

# An Opportunity to Save New Mexico's Last Wild River

by Allyson Siwik

As water managers and conservationists around the world work to restore impaired river systems, efforts are underway in New Mexico to implement a major water development project on the Gila River, the state's last free-flowing river and one of the few remaining undammed rivers in the desert Southwest. Originating from the nation's first wilderness area, the Gila River supports one of the most important ecosystems in the country, including the largest number of native fish species in the Lower Colorado River drainage and the largest population anywhere of the federally endangered southwestern willow flycatcher.

The 2004 Arizona Water Settlements Act threatens the future of this significant river system by authorizing construction of a major water project that could remove up to 140,000 acre-feet of water every decade from both the Gila River and its tributary, the San Francisco. The Act also provides a federal subsidy of up to \$128 million for construction of a water project. These two rivers already carry less water than they did historically due to the demands of irrigation and mining, as well as a pro-

longed recent drought. Additional withdrawals from this project would degrade and likely unravel the ecological integrity of the Gila and San Francisco rivers. Flow reductions due to global warming may compound the impacts of a project.

Although local communities have not identified a need for this water project, the New Mexico Interstate Stream Commission is moving ahead with efforts to withdraw water from the Gila without examining the range of practical water supply alternatives. The groundwater supply of Silver City, the beneficiary of this project, is estimated to last centuries, even taking into account projected growth. According to a report by the economics consulting firm, ECONorthwest, the construction costs alone of extracting water from the Gila River are 16 times higher than the costs of purchasing currently unused water rights and developing new wells. Even if partially subsidized by federal coffers, it makes no economic sense for local governments to buy infrastructure development that would provide water they don't need and at such high cost.

There is, however, a common-sense approach that can satisfy the future water needs of the region while also maintaining the free flow of the Gila. The Act allows for \$66 million of the \$128 million federal subsidy to be expended for any "water utilization projects that meet a water supply demand." This funding could go to improving municipal conservation, increasing irrigation efficiency, buying water rights, digging new wells, or a host of other practical measures that would meet the future needs of the entire region in a cost-effective manner that conserves these important rivers.

With river systems around the globe increasingly under threat from water development, New Mexico has a rare opportunity to find a balance between human and environmental needs. The \$66 million federal subsidy should be used to meet the region's future water demand at least cost and keep the Gila a wild, free-flowing river. ■

*The author is Executive Director of the Gila Conservation Coalition (www.gilaconservation.org)*

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## Independent Experts Find Amazon Dam Studies Don't Hold Water

by Glenn Switkes

A group of independent experts – including internationally renowned authorities on the Amazon – have found serious errors and omissions in the environmental impact assessment (EIA) for Brazil's massive Madeira River hydroelectric project, a multi-dam scheme proposed for one of the Amazon's most important tributaries. The experts found the EIA to be inadequate, and recommended that additional studies be undertaken to evaluate the project's impacts.

The Madeira River covers about one-quarter of the Brazilian Amazon, and its basin is a treasure trove of biodiversity. The Madeira supports the life of an estimated 750 fish species (including important migrating species), 800 bird species, and other endangered rainforest wildlife, and is home to rubber tappers, Brazil nut gatherers, and fishermen.

The independent experts raised questions about how much land would be flooded, the project's impacts on fisheries and sediment flows, and potential health impacts from the reservoir, among other issues. The studies were commissioned by the Rondônia state Public Attorney's office, and financed by the consortium seeking to build the dams.

Brazil's environmental protection agency, IBAMA, is currently making its final decision on whether or not the project is environmentally feasible, the first step in the dams' approval process.

The Brazilian government is actively promoting the construction of Santo Antonio and Jirau dams on the Madeira River as part of a larger four-dam cascade to generate electricity and permit large commercial barges to navigate 4,200 km up the Madeira to its upstream tributaries in Peru and Bolivia. Critics say the project would not only affect the high biodiversity of the region, but that the Madeira waterway would spur the advance of soy plantations in the Amazon rainforest and surrounding tropical savannas.



Ribeirão Rapids, on the Madeira River. The Lula government has proposed that Brazil and Bolivia join forces to build a dam at this site.

Photo: Glenn Switkes

Among the scientists consulted were José Tundisi, a specialist on freshwater bodies and reservoir management with the International Ecological Institute in São Paulo state, and his colleague, biochemist Takako Matsumura. Tundisi states that the EIA's data on sediment accumulation in the reservoirs is "inconsistent" and "unreliable." The Madeira carries one of the highest volumes of soil, sand, and clay of any river in the world. "Sediment studies should always be undertaken on the river basin level," Tundisi advised.

IBAMA limited the study area to that stretch of the Madeira that the project proponents said would be flooded by the dams. Sediments carry nutrients that fertilize the floodplain and help provide biological conditions for diverse species to flourish. They are considered a problem for dam builders,

because their accumulation behind dams diminishes their effective operational life.

Philip Fearnside, ecologist with the National Institute for Amazon Research (INPA), found that there was insufficient data to back up project proponents' assertions that sediment accumulation in the reservoir would not affect the dam's economic viability. He also found that Jirau Dam would flood a wider area than projected, extending into neighboring Bolivia.

Ronaldo Barthem, of the Goeldi Museum in Belém, and Michael Goulding, of INPA – arguably the world's most preeminent experts on Amazon migratory fish species – warned that under certain conditions, the dams could lead to the extinction of ecologically and economically important fish species such as the *dourada* and *babão*. Besides blocking upstream migrations of adult fish,

*continued on page 10*

# Waiting for Justice

This is an open plea to World Bank President Paul Wolfowitz to take responsibility for the Bank's failed projects, and to make amends to those harmed by its failures.

A 2006 investigation by the Inspection Panel, the World Bank's appeals mechanism, found that a Bank project in Pakistan, the National Drainage Program (NDP), violated six of the Bank's safeguard policies, including those that govern the protection of natural habitats and the resettlement of people. The project's flaws led to the loss of lives and livelihoods and to the large-scale destruction of ecosystems.

The project includes a large drainage canal that transports agricultural effluent to the sea. Breaches in the canal caused polluted waters to flow onto fields and wetlands surrounding the canal. Plants and animals in the wetlands, where 15,000 people live, have died, fish species are declining and drinking water has become salty. Natural disasters, notably the 2003 floods where more than 100 people died and 5,000 animals perished, were compounded by the NDP project, according to the Inspection Panel investigation. Families in Southern Pakistan recount: "Before the floods all of us raised sheep and goats. We had about 500 sheep and 500 goats. All our sheep and goats died. For the last two years our children have not had any milk. They are often sick."

The people affected by the project now demand compensation. They demand that the Bank give grants to those who lost family members in the 2003 floods and to those who lost land and safe drinking water. They demand that the Bank support them in finding alternative livelihoods. They demand the rehabilitation of destroyed ecosystems. And they demand that those responsible for the project's faulty design and implementation be held accountable for the destruction that resulted.

The Bank, however, is not holding anybody accountable for the effects of this project. This wealthy institution, with a mandate from 180 member countries to fight global poverty, does not grant reparations to people who suffer the consequences of its interventions.

The people from Southern Sindh who requested the inspection of their case are stunned by their lack of recourse. "After all these efforts and repeated demands, the poor communities of the area are still waiting for justice. The plan of action prepared by the [World Bank] management to address the issues raised in the inspection request and found correct by the panel of experts seems a joke on the entire accountability mechanism and justice system," the requesters wrote in a response to the World Bank.

Sadly, the situation does not come as a surprise to long-time Inspection Panel observers. "Another strong Inspection Panel report and weak follow-up? There are always problems with the Management response," says David Hunter, an expert in international law. He suggests that the Inspection Panel and its strong reports remain ineffective in part because the panel is not given any role in the follow-up to its recommendations. In the Pakistan case, as in many other previous Inspection Panel investigations, the Panel's work is finished when its report is delivered. It has rarely been given any role in monitoring or follow-up. "Unfortunately, as soon as the Panel's scrutiny ends, the Bank is free to return to business as usual," says Hunter.

Some within the World Bank appear to agree that only a stronger follow-up role for the Panel can fix the broken accountability chain. At a recent meeting in Brussels with Executive Directors of European member states, some told IRN that they had demanded a role for the Inspection Panel in the follow-up to the publication of their Pakistan report. But this does not appear to have been a consensus position within the Bank, and the Inspection Panel continues to be excluded from any follow-up activities to its Pakistan report.

The fact that major World Bank projects have increased poverty and misery, and that there is no recourse for fixing the problems discovered by the Inspection Panel, displays not only a lack of accountability, but is also a corruption of the very spirit of the Bank's mission to reduce poverty.

