

SPECIAL FOCUS ON Latin America



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Photo: Monti Aguirre

Urra Dam will harm this fish seller's livelihood, as well as the lives of the Embera people.

Colombian Indigenous Nation Seeks Asylum Over Dam Murders

by Monti Aguirre & Glenn Switkes

At least 2,500 Embera-Katio indigenous people, who have for years been fighting the construction of the 340-MW Urrá I Dam on the upper Sinú River in Colombia, sought political asylum at the Spanish embassy in Bogotá following the assassination of yet another of their leaders on April 24. Lucindo Domicó Cabrera was shot eight times in the early evening at his house by two armed, masked men. Cabrera was one of the leading spokesmen for communities affected by Urrá, and a health worker for the community.

In their letter to the Spanish ambassador, the Embera-Katio said "The process of 'dialogue' regarding Urrá Dam has been filled with violence against the Embera ... we ask for asylum because if it is not granted, all our people will die as a result of persecution connected with the construction of Urrá."

The Emberas' asylum request is an attempt to pressure the government of president

Andrés Pastrana to take measures necessary to protect the indigenous communities. According to indigenous senator Jesús Piñacué, "300 of the Embera-Katio that have been seriously attacked in the past five years, and 90 have been killed." Embera-Katio communities affected by the project are losing fishery resources, their land and their way of life.

The US\$670 million Urra I will flood 7,400 hectares, including Embera lands and parts of the Paramillo National Park. The dam has been under construction since 1994. Urra Multipurpose, S.A. manages the dam for the company which owns the dam, Corelca. Urra I is nearly complete, and the company hopes to begin filling the reservoir beginning in June.

First, however, it needs to finish up the consultation process with indigenous and fishing communities mandated by the constitutional court. After a long history of

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his special issue was inspired by the efforts of dam fighters and river defenders from throughout Latin America. It also marks the first issue of *World Rivers Review* that will be translated into Spanish and Portuguese. With this issue, we highlight the growing menace to Latin America's rivers by the dam industry and the resistance offered by dam affected peoples.

Dams have caused wide-ranging harm to the region: its tropical forests are disappearing, species are going extinct, river health has been damaged, and poverty is increasing as thousands of people displaced for dams struggle to replace lost livelihoods. But Latin American rivers still present considerable hydropower potential for a dam industry eager to exploit it, and new projects continue to be proposed (see page 8).

Affected peoples are also increasingly becoming aware that they need to fight dams. Their struggles are not easy. Many people have never seen a dam and do not understand the dam-building jargon or process. But they are catching on quickly, and dam-affected peoples are making their voices heard. Colombian groups are setting up a network for river protection (see page 4); Bolivian NGOs are holding a series of workshops to discuss government plans for dams; Pehuenche women are organizing marches over dams on Chile's Biobío River (see page 11); farmers and indigenous peoples in Mexico are protesting plans for raising water levels of Temescal and Cerro de Oro dams, and a coalition of Salvadoran anti-dam groups are trying to track down the facts about a rumored dam on the Torola River.

But the gains that dam-affected people have achieved in halting or modifying large dam projects have sometimes come with unacceptably high costs, as stories in this issue reveal. In late April, leaders of the Embera-Katío tribe of Colombia's upper Sinú River asked the Spanish embassy for political asylum following the murder of another of its leaders (see page 1). The situation of the Embera-Katío, who have been harassed and murdered because of their opposition to Urra Dam, are a vivid reminder that human rights are often of little consequence when they run contrary to the political and economic interests promoting dams.

At the 1997 International Meeting of Dam Affected Peoples in Brazil, the Curitiba Declaration, written by dam-affected groups from 18 countries, called for an independent evaluation of dams world-wide. The result was the formation two years later of the World Commission on Dams (WCD). The WCD will analyze the effectiveness and impacts of dams around the world. One of its tools of analysis will be public hearings, at which dam-affected people can describe to WCD commissioners how their lives have been changed by dams. Brazil's Movement of Dam Affected People and other Brazilian NGOs are calling for a massive presence of dam-affected peoples from the region at the Latin American Public Hearing in August, and are coordinating submissions by Latin American groups to be included in the WCD studies.

While the WCD will not have any powers to demand reparations for affected people, it is hoped that the inclusion of testimony by dam-affected people in the final analysis will bring home the full impacts of these projects to the world. However, the inclusion of a number of dam-proponents and apologists on the commission have some worried about the WCD's final product. Recently, a WCD commissioner pronounced his position on the subject of social impacts of dam building. José Goldemberg, ex-president of the São Paulo energy company which built the \$10 billion Porto Primavera Dam, wrote in a leading São Paulo daily: "To not build dams means, at times, questioning the need for development, which is the aspiration of the great majority of the population. In countries with low population density like Brazil, relocation of affected populations is generally a small problem..."

Large dams in Brazil have directly impacted approximately one million people, who have seen their land destroyed and their livelihoods ruined. Hundreds of indigenous communities from Mexico to Chile have been forcibly expelled from age-old territories and sacred lands. People who stand to lose everything to these projects should have the fundamental right to tell dam builders "no," the power to veto unsound projects, and the power to insist upon development alternatives that do not increase human suffering.

Monti Aguirre

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International Rivers Network is an affiliate organization of Friends of the Earth International.

