’ downstream impacts and the EIA’s recommendations for mitigation and compensation.

With this EIA review, the merits of the EIA’s recommendations, and Cambodia’s priorities for alleviating dam impacts, warrant further discussion among Cambodian stakeholders, including affected communities in Ratanakiri province, with assistance from the Committee for the Utilization of the Se San River, and the UN-supported Mekong River Commission.

## 2: Summary of Se San Dam Impacts in Downstream Cambodia

The EIA report states that river flows in downstream Cambodia will be higher than normal in the dry season and lower than normal at the onset of the wet season followed by prolonged flooding – as a result of upstream dam operations. For downstream communities, this means:

- less land available for river bank agriculture during the dry season
- inadequate water supply for rice production at the onset of the rainy season
- a higher risk of flood damage to crops and other property during the rainy season; and
- substantially reduced fish catches.

Table 1 provides a more detailed summary of the downstream impacts identified in the EIA report.

**Table 1: Downstream Impacts of EVN Dams on Upper Se San River**

<b>IMPACT</b>	<b>DESCRIPTION</b>
<b>Loss of life, property, livelihoods, and habitat</b>	The Se San EIA report confirms that Ialy dam releases between 1999 and 2000 were large enough to cause significant impacts along the Se San far down in Cambodia including loss of life, property, livelihoods and habitats in Cambodia. [EIA, 69]
<b>Malnutrition</b>	<i>In the long run, malnourishment, especially for the growing children . . . deterioration of health status is expected unless viable alternative protein sources to fish can be introduced and riverbank vegetables can be replaced by other species.</i> [EIA, 143]
<b>Loss of wet season rice production</b>	<i>Rice production has been negatively effected due to too much water during floods and low water levels at the onset of the wet season.</i> [EIA, 140]
<b>Reduced fish catches</b>	<i>Reduced fish catches (10 to 30 percent of previous catch) due to reduced stocks. The Ialy hydropower [dam] is a major cause of the decline.</i> [EIA, 139]  <i>There is no doubt that the existing and planned regulation schemes in Vietnam will lead to eradication of several species of fish and other water living organisms in the Se San River.</i>

	<p><i>Large catfish, mussels and crabs have disappeared because deep pools in river filled with sediment since Ialy started operating. [EIA, 20]</i></p> <p><i>It is assessed that the Ialy regulation has reduced the fish stock, fish size and species composition in Se San River to levels where the fisheries can no longer supply the population along the river with the necessary amount of protein. This has been reported by all the people interviewed during this study, and confirmed by fewer fish from Se San River in the fish market in Ban Lung. . . . ten years ago Se San River was the main source of fish at the fish market in Ban Lung but now fish come from the Mekong at Kratie. [EIA, 139]</i></p>
<b>Food security at risk</b>	<p><i>As fish catches have decreased, food security is already at risk. [EIA, 186]</i></p> <p><i>At present there is no alternative daily protein source to fish. Villagers cannot afford to eat meat. Livestock is kept for selling in order to generate cash, and cannot be consumed. [EIA, 143]</i></p>
<b>Loss of fish protein</b>	<p><i>The local residents can no longer subsist only on fish as protein source [due to reduced catches] and have to use more livestock animals as food or develop aquaculture. [EIA, 140]</i></p>
<b>Loss of river bank agriculture</b>	<p>River bank agriculture is highly reduced at present due to the high water level fluctuations and flood episodes, and weak bank slopes. Backyard gardening is also hindered due to the unpredictable water level situation. A general abandoning of riverside agriculture areas may be increasing. River related vegetation used by local communities for food is reduced. [EIA, 140]</p>