President Wolfowitz is responsible for the Bank's handling of this case, and for the institutional unwillingness to fix the Bank's broken accountability chain. If he is serious about fighting corruption and building accountable institutions, he needs to make the institution accountable to the people who are affected by its projects and to ensure that the Bank takes responsibility for its actions. Giving the Inspection Panel the responsibility to follow-up on its reports would be an important first step.

Ann-Kathrin Schneider

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# European ECAs May Support Problematic Turkish Dam, Cite China Threat

by Heike Drillisch

**T**he Ilisu Dam, a highly controversial project proposed for the Tigris River in Southeast Turkey, recently got a boost from European governments. Austria, Germany, and Switzerland announced in recent months that they are willing to provide public financial guarantees to the project, if certain conditions are met. Their final decision is imminent. The guarantees will enable companies from those countries to participate in the dam's construction. Concerns raised by NGOs about the project violating international standards have been blithely countered by the argument, "If we don't build it, Chinese companies will – and their standards will be even lower."

At 1,200 megawatts, the Ilisu hydropower project is Turkey's largest dam project. Its location on the Tigris River 60 kilometers upstream from the border to Syria and Iraq has the potential to increase regional tensions between the three countries. Turkey has used existing dams on the Euphrates in the past to cut off downstream flows, and the Iraqi water minister has already voiced great concern over the Ilisu project. More than 55,000 people, mainly ethnic Kurds, will be affected by the project and are unlikely to receive adequate compensation. According to surveys conducted by the local "Initiative to Save Hasankeyf," 80% of them oppose the project. After a decade-long civil war, Southeast Turkey still experiences repeated incidents of social upheaval and severe restriction of freedom of expression. In consequence, the lack of participation by project-affected people in project planning was negligent and in sharp violation of international standards.

In addition, the reservoir will flood hundreds of archaeological sites, including the antique town of Hasankeyf. The habitat of endangered species, like the huge Euphrates turtle, will be lost. Impacts on flora, fauna and the people dependent on the river will be felt far downstream of the dam.

The consortium provided an Environmental Impact Assessment and a Resettlement Action Plan for the project, but both reports were utterly flawed, and prompted extensive comments by non-governmental organisations and independent experts. Even the export credit agencies (ECAs) involved admit that the project does not

meet international standards. They therefore negotiated additional conditions with the Turkish government and granted a preliminary approval for the project in December 2006. The 150 conditions are however being kept secret until the final ECA commitment is given, despite the relevant OECD recommendation demanding the publication of environmental information 30 days before a final decision.

It is obvious that the conditions will not solve the fundamental problems of the project. One of the most controversial aspects of the deal besides the irreversible destruction of cultural heritage is that the project is proceeding without relevant participation of the affected population, or proof that fair and meaningful consultations with neighboring states have been conducted. Also, the ECAs are willing to decide on financing for the dam without a comprehensive environmental impact assessment being in place, as key studies on flora and fauna will only be provided at a later stage – a procedure that would be unthinkable for a project in any of the three countries providing the guarantees.

## The China Threat

In the meantime, Turkey is considering the deployment of 5,000 troops in the region and has issued an ultimatum that it would start a new tender if the ECAs do not give their final approval by the end of March. This is considered a blatant threat to award the contract to Chinese companies.

German ministers have stated already that the competition with China is a relevant factor in their decision. Big business is at stake: Turkey intends to build 500 more dams in coming years. Should Ilisu be "lost" to companies from other countries, future contracts could be in danger as well, at least as long as they need support by export credit agencies. This may explain the ECAs' readiness to stay in a project that was totally flawed from the very beginning and had already failed to move forward in 2002 due to unresolved social and environmental problems.

Ironically, if ECA support is granted, the project will benefit from concessional repayment terms intended for renewable energy projects. These were agreed to by the Organisation for Economic Co-operation and Development (OECD) in May 2005 to promote the

export of sustainable energy technologies. Hydropower projects were later included – under the condition that they fulfill all safeguard policies of the World Bank and explicitly recognize the value of the core values and strategic priorities of the World Commission on Dams report in this regard. Ilisu neither conforms with all World Bank safeguards nor with the WCD's strategic priorities. Nonetheless, the preferred repayment terms will apply if the ECAs grant their support. By approving special benefits for such an obviously unsustainable project, the ECAs are gambling away the last credibility they have on environmental and developmental concerns. ■

*The author is with the German development organization WEED (World Economy, Ecology & Development). Further information: [www.weed-online.org](http://www.weed-online.org), [www.hasankeyfgirisimi](http://www.hasankeyfgirisimi).*



**Ulrich Eichelmann of WWF-Austria is working on a different angle on the Ilisu campaign. He writes: "We are working with local people to establish a 'Park of Hope and Resistance' in Hasankeyf. Celebrity Bianca Jagger will preside over the March 23 opening. A group from Austria will plant a symbolic almond tree. Whoever wants to support the people of Hasankeyf and the anti-dam movement there, come and plant a tree."**

# Farmers, Fishers, Tribes Say “Restore the Klamath!”

by Elizabeth Brink

A broad coalition has come together to call for removal of four dams and restoration of once-thriving salmon runs in the Klamath River. Sovereign tribes, farmers, fishers and conservationists have found common ground and are fighting for the health of the Klamath and for the economic, social and environmental prosperity of their communities.

What was once the third most productive salmon run on the US west coast has dropped by over 90% since four dams were built, culminating in one of the worst runs ever in 2006, according to the Klamath Riverkeeper. Low runs of wild Klamath salmon have led to severe restrictions on commercial salmon fishing on over 700 miles of coastline in Oregon and California. These conditions have resulted in federal disaster declarations and have fueled the Klamath dam-removal movement by the states, fishermen, tribes and environmental groups.

Passing through the Cascade Range of southern Oregon and northern California,

the Klamath and its fish are sacred to native people, including the Karuk, Yurok and Hupa tribes, as well a confederation of the Klamath, Modoc, and Yahooskin people known as the Klamath Tribes. The river is prime habitat for chinook and coho salmon as well as steelhead and rainbow trout.

The dams' devastation of the Klamath salmon reached new heights in recent years, with agricultural water diversions leading to a massive fish kill in 2002 (68,000 fish died due to low flows), and the recent discovery of deadly toxic algae behind two of the reservoirs. In February, three groups – the Klamath Riverkeeper, the Karuk Tribe of California, and the Pacific Coast Federation of Fishermen's Association (PCFFA) – jointly petitioned the California State Water Board to hold dam owner PacifiCorp accountable for dangerously high blooms of toxic blue-green algae in the Iron Gate and Copco reservoirs. PacifiCorp is owned by billionaire Warren Buffett.

Even modest exposure to the toxin produced by the algae, called microcystin, can lead to skin rashes, vomiting, and diarrhea. High doses of the toxin, such as those found in the Klamath reservoirs each summer, could lead to massive liver failure and even death in humans. Microcystin also threatens to kill fish and other wildlife. “This year, in our second year of measuring algae, the Iron Gate and Copco reservoirs had the highest levels of the algal toxic microcystin ever measured in the United States,” states Craig Tucker, who represents the Karuk Tribe. “They exceeded the World Health Organization's guidelines for a moderate risk of exposure by 4,000-fold.”

The deadly algal blooms only serve to compound the urgency

of the upcoming relicensing process for the dams. (In the US, relicensing is periodically required for non-federally owned dams, and can determine whether changes must be made to improve downstream environmental conditions.) Despite the known impacts and intense lobbying by the coalition of tribes, conservationists and fishermen, PacifiCorp's 2004 application for a new 50-year Federal Energy Regulatory Commission (FERC) operating license did not include provisions for allowing salmon to return to over 300 miles of former habitat above the dams.

In January, however, the US Department of the Interior ruled that PacifiCorp must equip the four dams with fish ladders, a modification which could cost more than \$300 million, making removal of the dams a possibly cheaper option. The four dams produce 169 megawatts of power.

Days after the court ruling, a PacifiCorp spokesman said the company may be willing to pay to keep the dams. But the company's own ratepayers favor removing the dams and support modest rate increases in order to fund environmental restoration. “Governor Kulongoski of Oregon and the Schwarzenegger administration in California support dam removal, the fishing industry supports dam removal, the Klamath tribes that depend on the river support dam removal, environmental organizations support removal, and now it's clear that PacifiCorp ratepayers support dam removal as well,” said Kelly Catlett of Friends of the River.

“We never said we wouldn't consider dam removal as an outcome in the settlement process,” said Dave Kvamme of PacifiCorp.

The people who work, live on and love the Klamath say it is time to do more than consider. The name Klamath comes from a Native American word *klamet* meaning “swiftness.” The time has come for a swift resolution to the Klamath crisis. This river and its people have paid a high enough price for far too long. ■

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Photo: Patrick McCully

Klamath Basin tribes and allies from commercial fishing and conservation organizations stage a rally at a 2006 meeting of the international hydro-power industry. The tribes are calling for the removal of PacifiCorp's four Klamath River dams to help restore Klamath salmon runs.

# New Dams Proposed in California

by Steven L. Evans

Water pundits claim that the era of big dam building is over in the United States, but someone forgot to tell California Governor Arnold Schwarzenegger. Schwarzenegger is proposing to invest \$4 billion in general obligation and revenue bonds to build the Sites Reservoir in the Sacramento Valley and the Temperance Flat Dam on the San Joaquin River Gorge. His proposal promises to renew an ongoing battle between dam proponents and those who would like to see the state invest more wisely in water efficiency and recycling.

Governor Schwarzenegger says he believes that the new dams are needed to meet the needs of California's growing population, which is expected to increase by 23% in the next two decades. The problem with this prediction is that it assumes that California will continue to use the same amount of water per capita as it does today.

The state's own blueprint for water, the 2005 California Water Plan, shows that water use has declined and will continue to decline as more investments are made in water efficient technologies. California has already cut per capita use of water in half in the last 40 years. In addition, the Water Plan proves that more reliable amounts of water can be provided by urban and agriculture use efficiency, recycling, and groundwater management than from building new dams.

Additional investments in water use efficiency and recycling can produce far more water through conservation than similar investments in new dams. In fact, one dollar invested in urban water use efficiency produces four times more water than five dollars wasted on costly and destructive new dams. Although some regions such as Southern California do a relatively good job in using water efficiently, more can be done. And some regions such as the rapidly suburbanizing Central Valley have invested relatively little in water efficiency. In fact, many of the major cities in the Central Valley – including the state capitol of Sacramento – still do not meter or charge for water by volume, which is a basic first step to prevent water waste.

Governor Schwarzenegger also claims that California will need to build more dams in response to global warming. Scientists predict that global warming will indeed increase rain and reduce mountain snow pack, where much of the state's surface water is naturally stored. But many of



The Sites reservoir would drown this valley near Sacramento.

Photo: Steve Evans/FOR

these same scientists believe that California's already robust system of more than 1,200 large dams is sufficient to handle increased precipitation caused by global warming. One University of California hydrologist pointed out in a recent newspaper article that most of California's major rivers have been dammed already and the dams are much bigger than are now needed. He believes that the existing dam system will handle snow pack losses from global warming.

Recent studies indicate that building new large reservoirs will actually increase the greenhouse gases that cause global warming. Not only do years of construction to build large dams create emissions, but reservoirs themselves create emissions from organic material decaying in the water. One study found that Shasta Reservoir – the state's largest storage facility – released 224 tons of carbon dioxide per day, an amount equal to 14,500 automobiles driven 40 miles a day.

Evaporation from California's major reservoirs is also a problem. In fact, the dams proposed by Governor Schwarzenegger would produce roughly the same amount of water – about 500,000 acre feet – as is lost annually via evaporation from all of the state's current reservoirs. Building two more large reservoirs will only increase evaporative loss.

In addition to the larger policy issues associated with renewing the bad old days of building big dams, the projects identified by the governor are of dubious merit.

The Temperance Flat Dam would drown up to 7,000 acres of public land in the San Joaquin River Gorge that is now managed for outdoor recreation, wildlife habitat, public education, and traditional Native American cultural uses. The dam would drown at least

two existing hydroelectric power plants. Its reservoir will seldom fill, because most of the San Joaquin River's water is already captured behind existing dams. The San Joaquin River has been so thoroughly dammed and diverted that it runs dry downstream of Fresno in most years.

The Sites Offstream Storage Reservoir in the Sacramento Valley would be filled by water diverted from the Sacramento River. It would use at least one existing diversion dam that currently impedes the migration of 70% of the threatened spring run Chinook salmon that spawn upstream. So much water could be taken from the Sacramento River to fill Sites that the river's riparian ecosystem could be degraded and critical habitat for dozens of threatened and endangered species lost. The reservoir itself would drown 14,000 acres of grassland, oak woodland, and vernal pool habitat, and possibly hundreds of Native American and historical sites. The project would also be an energy hog, requiring electricity to pump water into the reservoir, thus adding to the project's greenhouse gas emissions.

More than 60 conservation, recreation, and Native American cultural organizations and businesses recently signed a letter urging Governor Schwarzenegger to "terminate" his plan to build new dams in California and to instead invest wisely in water use efficiency and recycling – a move that will produce more water and cause less environmental harm than building costly new dams. ■

*The author is the Conservation Director of Friends of the River.*

# Sharing the Srepok River

## Cambodian Communities Downstream of Vietnam Dams Finally Get a Hearing

by 3S Working Group

“Chances are you won’t pick up a hydro-related publication these days that doesn’t feature news of hydroelectric developments in Vietnam,” a major hydropower-industry magazine recently exclaimed. Vietnam’s booming economy has left it facing major power shortages that it plans to address in part through a massive hydropower development program, including within the Sesan and Srepok River basins. Both rivers originate in Vietnam’s central highlands, and flow into Northeast Cambodia.

If Vietnam’s record so far is any indication, downstream Cambodian communities have much to fear in their neighbor’s hydro-rush. Over the past decade, communities dependent upon the once abundant resources of the Sesan River have become impoverished due to impacts from the Yali Falls Dam 80 kilometers upstream in Vietnam.

Since 1996, when construction began, 55,000 people living downstream have suffered from daily erratic water fluctuations, widespread flooding, illness due to poor water quality, loss of riverbank gardens, and diminished fish stocks. Dam-induced flooding has killed 39 people. Average income has plummeted from around \$109 to \$46 per month. Four other major dams currently in operation or under construction have compounded the impact of Yali Falls, which commenced full operation in 2001.

Since 2003, Vietnam has also been constructing dams on the Srepok River without public consultation or consideration of the impacts on downstream communities in Cambodia. The bitter experience of Cambodian communities living along the nearby Sesan River has made the Srepok villagers rightly concerned.

Villagers blame unusual flooding of the Srepok River since 2004 on the construction activity upstream, although the Vietnamese authorities deny the connection, and say the floods are natural. Sin Thong Lao, a villager from Lumpait District, said, “Sometimes the water will dry up and sometimes we have serious floods. There were already three floods in the last year. And in 2006, we experienced severe flooding as we have never seen before.” Livestock, riverside gardens, and other property have been lost. “Because of the floods people face a shortage of food, and are now forced to seek employment outside,” she said.



Villagers use the Srepok River for transport

Photo: 3S Rivers Protection Network

In response to the impacts of the Yali Falls Dam, a local peoples’ movement developed along the Sesan River, supported by several local NGOs. As the threat of unrestrained hydropower development spread to the Srepok River and the Sekong River – another transboundary river shared between upstream Laos and Cambodia – the movement strengthened and grew.

The Sesan-Srepok-Sekong (“3S”) working group has determinedly campaigned for reparations and to prevent further destructive hydropower development in the region. While the Sesan villagers are yet to receive compensation, the 3S issue is now firmly on the agenda of the Cambodian and Vietnamese governments, as well as the donors who are supporting hydropower development in Vietnam.

For over a year the 3S Working Group had been calling for official consultation on draft Environmental Impact Assessment (EIA) reports for the Sesan and Srepok rivers. The reports, prepared as part of Vietnam’s National Hydropower Plan, detail likely downstream impacts and recommend mitigation measures of future dams. The Norwegian and Swedish bilateral aid agencies, NORAD and SIDA, are strong supporters of Vietnam’s hydropower sector and have been funding the development of the National Hydropower Plan since 1999.

On January 12, a consultation to discuss the Srepok report finally took place in Phnom Penh, Cambodia, sponsored by the Norwegian and Swedish Embassies. The EIA report anticipates major changes in water flow and reduced fish stocks that will affect an estimated 11,000 Cambodians living along the river’s banks from Vietnam’s Srepok hydropower developments.

The meeting marks a seminal point in Vietnam’s acknowledgement of downstream impacts from its hydropower development and its international responsibilities. At the meeting, for the first time villagers were able to express their concerns directly to Vietnamese government officials and the Srepok dams’ developer, Electricity of Vietnam (EVN), a state-owned corporation.

“The Srepok provides great potential for hydropower development, both in Vietnam and Cambodia,” said Cambodia’s Minister of Environment, H.E. Mok Mareth, in opening remarks at the meeting. He reflected on the damage caused by the Yali Falls Dam, saying, “Cambodia needs development, but we also need conservation,” he said. Cambodia is also investigating hydropower projects on its stretch of the Sesan and Srepok Rivers.