<p><b>Reduced availability of plants for food and medicine</b></p>	<p><i>. . . erosion has reduced the availability of wild growing riverbank species, which previously were collected for food and medicine. [EIA, 142]</i></p>
<p><b>River bank erosion caused by daily fluctuations in river flow</b></p>	<p><i>The daily variation of water flow and water level will cause erosion on a long stretch of the downstream river. The impact will be most significant during the dry season. . . . In the long run, the river bank, trees and bamboo will slide into the river; the banks become more vertical and prone to large scale erosion during flood periods. The increased steepness and inorganic character of the changed river bank will make it less suitable for river bank gardening than before. [EIA, 145]</i></p> <p><i>River banks are more vulnerable to slippage and erosion due to the water level fluctuations. There are more steep bare river bank slopes at present than before; this is due to bank slippage. [EIA, 140]</i></p>
<p><b>Reservoir erosion and downstream turbidity</b></p> <p><b>Turbid water unfit for household consumption</b></p> <p><b>Increased transportation risks</b></p>	<p><i>First, the sides of the dam reservoirs are eroded. Most of this eroded material will settle to the bottom of the reservoirs but the fine silt and clay will be transported downstream, making the water turbid. This erosion will create downstream problems only during the first 10 years of operation. [EIA, 145]</i></p> <p><i>Turbidity<sup>1</sup> was a problem during the first years of Ialy operation, villagers could not use the water for washing; the water is now starting to be turbid again in Cambodia due to construction works related to the new projects in Vietnam. [EIA, 139]</i></p> <p><i>During floods the water has a red colour and is turbid . . . often smells bad and is muddy. . . [EIA, 142]</i></p> <p><i>More dangerous boating due to turbid water (difficult to see submerged rocks). [EIA, 140]</i></p>

<sup>1</sup> **Turbidity** is a measure of water cloudiness caused by the amount of suspended matter in the water. Turbidity negatively affects drinking water quality and fisheries.

<p><b>Loss of fisheries habitat linked to dam-induced erosion/siltation</b></p>	<p><i>It should be noted that even if the water level fluctuations in the central and lower part of the Se San River in Cambodia is low, the erosion from further up will be transported downstream and will settle in the deep pools in the dry season. Slowly these deep pools will become shallower and their important ability to serve as dry season fish refuges will be reduced. [EIA, 145]</i></p>
<p><b>Increased pressure on upland forests</b></p>	<p><i>. . . riverbank cultivation land has been lost due to flooding and erosion, and pressure for more cultivation land higher up from the river has increased. [EIA, 186]</i></p>
<p><b>Riverine ecosystem disrupted</b></p>	<p><i>Irregular fluctuations in the Se San River have seriously affected riverine vegetation, birds, reptiles and various aquatic life cycles that are dependent on the natural rhythm of the river. [EIA,13]</i></p>
<p><b>Fish migration (in Se San, between Se San and the Mekong) disrupted</b></p>	<p><i>For many species it is the first flow increase in the beginning of the rainy season that triggers the migration. These triggering flows are often delayed and reduced in regulated rivers with reservoirs. The first part of the rainy season is used for filling the reservoirs. . . . The filling of the reservoir may delay the reaching of this flow size [to make natural falls passable] by considerable time, resulting that the fish is not able to reach their destination in time, e.g. a spawning ground. . . . spawning migration is often hampered by lack of triggering flow or by too low flow throughout the migration period for the fish to reach their spawning ground. [EIA, 149]</i></p>

## **Public Health Risks**

### **Toxic algae linked to Ialy reservoir**

*It seems very likely that during the first 2-3 years (1998 – 2000) after filling the [Ialy] reservoir there have been incidents with toxic blue green algae which have given rise to water quality problems in Se San River in Ratanakiri. [EIA, 136]*

*The water quality data in this study found low concentrations of algal toxins in the Ialy Reservoir. The study did show that the water harbored the algal species microcystis sp that are known to produce toxins called microcystins. The long term impact of microcystins is that they slowly limit liver function, and may become lethal in combination with other liver diseases e.g. hepatitis. [EIA, 135]*

Note: Levels of microcystin in river water tested at Phum Phi and Veun Sai in December 2005 were below detection limits. However, sampling was not done during the high-risk period when the river is at greatest risk of contamination, from April to May. Sampling in the dry season is required. [EIA, 135]

*Based on the analyses of water and algal samples both from Vietnam and Cambodia as well as from interviews algae may have developed in the river downstream of Ialy due to the release of nutrient rich bottom water from the Ialy Reservoir. There are some tropical/semi-tropical filamentous blue-green algae of the genus Lyngbya (cf woolei) that can give exactly the same symptoms as described. The water can be toxic and produce itchiness. Drinking the water containing this species gives respiratory problems, headache and stomach ache. This species can grow both in reservoirs and rivers, and develop during periods of bright sun and warm weather. Blooms of this alga can kill fish. In the survey in Nov/Dec 2005 algal toxins were found in the Ialy reservoir but not in the downstream river.*