Community representatives, NGOs and government officials all raised concern that the report, which was based on only two

*continued opposite*

# Three Gorges Resettlers Lose Out to Corruption

by Susanne Wong

Chinese auditors have discovered that at least US\$30 million was embezzled from resettlement funds for the Three Gorges Dam in 2004 and 2005, according to China's state media. China's National Audit Office (NAO), which released its findings in late January, admitted that actual figures could be higher.

The money was supposed to be used to build houses and infrastructure for resettlers and to assist them in establishing new livelihoods. Instead, local authorities in Hubei province and Chongqing municipality reportedly embezzled \$34.8 million to pay off government debts, pay staff salaries, construct buildings and open government-run businesses.

In this latest corruption scandal on the project, state auditors found that local authorities claimed an additional \$2 million to pay non-existent workers. Some construction businesses also overcharged for resettlement projects.

The NAO found the discrepancies after surveying 10 districts and counties in Hubei province and Chongqing municipality. The survey covered funds distributed in 2004 and 2005. However, because the audit did not cover all affected areas or the distribution of funds in 2006, the amount of money misappropriated could be higher.

Two weeks after the findings were released, Xinhua News Agency reported that

all funds misappropriated in Hubei province had been recovered. Project officials urged Chongqing municipality to follow suit.

"Local authorities must recover the money before the end of March, or else the officials concerned will be held responsible," said Xia Kailiang, director of the Supervision Bureau with the Committee for Construction of Three Gorges Project.

Five cases of corruption have already been referred for judicial and disciplinary action.

## Ongoing Corruption

At least \$50 million was misappropriated from the project during its first six years of construction. Supervision of the Three Gorges project has been tightened periodically by the government to help clamp down on corruption. Several officials were executed for embezzling funds.

An estimated 1.4 million people have been displaced by the Three Gorges Dam. At least 50,000 more will be resettled this year. The majority of people have been resettled in Hubei and Chongqing, while others have been relocated to eastern and southern provinces.

China's vice-premier Zeng Peiyen recently called on local authorities to improve the lives of Three Gorges resettlers. He instructed officials to ensure that people are relocated in a timely manner, are able to

live stable lives and have opportunities to raise their incomes, reported Xinhua.

However, local officials are struggling to cover a variety of costs besides resettlement, including mitigating siltation and solid waste build-up in the reservoir. Although the central government is responsible for managing the reservoir's water quality and has promised \$2 billion to help build sewage, trash and garbage disposal facilities in all urban areas in the dam area, Interfax reports that there have been delays with construction of some facilities due to lack of funds.

In December, hundreds of residents in Hubei province planned a protest to demand full compensation for Three Gorges resettlement and to denounce corruption of funds by local officials, reported Asia News. Residents said they had received only \$645 of the \$4,900 entitled to them for land expropriation. They also claimed they had received virtually nothing of the annual \$77 living expense subsidy promised to them.

A local resident stressed the urgency of attending the demonstration despite threats and potential repercussions by the government. "Officers from the Public Security Bureau have been on alert and they have been following some of the ordinary citizens in this county," he said. "But still we need to have our voices heard because without this money, we have great problems making ends meet." ■

## 3S Rivers continued from page 9

months of fieldwork, was inadequate. They said it lacked baseline data, cost-benefit evaluation, detailed mitigation measures, and a review of feasible least-impact alternatives. Ms. Phanny, of Cambodia's Ministry of Environment EIA Department, said bluntly, "I think it is not a full EIA report. I think it is an initial EIA report. We need to take careful consideration before we proceed."

Tore Hagen, team leader of the Norwegian company SWECO Grøner that prepared the report for EVN, shared these concerns. "Within the time limit of our study, it was not possible to do a baseline study that would fit all of the requirements [of a full EIA]," he said. He recommended that if there are resources, further studies for each hydropower project should be carried out over at least a year.

Despite the reports not yet being finalized or released to the public, four out of six planned medium- to large-scale dams are already under construction. Tep Bun-

narith, of the Cambodian NGO Cultural and Environment Preservation Association, asked, "Can those sites under construction wait until the detailed full EIA is complete, because we have learned from the experience on the Sesan. We hear that there is commitment to cooperate, but we see that the dams are under construction."

The report has been found to fall short of both Vietnamese and international standards. The EIA does not comply with Vietnam's 2005 Law on Environmental Protection, which came into effect in July 2006, and states public comment should be taken into account before decisions are taken. Neither does it comply with Sweden's 2005 guidelines for future and existing dams developed to help Swedish actors apply international "best practice" guidelines for dam building, including on issues of impact assessment, access to information, and promoting benefit-sharing. This despite the fact that both SIDA and SWECO endorsed the guidelines.

Dr. Lam Du Son, EVN's Vice President, assured Cambodian participants that comments received at the consultation would be incorporated into the final report, and that the final dam in the cascade, Srepok 4, would be operated to minimize downstream impacts. "We realize that we need to improve this report," he said, but he also declared that hydropower development would continue.

Villagers questioned what benefit Cambodians would receive in return for the negative impacts the upstream dams will cause. "Dams may be good for your country," said Sin Thong Lao, "but you forget the hardship of the people living downstream. And we are the ones who face the losses."

## Promises made

With the Sesan villagers' experience in mind, Srepok villagers at the meeting urged EVN to guarantee their safety and compensate them for any destruction of homes, crops and live-

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# LEGAL AID

## LESSONS LEARNED FROM USING THE LAW IN LATIN AMERICAN DAM CASES

by Monti Aguirre

The fundamental rights of peoples and the environment are for the most part protected in the constitutions of many Latin American countries and the international agreements they signed. But too often projects are approved that disregard national and international laws on human rights, social issues and environmental protections. Many projects have been slowed, stopped or changed after affected communities filed legal actions to defend their fundamental rights. IRN talked to three lawyers involved in legal actions in Latin American dam cases to see what insights they could share.



## FIGHTING HUMAN RIGHTS ABUSES ON LA PAROTA DAM, MEXICO

The communities living along the Papagayo River in Mexico first heard about plans to build La Parota Dam in their midst back in 1976, but they didn't really believe it would happen. When the Federal Electricity Commission (CFE) was granted a license to build the dam, the affected people had no more information about the project than when it was first proposed. They did know, however, that they did not want to leave their land, and so they formed the Council of Ejidos and Communities Opposing La Parota Dam (known by its Spanish acronym CECOP). A bloody and dirty manipulation of the process followed. Project developer CFE met with non-affected people from the area and bought their signatures in a corrupt "public approval" process. Police

were used to protect the illegal meetings and prevent community members opposed to the project from participating. To date, three people from the affected communities have been killed, and the crimes unpunished. There are seven warrants of arrest for community people who oppose the construction of the dam.

CECOP sought legal representation from Mexican Center for Environmental Law and from Tlachinollan, a human rights organization.

**Astrid Puentes** works with the Inter-American Association for Environmental Defense (AIDA), which provides legal support for lawyers in Latin America. She spoke with us about her work with CEMDA and Tlachinollan on the legal strategies used on the La Parota Dam campaign.

### What specific legal actions were used in the campaign?

First, CEMDA filed an administrative action before the government environmental agency requesting a revision of the EIA, based on violations of Mexican law. Because that was not effective, they filed the case before Mexican courts. Currently the lawsuit has been

admitted, but the decision can take months. CEMDA also filled a criminal claim against the CFE for deforestation of the area without required permits. The Federal Prosecutor has not yet sent the case to the judge.

Because the government was conducting irregular meetings with community members of the *ejidos* (a land tenure unit)

to obtain approval for the construction of the project, Tlachinollan requested the legal annulment of meetings where approval for land-use changes and construction were illegally granted by some non-affected peoples and community members. As a result, a local court ordered CFE to stop building in one of the affected communities.

But these actions are taking place in a hostile climate. The community is under constant pressure and the affected people have been divided. This makes it hard to have a unified legal strategy.

In areas where Mexican laws are insufficient or ineffective, the case could be presented to the Inter-American Commission on Human Rights (IACHR) requesting precautionary measures. If presented to the IACHR, we will request measures on the lack of compliance with the American Convention of Human Rights and to the Adjunct Protocol of San Salvador, which address respect for economic, social and cultural rights, including protection of the environment.

### What are some of the lessons learned from this case?

The legal actions tried have been useful, to some extent, in protecting the rights of the *ejido* members, to slow construction of the dam and avoid some irreparable damages. Nevertheless, the political and economic

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# US LAW FIRMS WORK PRO BONO TO DEFEND COMMUNITIES

**Lewis Gordon** is an attorney and director of the Environmental Defender Law Center (EDLC). The Center works on behalf of individuals and groups in developing countries whose human rights are violated because of their environmental advocacy, and for people who have been harmed by environmentally destructive practices.

## How does EDLC work?

We identify cases where US law firms could be of assistance on a *pro bono* (free) basis, and then identify premier international firms to work on these matters. We believe that legal systems around the world must protect environmental defenders and recognize the participatory rights of their communities, and that US lawyers can play a critical role in achieving both of these goals.

Here's an example of one of our cases.

At EDLC's request, a team of attorneys from the law firm of Heller Ehrman, led by Marcia Newlands, a partner in the Seattle office, began working to defend Isidro Baldenegro, a Tarahumara indigenous person from Mexico.

Baldenegro was imprisoned in Chihuahua in 2003 on trumped-up criminal charges filed immediately after he had obtained a court injunction to halt logging of his community's forests. He spent much of his life defending the forests in a region torn by violence, corruption and drug trafficking.

Newlands immediately accepted the local lawyers' invitation to travel to Mexico to meet with government officials involved in the case. She quickly began to develop all manner of diplomatic and political contacts. Newlands also generated interest and involvement on



Remembering those who were massacred for their resistance to Chixoy Dam.

the part of staff and members of the Sierra Club, Amnesty International, and numerous Mexican and Latin American environmental and human rights groups. She succeeded in having articles about the case published in Mexican newspapers, obtained UN staff participation, and pressured the Attorney General of Mexico to meet to discuss the case. A more comprehensive and strategic effort could not have been mounted.

These efforts succeeded. Just three months after the firm became involved, Mexican Attorney General Macedo de la Concha held a press conference to announce that Mexico was dropping the charges against Baldenegro and his co-

defendant, Hermenegildo Rivas. Both men were unconditionally released from prison, and the arresting officers were then charged with wrongful arrest.

We were also successful at enlisting the US law firm Holland & Knight to take on the case of the Maya-Achí affected by the Chixoy Dam in Guatemala seeking reparations for the damages the construction of the dam caused. The firm's team of lawyers is headed by Washington, DC partner Enrique Gomez-Pinzón and Tallahassee partner Elizabeth Bevington. The team on this case includes over 25 people from eight of Holland & Knight's offices. The verification of damages

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## REPARATIONS FOR THE SARAKAMA PEOPLE OF SURINAME

*The Saramaka people, descendants of African slaves, settled along major rivers of Suriname in South America after they freed themselves from the Dutch colonial government in 1762. In the 1960s they lost 1,400 square hectares of their forest lands when the government built the Afobaka Dam on the Suriname River, to provide hydroelectricity for US aluminum company Alcoa. More than 6,000 people (mostly Saramaka) were displaced, and only a few received minimum compensation. Then, in the late 1990s, loggers moved into their territory, creating panic and fear. The Saramaka resolved to defend their land and rights.*

**Fergus Mackay**, a lawyer with the UK-based Forest Peoples Programme, spoke to us on the efforts to seek protection for the Saramaka's rights, and remedy for the damages caused by the Afobaka Dam.

### What specific legal actions were used in the campaign?

The 1987 Constitution of Suriname does not recognize or guarantee indigenous and tribal peoples' rights, and there is no provision for legal recourse should these rights be violated, or ways to challenge the system. The Saramaka do not hold title to their traditional territory, the state is considered to be the owner of their lands, and there is no mechanism for obtaining communal title in the Surinamese law system. Suriname lacks

environmental laws, and companies regulate themselves. In the case of logging in Saramaka territory, military personnel operated under the direction of the company to guard the concession. There was no national judicial system to which we could appeal.

Instead, in November 2006 we resorted to taking the case before the Inter-American Court. The case pleads the Court to instruct the Surinamese government to repair the damages caused to the Saramaka people by the construction of the Afobaka Dam, and for the denial of access to resources where Chinese and local logging concessionaires are installed. Compensation is also sought for the market value of their timber resources, which were harvested and expropriated

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**Madeira** continued from page 1

most larva and fry heading downstream would be ground up by the turbines.

Even the area to be flooded by the dam may have been seriously underestimated by the studies. Bruce Forsberg and Alexandre Kemenes, biologists with INPA, found that "the area flooded could be double that projected (529 sq km) by the project proponents ... casting doubt on the results of all studies carried out to date." Forsberg also examined the risk that mercury discarded into the river by gold miners would make its way into the food chain as a result of the dams, and found that no attempt was made to quantify how much mercury a riverbank dweller eating a daily diet of fish would ingest.

Other potential problems identified by the specialists include impacts on downstream lakes which are important fishing grounds, proliferation of vectors for the spread of malaria and other water-borne diseases, and the socio-economic consequences of the migration of tens of thousands of men to the region in search of work.

According to Roberto Smeraldi of Friends of the Earth, Amazonia, "The project would transform the entire western Amazon, but the government is treating it as if it had only local impacts."

### Impacts on Bolivia

The project's potential flooding of Bolivian territory has raised concerns among communities in Pando and Beni provinces. In October 2006, representatives of communities and indigenous peoples in the border

regions of Riberalta and Guayaramerín issued a declaration demanding that the Bolivian government "urgently intervene with the Brazilian government and international organizations, such as the United Nations, in defense of our territory, our rivers, and the plants, animals, and environment, as well as our way of life." The declaration noted that the flooding caused by Jirau Dam would mean the loss of fertile floodplain soils and that stagnant waters upstream from the dams would affect the water quality and health of Bolivians.

As a result, on November 7, 2006, Bolivia's Foreign Minister David Choquehuanca sent a letter to his counterpart at the Brazilian Foreign Relations Ministry, citing "concern over the probable ecological and environmental impacts" of the dams planned for the Madeira River. The letter stated: "Among the probable impacts will be the flooding of Bolivian territory by the dams' reservoirs, which would affect not only the existence of the Amazon forest in the Madeira basin, rich in Brazil nuts, but also possibilities for future construction of dams to satisfy regional and local energy needs."

Choquehuanca proposed that a bi-national commission be formed to evaluate the possible cross-border impacts of the Santo Antonio and Jirau dams. Bolivian environmental officials also convened technical and scientific experts to evaluate the Madeira River hydroelectric complex and its possible effects on their country.

In February, 2007, Bolivian President Evo Morales met with Brazilian President Luis

Inácio Lula da Silva to re-negotiate prices for sale of Bolivian natural gas to Brazil. Despite the fact that Lula announced that the two countries would examine the feasibility of a bi-national dam on the Madeira, news reports indicate that Morales held firm on Bolivia's position that further studies on the two proposed dams are needed, and that until these studies are undertaken, the projects should not go ahead.

### Brazil's top energy priority

Despite the critical issues raised regarding the potential extent of the dams' impacts, Brazilian energy planners say that the Madeira dams are the country's number one priority for expansion of electricity generation. The Mines and Energy Ministry has assured investors that the rights to build the Madeira complex will be tendered in June or July 2007.

Under the Lula government's new multi-year infrastructure plan (called the "Program to Accelerate Growth"), such projects will receive favorable terms from Brazil's National Economic and Social Development Bank (BNDES). The government also says that under new rules, BNDES will be able to finance up to 80% of the total cost of the projects. This would include not only a major part of the US\$9 billion cost of the Madeira dams, but also a significant portion of the cost of constructing 2,500 km of transmission lines to connect the project with the national grid. The transmission line corridor is estimated to cost between \$1.75 billion and \$4.25 billion. Its environmental impacts have not yet been analyzed. ■

**US Law Firms** continued from page 9 and negotiations are still pending.

### What other types of assistance does EDLC provide?

■ File amicus ("friend of the court") briefs in foreign courts to demonstrate that the laws and decisions of international human rights bodies and foreign courts support the position being taken in specific cases.

■ File claims with regional or international human rights bodies to remedy violations of the human rights of environmental defenders, or to vindicate the property rights and land claims of indigenous peoples.

■ Help to draft environmental laws to increase citizen participation in environmental decision-making, environmental impact assessment, etc.

■ Take action against parties responsible for environmental/human rights violations abroad.

In every case, we bring to bear the prestige and enormous resources of top interna-

tional law firms, typically with numerous offices around the world and with 700-3,000 lawyers, and often with significant diplomatic and political contacts.

### What laws do US firms apply if they are working internationally?

They typically focus on international human rights law and international environmental law, and to some extent, national law from other countries. The local lawyers are of course better able to raise local law arguments. The local lawyers and US lawyers work in a complementary fashion.