### **Respiratory problems and death**

*The symptoms described by local people after drinking water from the Se San can be caused by blue-green algae species. The blue-green algae can produce 2 types of toxins, hepatotoxins (attack the liver) and neurotoxins (attack the nervous system). Neurotoxins can cause death some minutes after ingestion while hepatotoxins often take hours to days before death occurs. In both cases, respiratory problems are the most common direct cause of death. [EIA, 135]*

*The itchiness from bathing and swimming in the Se San can arise from several algae. Most common species are the blue-green algae Cyanophyceae and Chrysophyceae. These algae have body-surface sacks containing irritable liquids which burst when one comes in contact with them. [EIA, 135]*

### **Toxic algal problems expected in new reservoirs**

*. . . in the first 5 to 10 years when the nutrients are released from decomposing organic litter from the inundated terrestrial areas, the reservoirs can be more eutrophic and can have blue green algal problems in periods. This is most likely to happen towards the end of the low flow period (April – May).*

*Future [dams] will inundate new terrestrial areas and will create nutrient rich water in the downstream river for a period of 5 – 10 years after the regulation. This may produce new algal problems. [EIA, 148]*

*The new reservoirs under construction can trigger a new period of nutrient rich water that can enhance concentration of problem algae. . . same impacts may appear again due to the new dams under construction. [EIA, 138]*

### **3: Review of the EIA Recommendations On Downstream Mitigation and Compensation**

<b>Recommended Mitigation Measure</b>	<b>EIA Description</b>
<b>1. Se San 4A re-regulating reservoir (Vietnam-Cambodian Border)</b>	<p><i>This measure will level out the diurnal flow variations and is the most important mitigation measure for existing and future developments. The flow out of Se San 4A should be as equal to the natural flow as possible. [EIA, 15]</i></p> <p><i>Daily fluctuations will be mitigated when the Se San 4A regulating reservoir will be commissioned. [EIA, 70]</i></p> <p><b>(See Final Remarks)</b></p>
<b>2. Operational Changes to Reduce Downstream Fluctuations/Erosion and Improve Overall River Conditions</b>	<p>The EIA recommends a set of operation rules for the turbines and spillways to minimize fluctuations in water levels . . . <i>and in general to follow the natural runoff pattern. [EIA, 60]</i></p> <p>Power companies in Norway and Europe are obliged as part of their [operating] concession to release triggering floods for migratory fish (i.e., salmon and trout). [EIA, 149]</p>

<p><b>3. Monitoring Impact of Operations on Water Quantity and Quality Downstream</b></p> <p><b>Optimum releases</b></p>	<p><i>Special attention in the first years of operation should be paid to the impact of the minimum release and the operating regime of the hydropower plant i.e. effects of peaking production on the downstream aquatic life. In particular an assessment will be required of minimum release and the adequacy for maintaining aquatic habitat and fish species. [EIA, 181]</i></p> <p>The EIA recommends monitoring to “determine the optimal minimum release strategy” to maintain water levels that can sustain aquatic life, wildlife and riparian vegetation. [EIA, 181]</p>
<p><b>4. Water Quality Monitoring</b></p> <p><b>Algal monitoring/information campaign to alert public to health risks</b></p>	<p><i>The water should be monitored for nutrients, algal species composition and algal toxins for some years after the dams are operating. [EIA, 148]</i></p> <p><i>Water samples should be taken every month. The water quality sampling in Cambodia could be performed by the Ministry of Water Resources and Meteorology (MOWRAM) staff in Ban Lung and sent by plane to Phnom Penh for analysis. The sampling in Vietnam could be done by personnel in Ialy Hydropower Plant and the samples could be sent to Ho Chi Minh city, Da Nang or Hanoi for analysis.</i></p> <p><i>An algal monitoring program should be established which could reveal any problems as well as an information campaign that informs the people about the danger of drinking water with high algal content. A toxic algal bloom can develop within 2-3 days and a warning system should be established. [EIA, 148]</i></p>
<p><b>5. 5 Main Proposed Measures to Mitigate Impacts due to Dam Operations</b></p>	<p><i>The main measures to mitigate impacts from Ialy Hydropower Project and from the operation of future hydropower development in Se San river are:</i></p> <p><i>(1) Establishing Se San 4A as a re-regulating reservoir.</i></p> <p><i>(2) Establish an early warning system for spillway releases and sudden flows.</i></p> <p><i>(3) Prolong the wet season filling of the reservoirs.</i></p>