### What are the lessons learned?

In general, having the assistance of lawyers from other countries tends to "internationalize" a case and "level the playing field." The local decision-makers realize that the case has attracted international attention, and that their decisions will be scrutinized and perhaps become the subject of further legal proceedings internationally and/or

international campaigns. If the actors are US-based, then having lawyers in the US involved on behalf of the local people also enables the concerns of local communities to be conveyed more directly and effectively, and puts the actors on notice that their projects will not go "under the radar."

### Can you offer advice on how to find pro bono lawyers?

Absolutely! We specialize in one approach: getting US private lawyers to work *pro bono* on these cases. Groups can start at our website: [www.edlc.org](http://www.edlc.org). Other groups provide legal services in other ways: ELAW in Oregon, AIDA, Earthjustice (which has 8 US offices), local legal NGOs, Earthrights International and the Center for International Environmental Law (both in Washington, D.C.), etc. It is very difficult to obtain *pro bono* services from private lawyers in developing countries, so the above resources are critical. ■

# Rethinking Brazil's Energy Future

by Glenn Switkes

**B**razil's electrical energy future, today dominated by plans for a seemingly endless string of large hydroelectric dams, can be transformed by improved efficiency and diversification of the country's energy matrix, according to two new studies published by WWF-Brazil and Greenpeace. Although the assumptions and conclusions of the two studies are very different, each demonstrates the possibility of re-thinking Brazilian energy policy.

Both studies emphasize the potential for energy efficiency, and state that Brazil could save the energy equivalent of 12-13 Madeira Dam complexes through conservation measures alone.

WWF's "Sustainable Energy Agenda 2020" (Sept. 2006), analyzed different scenarios for "an efficient, secure, and competitive Brazilian electric sector." It was developed in collaboration with a team of specialists from the São Paulo State University at Campinas, together with the International Energy Initiative, an NGO comprised of technical experts supporting energy efficiency in developing countries.

The WWF study finds that Brazil could meet 38% of its projected energy needs by 2020 by increasing efficiency and doubling its use of renewable energy sources (biomass, wind, small hydro, solar thermal and photovoltaics). According to WWF, the additional costs needed to implement renewable energy can be more than offset by savings realized by improvements in efficiency, resulting in a net saving of more than US\$15 billion, and avoiding 78,000 MW in new generating capacity – equivalent to more than 12 Madeira River dam complexes. WWF estimates that new energy sources will help create 3.5 million new direct and indirect jobs, and reduce carbon emissions.

Many of WWF's proposals are market-oriented incentives for efficiency, including the development of energy efficiency service companies, improving standards for efficiency, and setting goals for investments in efficiency by private companies and public agencies. The report also recommends targets for cutting losses in electrical transmission and distribution systems (today 16-17% of all energy generated is lost before getting to the end user, as opposed to an international "standard" of 6.5%), improving the efficiency of industrial motors, broader dissemination of energy-efficient lighting, and phasing out electric shower heads (today present in two-thirds of Brazilian homes.)

The report and an "open letter" by the organization that is highly critical of Brazilian energy policy triggered a strong reaction by the head of Brazil's energy planning agency, who called the study "utopian" and "of little use."

The Brazilian government is probably even less satisfied with Greenpeace's study, part of an international series by Greenpeace and the European Renewable Energy Council, and written in collaboration with the Energy Engineering and Electrical Automation Department of the University of São Paulo.

The Greenpeace study, "The Scenario for an Energy Revolution in Brazil," looks farther out than the WWF study, and predicts energy needs for the year 2050. It analyzes three scenarios – one based on official projections, one on the work of the University of São Paulo technicians, and one where Greenpeace establishes a series of criteria to determine the direction Brazilian energy policy should take. The University team found that efficiency measures could "avoid" 25% of the electrical generation projected for 2050 by government energy planners. Greenpeace's "revolution" prioritized implementation of renewable energy solutions, especially decentralized energy systems; and calls for the gradual phase-out of non-sustainable energy sources.

The scenario they call Brazil's "2050 energy revolution" forecasts that total generation will nearly double in the next 45 years, and predicts that energy efficiency will avoid generation of 413 Twh of energy per year (or about 13 times what the Madeira River dams are projected to generate). Controversially, it

also calls for up to 40,000 MW of new large hydro. In this scenario, no electricity would be produced by fuel oil, coal, or nuclear energy. Hydroelectricity would account for 38% of electricity generation (an increase from today's figures but a smaller percentage of the overall energy pie), biomass for 26%, wind energy for 20%, natural gas for 12%, and solar photovoltaic for 4%.

Surprisingly, the Greenpeace study classifies large hydro as "renewable," and avoids discussing dams' severe impacts on water resources and biodiversity, and the enormous greenhouse gas emissions that hydroelectric expansion in the Amazon would entail. The 40,000 MW of additional hydroelectric generating capacity would result in numerous dams on the Madeira, Xingu, and other major rivers of Amazonia. This is clearly not an "energy revolution," at least for the people and ecosystems of the Amazon basin.

Without a crystal ball to see the future, it's hard to say where Brazil will be 20 or 50 years from now. Will there be major new energy innovations that will allow Brazil to meet the energy needs of its people without destroying the Amazon basin and the climate? Will climate change reduce the Amazon's flow to the point that hydro is no longer feasible? But one thing is clear: Brazil should take a "no-regrets" approach to planning its energy future. That means prioritizing energy efficiency measures now, before new dams are built. ■

Both studies are available online  
(in Portuguese only): [tinyurl.com/2hjpm](http://tinyurl.com/2hjpm)  
and [tinyurl.com/243qmf](http://tinyurl.com/243qmf)

## DAY OF ACTION TURNS 10

Thousands rallied in Imphal, India last year to protest the government's decision to build the Tipaimukh Dam. The Indian activists planned a repeat performance this year on March 14 to mark the 10th anniversary of the International Day of Action for Rivers.





## MINING AND RIVERS

**BRAZIL:** The state government of Minas Gerais has shut down the Mineração Rio Pomba bauxite mine after the failure of a tailings dam in January. It was the second failure of the dam in less than a year. At least 2,616,000 cubic yards of bauxite muds flowed down the river, burying streets and houses in the towns of Mirai and Muriaé several meters deep, before continuing downstream into Rio de Janeiro state. 4,000 people had to leave their homes, and at least 100,000 were affected. Agriculture, livestock and fish also suffered serious damage. Water supplies were disrupted and weeks later, communities were still receiving water from tank trucks.

This failure follows a 400,000 cubic meter rupture that occurred at the same tailings dam in March 2006. Environmental authorities have levied a US\$35 million fine for the second spill. The company had failed to pay fines assessed following the earlier accident.

**US:** Three environmental groups are going to court to challenge a recent permit for a highly destructive coal mine in West Virginia. The Ohio Valley Environmental Coalition, the West Virginia Highlands Conservancy and Coal River Mountain Watch are challenging a recent approval for what would be the state's largest "mountaintop removal" mine operation. In January, the US Army Corps of Engineers granted a Clean Water Act permit for the Spruce Mine in Logan County. The "dredge-and-fill" permit would allow the Spruce Mine to bury nearly seven miles of streams (down from 10 miles before an earlier challenge forced the company to scale back).

The environmental groups argue that the Army Corps' environmental impact study on the Spruce Mine was inadequate. The approval document stated that the Spruce Mine "would only contribute minimally to cumulative impacts on surface water quality," according to the *West Virginia Gazette*.

The groups challenging the permit stated in court: "On the contrary, scientific studies demonstrate that valley fills significantly degrade downstream water quality, and significantly alter the biological diversity of downstream aquatic life."

The Spruce Mine was at the heart of the first major lawsuit over mountaintop removal mining. As a result, the mine is the only mountaintop removal mine to undergo an EIS for its Clean Water Act permit from the Corps. Mountaintop removal mining literally blows mountains up to get at coal. The blasted debris is usually dumped in waterways; more than 1,500 miles of streams in the Appalachia mountains have been buried by this debris.

## UPDATES

**MALAYSIA:** The government is reviving plans to build a US\$2.6 billion submarine cable system to transmit power from Bakun Dam in Sarawak to the more industrialized western peninsula. Sahabat Alam Malaysia (SAM), a local NGO, criticized the government's support of the project as "financially exorbitant and environmentally unsound."

Plans to build the 2,400-MW Bakun Dam and submarine cables have been shelved twice – in 1990 following a recession, and in 1997 after the Asian financial crisis. The government reintroduced a scaled-down project in 2001 without the cables, and construction of the project began shortly afterward. The dam is expected to be completed next year.