	<p><i>(4) Reduce the nutrient inputs to the rivers and reservoirs.</i></p> <p><i>(5) Consider establishing a fish stocking program and develop a program for aquaculture. [EIA, 15]</i></p>
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**6. EIA Recommendations for ‘Social Compensation’**

The EIA report makes seven recommendations for mitigating impacts on downstream livelihoods, food security, living standards, and general well-being at the community and family level. The consultants believe these “alternatives for social compensation” are preferable over the long run to “one time cash payments.”

The first 4 recommendations are intended to “serve as compensation for the loss of food, livestock and land, and thus income:”

- 1) setting up an aquaculture program
- 2) developing alternatives in a livestock breeding and/or poultry program
- (3) developing alternatives for crop management and secondary crop initiatives; and
- (4) starting and enhancing community based forest management or social forestry programs.

Recommendations 5 to 7 “will enhance living standards and general well being, contributing both directly and indirectly to health improvement:”

- (5) introduce electricity supply
- (6) establishment of drinking water and sanitation system
- (7) improving the health care system

**7. Public Consultations**

Recommendations for involving stakeholders in the Se San downstream area –*The following groups should be involved in the stakeholder consultation process. [EIA, 16]*

- (1) directly affected people living in the riverside villages*
- (2) indirectly affected people living in the adjoining areas*
- (3) people utilizing the river for their livelihood activities but not residing along the river*
- (4) women in the directly affected villages*

- (5) *people's organizations*
- (6) *district health care staff and traditional health providers*
- (7) *village and commune chiefs of directly affected areas*
- (8) *district administration representatives*
- (9) *provincial ministries representatives*
- (10) *NGOs working in the affected areas*

***The stakeholder consultation process should lead to measures for mitigating the negative impacts along the Se San River in Cambodia due to hydropower development in Vietnam.***

***Both planning and implementation of mitigation measures should take place in cooperation with and supporting the existing institutional organizations like commune councils and district health centres.***

***Peoples' organizations and NGOs working in the area should be involved in the mitigation activities as well.***

## **8. Implementation of Monitoring**

An "Environment and Community Unit" should have Environmental Monitoring Officers with responsibility *to review all mitigation works and to regularly monitor the impact of the project against a series of indicators and standards. Three levels of monitoring are proposed: regular monitoring, annual review and interim review.*

*During project construction the ECU will conduct regular monitoring, reporting to the project manager on a weekly basis, and reporting immediately when a particular issue or problem arises. This includes monitoring of the contractors, as well as the mitigation and other activities of the project. A monthly progress report and annual report should be submitted to the relevant authorities in Cambodia and Vietnam. [EIA, 181]*

***Responsibility for monitoring lies with the Project Owner (Electricity of Vietnam) but should be discussed with and confirmed by Cambodian and Vietnamese authorities.***

***Hydrological and sediment data collection – project owner is responsible for providing appropriate funding to all studies found necessary. [EIA, 182]***

***Project owner is responsible for establishing and executing a comprehensive monitoring program, subject to the approval of relevant Cambodian and Vietnamese authorities. The project owner should fund all activities in the approved program.***

***Operation phase monitoring – The project owner has overall responsibility for funding and implementation of the monitoring program, and should be developed through discussion with the appropriate authorities in Cambodia and Vietnam.***

## 5: Final Remarks

### 5.1 Next steps – Priorities and decision-making on mitigation and compensation

- Under the 1995 Mekong agreement signed by Thailand, Lao PDR, Cambodia, and Vietnam, Mekong states are obliged to “**make every effort to avoid, minimize and mitigate harmful effects** that might occur to the environment, especially the water quantity and quality, the aquatic (ecosystem) conditions, and ecological balance of the river system, **from the development and use of the Mekong River Basin resources.**” Within this context, all the EIA recommendations for mitigation, consultation, implementation, and responsibility for funding should be carefully reviewed with Cambodian stakeholders in order to set priorities for investment and action.
- Certain downstream impacts, specifically the threat of toxic algae poisoning in the dry season, and severe flooding forcing the relocation of riverside communities should, in our view, trigger Article 10 of the Mekong agreement covering emergency situations. Article 10 states: *Whenever a Party becomes aware of any special water quantity or quality problems constituting an emergency that requires an immediate response, it shall notify and consult directly with the party(ies) concerned and the Mekong River Commission’s Joint Committee without delay in order to take appropriate remedial action.*

### 5.2 Urgent issues

Based on our review of the EIA report and recent statements from affected communities in northeast Cambodia (See Appendix 1), we have identified the following urgent issues:

- **Public health threat due to the risk of toxic algae outbreaks in Vietnam’s newly-filled reservoirs contaminating downstream water supplies.** Immediate and long-term solutions to Cambodia’s water quality problems caused by EVN dams and reservoirs are needed. This could include, for example: the provision of safe drinking water supplies to be brought to at-risk communities along the Se San during the dry season; and investment in water filtration systems and wells in at-risk communities.
- **Flood relief/relocation assistance for households moving upland to escape prolonged flooding and flood damage made worse by upstream dam operations in the rainy season.** Local government agencies, affected communities, and development NGOs could should assess immediate needs and request financial assistance from the project owner, Electricity of Vietnam, via the Committee for the Se San River, the Cambodian National Mekong Committee, and the donor-funded Mekong River Commission Secretariat in Vientiane. (Refer to Article 10 of the Mekong Agreement).

- **Reducing daily water fluctuations and other damaging releases from upstream dams and reservoirs.** The EIA report states that “*Daily changes in the river flow from Ialy hydropower project have had the largest impacts [downstream] and these will not cease unless appropriate mitigation is taken.*” [EIA, 187] The Se San 4A dam is presented as a “re-regulating reservoir” that will effectively reduce the damaging daily fluctuations caused by upstream dams operating as peaking power stations. The EIA reports this was to be completed in August 2007, citing the project owner, Electricity of Vietnam. In fact, Se San 4A will not be completed for another three years and will be operated for power production not re-regulation of river flow. According to *Vietnam News Agency* (January 17, 2008) the Se San 4A project will have three turbines for a total installed generating capacity of 63 MW and will be completed by July 2010. (Vietnam’s Bank for Investment and Development and a Vietnam-Russia Joint Venture are providing the \$75 million investment capital.) What this news announcement suggests for downstream Cambodians is that the damaging fluctuations in river flow will continue unabated – unless EVN is instructed to adjust its operations accordingly.

To inform decision-making on operational changes that can minimize or mitigate downstream impacts, **a complete range of operating scenarios for balancing upstream power production objectives with the need to restore and maintain natural flow conditions downstream should be immediately assessed. Switching from peaking to base load operations at all or any of the upstream dams should be considered an option, drawing on best practices developed by leading power utilities elsewhere.** Funding and technical assistance for this initiative could be provided via the donor-funded Mekong River Commission and the project owner, Electricity of Vietnam.

### **5.3 The policy and practice of operating hydropower stations on transboundary Mekong tributaries should be reviewed.**


Given the indisputably transboundary and damaging effects of hydro dams on the Se San river, combined with the lack of a proper regulatory and legal framework to balance power production objectives with other riparian priorities, the policy and practice of operating peaking hydro plants on transboundary Mekong tributaries should be reviewed, and done so within the context of global best practices and state responsibilities under the Mekong River Commission’s 1995 agreement on cooperation for sustainable development in the Mekong River Basin.



**End/ Se San EIA Review  
February 2008**

**APPENDIX 1: Se San River Update – October - December 2007**  
**Photos and Translation by 3S Rivers Protection Network, Ratanakiri province**



<b>1. Statements from Dam-Affected Community Leaders</b>	
<p>Mr. Jia Put Ty                      Deputy Governor                      Ta Veng District                      Se San River                      (photo above)</p>	<p>“We need a good strategy for planning for the next step. We know Vietnam built the dam and affected the communities in Cambodia. But now we must discuss and have good solidarity and provide comments to the head of the government.</p> <p>I don’t have so much power; my way of living is the same as the communities here. I attended the workshop in Phnom Penh on the Sesan EIA and gave many comments. A representative from the MRC also joined and listened. I raised the problems and what communities need for solutions. If the Vietnam government can’t find a solution for the community and they continue to build the dams, then they should build the roads and transmission lines to give to community. They should also build a notification post. We don’t want to fight them or be mad at them, but we also love our natural resources.”</p>
<p>Mr. Kham Phun Kok                      (Krueng, 54 years old)                       Team Leu Village</p>	<p>“I urge the dam builders in Vietnam to do the following:</p> <ul style="list-style-type: none"> <li>▪ By any way, please make the river as it originally was.</li> </ul>