Critics say the submarine cable project will have significant economic, technical and security risks. SAM states that specially designed ships will have to be built to lay the cables. Locating and preparing the seabed trenches and building maintenance stations will be costly. Potential transmission losses and future maintenance work will pose further technical and financial challenges.

SAM states that the wisest option is for the government to scale down the project to avoid further financial losses and environmental destruction.

Energy, Water and Communications Minister Datuk Seri Dr Lim Keng Yaik said it would take at least five years to install about 700 kilometers of transmission lines and to lay 670 km of undersea cables.

**ARGENTINA/PARAGUAY:** With the level of waters in the Yacyretá Dam reservoir set to rise 6.5 feet, critics contend that the binational company which runs the dam has failed to carry out sanitation measures proscribed under its completion plan. Argen-

tina has allotted more than one million dollars for cleanup of coastal areas and six million for clearing vegetation on the banks of the reservoir, but new reports show that garbage dumps remain untreated, and forests of dead trees continue to rot in the areas of the reservoir near the Argentine bank of the Paraná River. Construction of Yacyretá began in 1979, and the reservoir was partially filled in 1994, but corruption, poor planning, and economic problems have prevented completion of the social and environmental mitigation work on the project, which was financed by the World Bank and Inter-American Development Bank.

**BRAZIL:** Brazilian news magazine *Carta Capital* reports that in a town near the site of Samuel Dam in Rondônia, coffins and corpses have been rising out of the earth. The dam's reservoir has led to a rising water table in nearby towns, with the effect heightened by seasonal rainstorms. The water table has been contaminated not only by contact with cadavers, but also due to infiltration from the town's garbage dump. Malaria cases have jumped from 300 to 2,000 per year. The mayor of Itapuã do Oeste estimates it would cost \$10-15 million to drain the soil, build sewage treatment, move the garbage dump, and build an above-ground cemetery.

**CHINA:** The floodgates of China's Three Gorges Dam were opened on January 10 to ease water shortages in Yangtze River, which is at its lowest level in over 100 years. The Yangtze, China's largest river, has seen a 30-40% decrease in its flow, ruining crops and leaving more than 17 million people short of water. The drought raises questions about how China will respond to the growing problem of global warming.

Just at the close of this devastatingly hot year, the Ministry of Science and Technology, the China Meteorological Administration, and the Chinese Academy of Science released China's first-ever National Assessment Report on Climate Change. This report predicts substantial increases in average temperature and severe water shortages in the coming years. The study predicts that harvests of major crops such as wheat, rice, and corn could drop by over a third.

## A BETTER WAY

**GEOHERMAL:** A Massachusetts Institute of Technology (MIT) study states that the mining of geothermal heat found beneath the earth's crust could be done on a far larger scale than conventionally understood.

Geothermal energy “represents a large, indigenous resource that can provide base-load electric power and heat at a level that can have a major impact on the US, while incurring minimal environmental impacts,” the MIT report found.

The study, described by the researchers as the most far-reaching on the subject in 30 years, said the US could develop 100,000 megawatts or more – enough to supply about 25 million homes – in 50 years at an eventual cost of just US\$40 million a year.

Geothermal power – generated from drilling wells that allow hot water or steam to power turbines, and requiring no fuel – is already on the rise globally. The United States leads the way with most existing plants and more than 60 projects in the works. The new projects will double its geothermal capacity to more than 5,000 MW, according to the Geothermal Energy Association.

The proposed program would require a combined public and private investment of \$800 million to \$1 billion in the first 15 years – about the same amount needed to build one new clean-coal power plant, the study said.

The new report focuses on a process called enhanced geothermal, which involves drilling several deep holes into rock, and creating large subterranean reservoirs through which pressurized water is circulated.

Most of the key technical requirements to make it work economically are in effect or “easily within reach,” the report said, and could be ready to enter a commercial scale within a 10- to 15-year period nationwide.

The report notes that there are successful “enhanced geothermal” plants in Australia, Europe and Japan. US research into the technology withered after a brief burst of research during the 1970s oil crisis.

**SOLAR PV:** British supermarket chain Tesco announced on January 19 that it will install “the world’s largest roof-mounted solar system” at its new Tesco USA distribution center in Riverside, California. The new 2 megawatt system will surpass the current record-holder – a 1.6 MW system being installed at the headquarters for internet search giant Google, also in California. Tesco’s \$13 million solar system is expected to provide one-fifth of the facility’s power supply and prevent 1,200 tons of CO<sub>2</sub> emissions each year. Tesco says that the system should be online by the end of 2007.

**CONCENTRATING SOLAR:** Egypt has plans to build a 150 MW combined solar- and gas-powered electric plant near Cairo,

according to news reports. The \$200 million concentrating solar power project will use rows of parabolic-shaped trough reflectors to focus sunlight onto a tube filled with circulating oil, which is heated to temperatures that can power a steam turbine. The project is expected to be complete in 2009.

The power plant will use natural gas turbines to supplement the solar-generated power, a commonly used method that allows a consistent supply of power at night and during cloudy weather.

According to an article by UPI, the Egyptian New and Renewable Energy Authority (NREA) hopes to provide 3% of the country’s electricity needs with renewable sources by 2010. The nation has a goal of increasing its wind power from 140 MW to 850 MW by 2010, for example

Concentrating solar power is growing rapidly, thanks to its ability to produce large amounts of energy that can be used for industrial applications. Projects are underway in the US, the Middle East, North Africa, Europe, and Latin America. Spain hopes to generate 500 MW of electricity from concentrating solar power by 2010, and China is considering a 1,000 MW plant that could cost more than \$2 billion, according to UPI.

A study has shown that North Africa could produce 700,000 GW-hours per year of electricity with concentrating solar technologies.

And the US Department of Energy has estimated that 9% of the state of Nevada (about 10,000 square miles) could supply the electric power needs for the entire US using concentrating solar.

**LIGHTS OUT:** A sudden surge in efforts to phase out standard light bulbs and replace them with ultra-efficient ones has many wondering, how many lawmakers does it take to change a light bulb?

Efforts include a complete ban of new standard bulbs being sold in Australia by 2012; a similar proposal by a California legislator to eliminate new incandescent light bulbs in the Golden State by 2012; and a statement by Philips, the world’s biggest lighting manufacturer, urging EU governments to introduce legislation to phase out incandescent light bulbs within ten years.

Australia’s environment minister said the bulb ban could cut the country’s greenhouse gas emissions by 4 million tons by 2012.

Highly inefficient incandescent light bulbs still account for about most lighting around the world, in part because more efficient bulbs have a higher up-front cost.

The alternatives include compact fluorescents, halogen retrofit light bulbs and LED lighting technologies. A new line of halogen bulbs by Philips saves 50% of the energy used by incandescents.

“If the whole world switches to these bulbs today, we would reduce our consumption of electricity by an amount equal to five times Australia’s annual consumption of electricity,” according to Australia’s energy minister.

# New Internationalist

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**Sustainable Renewable Energy Sources – Their Use and Participatory Management in Rural Areas** by the Energy Group of the Brazilian Forum of NGOs and Social Movements for Environment and Development. 2006, 68 pp., free from [www.natbrasil.org.br](http://www.natbrasil.org.br) or contact Lúcia Ortiz at Friends of the Earth Brazil ([lucia@natbrasil.org.br](mailto:lucia@natbrasil.org.br)). In Portuguese.

Brazil is one of the last bastions of widespread, large-scale hydroelectric dam construction, but its dam-building plans are not primarily focused on reducing the high number of off-grid rural communities. An estimated 10 million people in vast areas of the Amazon and the rural interior of Brazil still remain off-grid. The 400-member Brazilian NGO Forum produced this guide in clear language to help “unplugged” rural communities choose and pursue development of small-scale energy alternatives.

Local control is key to maximizing benefits, the guide notes. “Tapping into the power of small waterfalls, agricultural wastes, wind, and sun, using appropriate technologies managed by local communities, can bring rural communities not only electricity, but also the possibility of conserving food, heating water, drying grains, as well as options for transportation and communication.”

The guide is divided by energy sources – micro- and mini-hydroelectric projects, biomass, biogas, biofuels, solar photovoltaics, and wind.

The section called “the 3 bios” is particularly eye-opening. Case studies show the enormous potential in Brazil for using energy found in generally discarded materials such as rice husks and animal wastes (as much as 20,000 MW of electricity could be generated in Brazil using these materials, the report states). The guide also provides useful information about topics such as the clean development mechanism and its potential to subsidize rural biogas projects, and social and environmental criteria for biofuels programs. Brazil’s highly-vaunted biofuels initiative is now emphasizing production by agribusiness, a trend the authors would like to see reversed: “In terms of social and environmental criteria for biofuels, family-run farms should not merely furnish raw materials, but should be part of the entire productive chain.”