<p>Veun Sai District Se San River</p>	<ul style="list-style-type: none"> <li>▪ If there are strong rains and you need to release water from dam reservoirs, please timely inform villagers about water releases. So far, notice has been too late to inform the villagers. Usually, the villagers were informed about water releases after the flood. Therefore, an information system should be set up properly, particularly communication by radio should occur.</li> <li>▪ For all the different fish species we have lost, it is time to conduct fish conservation.</li> <li>▪ Compensate us for our damaged and lost properties, such as boats, gill nets and such.”</li> </ul>
<p>Mrs. Chea Sokun (Khmer, 52 years old)</p> <p>Ta Veng District (~85 kilometres downstream from Vietnam border)</p>	<p>“At the beginning of December, the river dried up and we would walk across. Most of the river bed was dried; the river went down to only 10 meters across. It lasted for four or five days and then the water began to rise up slowly until it was at its normal level.”</p>
 <p>Mr. Roman Mleac (Tampuen, 56 years old)</p> <p>Pawdal Village Oyado District (~6 kilometres downstream from Vietnam border)</p>	<p>“I have read the Sesan EIA report [executive summary in Khmer], but I want a workshop to be held so I can understand what it means.”</p> <p>“In August [2007] when we began to harvest rice, the water levels went up and down very quickly. When the water levels rise, there is riverbank erosion and I lose my land. If it still continues, maybe next year I will have to move my house and maybe my whole village will move away from the river. But we have always grown vegetables along the riverbank. It is our tradition. I don’t know what we will do if we have to move.”</p> <p>“The water levels are still changing every day. The water rises in the morning and at night the water falls. When I measure the riverbank, the change is around 6 metres.”</p> <p>On December 5<sup>th</sup>, people in four villages within Oyado district close to the Vietnamese border got sick after bathing in the Se San river. Many people became sick with very itchy</p>

	<p>skin. Some also got fevers and others got sores the size of a thumb print all over their body. The sores lasted for 12 to 13 days. The provincial hospital came to aid the villagers. The villages were Pet, Katal, Small Pawdal and Big Pawdal villages.</p>
 <p>Mr. Bro Nann Tien (Brao)</p> <p>Kalim Village Vuen Sai District (~115 kilometres downstream from the border) Mr. Tien has lived along the Se San river for 30 years</p>	<p>“The river has also changed a lot. In the dry season, there are always floods . . . . The water levels are unusual and go up and down, which makes it very difficult to travel and tie the boat to the post. The water in the river is dirty both in the dry and rainy seasons and when we swim it causes itchy rashes on the skin, especially during the dry season. Almost all the green vegetables growing along the river bank have been destroyed and sometimes trees that people use for food and medicine fall down into the river because of the damage caused on the riverbank [riverbank erosion]. These changes to the river have badly impacted the way we make our living, because when the water goes up and down it tears our fishing mesh and nets. Because the water is polluted in the dry season, it is very hard and dangerous to take water from the river to use. Sometimes I see dead fish floating in the water and do not know the reason why.”</p>
 <p>Mrs. Meuk Nhom (Brao, 57 years old)</p> <p>Koh Pong Village Taveng District Se San River</p>	<p>“At present, villagers are facing a lot of troubles in their lives. They take time to set nets but there are no fish. It is not the same as ten years ago. We also face trouble with our traditions during the last ten years. The river is very important for my culture. We can not bathe in the river and we can not hold any traditional ceremonies on the sandbanks due to fear of flooding. The Sesan also gives trouble to human health. Some fish stock has been lost and growing vegetables along the river bank is now impossible.”</p>

**2. Mr. Thoam Bun Sron (centre front in photo below), National Assembly senator, visited dam-affected villages in Ta Veng district, December 2007.**