The report also identifies some obstacles that rural alternative energy projects have had to confront, such as the need for skilled workers to maintain solar systems and the need to dispose of batteries. Greatest success has come when trained workers have accompanied the distribution of solar systems to communities.

This excellent guide offers a perspective on how Brazilian communities are beginning to apply principles of sustainability in choosing their energy future. The essential element is that rural communities participate, in an informed manner, in the planning and management of energy systems.

*Glenn Switkes*

**Tales of the San Joaquin: A River Journey**, a documentary film written and directed by Christopher Beaver. 32 minutes. Produced by CB Films ([www.CBFilms.net](http://www.CBFilms.net)).

California’s San Joaquin River was once wide enough for steamboats to ply its waters from the Pacific Ocean to towns in the Central Valley. Before dams turned it into a desert, the river was half a mile wide in places. Now the only artifact testifying to this history are the decaying remnants of an old dock in the wide, sandy bed of the dying river.

The history of the San Joaquin and the livelihoods of the people who have depended on it are poignantly captured in this beautiful film, which follows the path of the river from its source to its mouth and tells the stories of the farmers, fishers, and families along the way who regard the river as a special place. Starting in the clear, high flows at its source high in the Sierra mountains east of Yosemite, the river soon takes a turn for the worst after hitting the Friant Dam, where 90% of its water is diverted southward for irrigation. Only the concerted efforts of a small group of farmers during the Great Depression prevented the entire river flow from being stopped at the dam. The greatly diminished river now runs dry 40 miles below the dam.

A man-made canal brings the river back to life briefly for some stretches, but again it runs dry until it meets with several major rivers flowing down from the mountains that carry it into the delta and eventually

the San Francisco Bay. The river’s once-famed salmon runs are long gone.

But despite the near-death of this once great river, its friends have not given up on it, and efforts are underway to restore some of its flows. Good news came after this film was released: the California Supreme Court ruled in favor of a lawsuit brought by environmental groups to force the federal dam operators to release enough water from the dam to bring back the salmon runs.

*Riam Firouz*

**Cowboys, Indians & Lawyers**, a documentary film by Julia Dengel. Produced by Bullfrog Films, 57 minutes, 2005 ([www.bullfrogfilms.com](http://www.bullfrogfilms.com)).

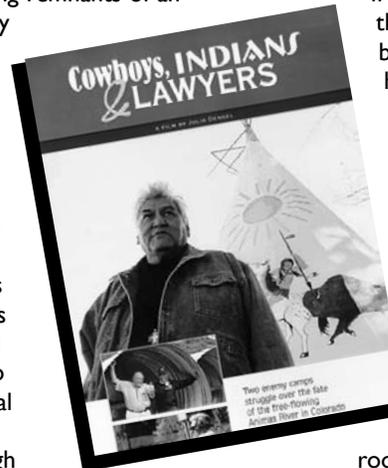
Southwestern Colorado is currently in the midst of a water-war over an infamous project known as the Animas-La Plata (ALP) Dam. This film follows the struggle from both sides of this highly controversial project in context of the greater conflict over water resources that has long troubled the western United States.

The Animas River – one of the last free-flowing large rivers in the desert southwest – is being threatened by the highly controversial ALP Dam, a project authorized by Congress over 30 years ago. On one side are the developers and farmers who want to use the dam’s water to fuel development and to irrigate fields. On the other side are the environmentalists, taxpayer groups, and the Southern Ute Grassroots Organization (SUGO)

who argue that destroying the river with a reservoir that will flood a wildlife preserve, while bringing in large-scale development at a very high cost to taxpayers, negates any value the project may have. The dam was designed “to make a whole lotta money for a select group of people,” says Mike Black of Taxpayers for the Animas River.

This remarkable film brings to light the intimate, complex relationships between developers, water lawyers, farmers, and Native Americans while dredging up the complex history surrounding Anglo-Native politics that are all influential to this project.

*Riam Firouz*



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### **3S Rivers** continued from page 7

lihoods. In a written statement, they called on EVN to halt dam construction until agreement for compensation, life insurance, flood warning procedures, and benefit-sharing between the two countries had been made. Dr. Lam Du Son promised to “find an agreement, to find solutions, and to address the damages.”

Yet, negotiations between Cambodia and Vietnam through the Joint Committee for the Sesan River has stalled and is yet to result in compensation or remedy for affected villagers. Kim Sangha of the 3S Riv-

ers Protection Network, a group advocating for the rights of dam-affected communities, said, “We appreciate the commitment and promises that were given by EVN during the meeting. But we want these promises to become reality.”

Despite the lack of concrete changes resulting from the meeting, many villagers felt the consultation was a step in the right direction. “We wanted Vietnam to hear what was happening here,” concluded Po Sum of Pum Themy village in Ratanakiri province. “Our main request was to ask Vietnam to help the

affected people here, because the burden of life is getting worse and worse.”

The consultation was, however, unable to dispel many Srepok villagers’ fears that the dams will cause more harm than good. They are skeptical about the commitments made by Vietnamese and Cambodian officials, given EVN’s history along the neighboring Sesan River where thousands of villagers affected by the Yali Falls dam are still waiting for compensation a decade later. ■

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*For further information:*

<http://tinyurl.com/2bb2zs>

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### **La Parota** continued from page 8

pressures are high, and the courts’ mandates have been only partially complied with. CFE continues to build, even though the court prohibited it.

Regarding harassment and threats, it is clear that the community had too little information about possible legal actions they can take, and not all threats and harassments have been denounced as they should have been. The lack of communication has been a challenge on this issue, since there are so many people affected by the project. It is key to engage community people who can share information within the community on rights and recourse.

Another lesson learned is that the media can be a valuable player in the process. Sharing legal decisions and the perspective of affected peoples with the media are essential.

### **How can people get the help of lawyers?**

Communities could request support from environmental and human rights NGOs.

Support could consist of helping to design and implement a legal strategy. The attorney general, public attorneys, human rights offices and human rights commissions could help call attention to legal irregularities. Law students or local lawyers may be able to help with designing a legal strategy.

It is very important for communities to document their case. Documentation should include information about the project, how it is going to affect communities, what types of impacts are created by various parts of the project, details about financing, details about threats made to community members, lists of who has contacted the community about the project, meetings held, payments offered, land tenure documentation, etc. Since there are often many different groups of affected people, it’s important to establish committees or working groups and divide the tasks among them, including informing others about the legal strategy.

We are working on a guide for the litigation of human rights cases related to environmental impacts and degradation from development projects, and how they can be

presented before the Inter-American Commission on Human Rights. This guide (in Spanish) will be on the AIDA web site soon. We hope that this material will contribute in a better understanding of how to do strategic and more effective litigation on these kinds of cases.

### **Have you ever encountered a situation where a legal strategy failed not because of flawed laws but for political reasons?**

Unfortunately, I believe that this is the rule and not the exception. Even with the existence of laws to protect people in these cases – and there are many cases where if the laws had been applied effectively, many of the rights of affected peoples would be protected – politics and powerful interests can influence the application, or lack of application, of the law. If the community does not have a strong political strategy, the legal strategies are doomed to fail. ■

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### **Saramaka** continued from page 9

without the people’s consent by the logging companies authorized by the State. Hearings for the case began in February.

### **Describe how you prepared the case.**

It was important for me to understand who the Saramaka are, what happened to them, and their vision for the future. It became necessary to help build the capacity of the communities, and strengthen their institutions. That organizing process took close to three years. We also worked to produce evidence. Initially, we had to resort to non-legal options, and engaged the state in the process. We enlisted the support of specialists to help us map contemporary Saramaka occupation

and use of lands and resources; and updated concession maps produced by the State depicting existing resource exploitation concessions in Saramaka territory. We found out that there were mining concessions granted to companies in their territory, and the Saramaka were unaware of it. We also worked within the United Nations treaty bodies to include the need for protection of the rights of indigenous and tribal peoples in Suriname.

The outcome of this case is important considering that by 2010 the government intends to expand hydropower production from the Brokopondo reservoir, a part of the Tapanahony River Diversion project. This project as planned will forcibly displace a large number of indigenous and N’djuka Maroon communities living along the Tapa-

nahony River. One thousand or more Saramaka villagers will also be affected on the Upper Suriname River at the southern edge of the reservoir.

### **What are some of the lessons learned from this case?**

Communities need to be assertive but careful. The organizing process is very important, as well as creating a network of groups and lawyers that they trust. They need to do their research. Also, groups need to think about what they are going to be dealing with in 20 years and plan for that now, to think about what is the vision for the future of community. ■

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<http://www.forestpeoples.org/>