The Damming of Latin America

History Threatens to Repeat Itself as a New Generation of Boondoggles and Bad Deals Surfaces

by Glenn Switkes



Dams for power... dams for irrigation... dams for development. Latin America's energy planners have tapped all possible sites and all possible reasons in their schemes to dam the region's rivers. There is even a nightmare of a blueprint by the US-based Hudson Institute to dam the Amazon and its tributaries, as part of a Cold War-era plan to create a series of "Great Lakes" on whose shores people from around the world would seek shelter in the event of nuclear war.

Huge dams became imposing monuments to the military despots who seized power in Latin America during the 1960s, '70s and '80s. Notorious dams such as Itaipú, Guri, Tucuruí and Yacyretá became the centerpieces of ambitious plans to expand mining



Photo: Aguirre-Switkes/Amazonia

The Kayapó led the fight against Xingu Dam in the '80s.

and industry. They also lit the bare light bulbs in the swelling shantytowns around Asunción and São Paulo where the victims of rural land wars took refuge.

Many of the rivers of the region were strangled by these projects, turned into staircases of dead lakes, but the military regimes were content as long as the dollars continued flowing freely into their coffers. Meanwhile, Latin America's debt to foreign banks was rising at a dizzying rate. As the World Bank looked the other way, hustlers trafficked millions of dollars in phantom steel and cement, rose to become senators and presidents, then borrowed even more money

for the next round of boondoggles. Equipment suppliers and engineering consultants from Tokyo and Oslo peddled their services, passing unmarked envelopes to public officials as appreciation for their cooperation. Yacyretá Dam went \$10 billion in debt, Itaipu \$20 billion. At least 40 percent of Brazil's massive foreign debt was run up for investments by the electric sector. The dictators must have known they wouldn't be around to see the bills become due.

Millions of people were forcibly removed from their homes as their lands were flooded. Deprived of their livelihoods, their food supplies depleted, their water polluted, these mostly rural people were pushed further into poverty by these so-called "engines of development." Shocking images form a grim scrapbook of the region's dam-building heyday: monkeys howling in the rising waters, millions of hectares of rainforests and other critical ecosystems drowning in stagnant black water, indigenous families being led away from age-old communities to shabby relocation camps, fish floating belly up, and hired gunmen to keep project opponents from taking to the streets in protest.

Dissent was brutally crushed in a number of hushed-up incidents. In Guatemala, Chixoy Dam opponents were murdered. In Paraguay, the police bludgeoned squatters who built makeshift huts on the shore of Yacyretá reservoir. In Colombia, the oppression against dam opponents continues, with the brutal assassination of indigenous leaders.

As the era of free spending came to a close, society began to awaken to the problems posed by large dams, and to view them as symbols of the political repression the region had suffered – and to face the daunting fact that, in the end, they would be paying the bill. The budding of democracy in Latin America was vividly confirmed by television images of a Kayapó woman warrior running the blade of her machete across the cheek of a power company director in Altamira and by thousands of farmers in the south of Brazil daring to occupy dam sites and electric company offices.

Environmental regulations now make the process of planning and approving a dam more rigorous and therefore more costly. At required public hearings, communities mobilize to express their opposition to the appropriation of their water resources by multina-

tional corporations and national economic groups.

Now, the works of the dam pharaohs and their vast power transmission networks are up for sale. Private companies from around the world are interested in buying state electric companies, but only if the national governments help finance the takeovers. Some 38 percent of the cost of Brazil's electric sector "privatization" has been funded by loans from the country's National Development Bank.

As the last dams from the 1980s are now being completed, years behind schedule and billions over budget, the dam builders say they have learned from their mistakes – acknowledging studies that were never done, resettlement plans that are not complete, reservoirs that were poorly planned. Still, large dams remain the most visible manifestation of political and economic power in a region where politicians gain votes based on the scale of the engineering works "they" build. Large dams continue to be promoted, planned and built in the region, as the stories in this issue attest. According to industry analysts, the leaders in hydroelectric potential in Latin America are Brazil, Venezuela, and Argentina. Even with negative economic growth, sector planners continue to present the spectre of an energy crisis and the risk of blackouts to justify a return to the large dam era. They have earmarked untouched river systems thousands of kilometers from population centers as the next to be sacrificed for dam development.

Latin America continues to remain fertile ground for Northern dam builders who can no longer sell hydro technology in their own countries, where most major rivers are already dammed and rising environmental consciousness has caused large dams to fall out of favor. Nations like Bolivia, desperate for export revenues, are beginning to offer themselves as energy colonies to provide hydroelectric power to neighboring countries, much as Paraguay projected itself as the "Kuwait of South America" in the 1980s.

The raging international debate about the costs and benefits of large dams has not yet reached decision-makers in Latin America. But the debate is widening, as the fishermen and indigenous people who resisted earlier dams are now being joined by city dwellers who have come to realize they also rely on clean and healthy rivers. Citizens' groups

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“We Are Disappearing Like the Bocachico”

Life After Urra Dam: Sketches from a Campaigner’s Notebook

by Monti Aguirre

A wave of hot humid air hit my face as I approached the exit door of the airplane. We had descended 2,600 meters to sea level from Bogotá, Colombia’s capital, to Montería, Córdoba’s state capital. A gentle breeze moved the leaves of the *matarratones* (“mice killers”), a tree from my childhood, as we waited for a taxi to take us to the city of Lorica, 30 minutes away. And waited.

The purpose of this trip was to meet with fishing and indigenous communities affected by Urra I, a 340-megawatt dam on the Sinú River which is nearly complete. IRN had received e-mail messages alerting us of the dam’s environmental and social impacts. Campaigners at IRN receive many messages every week from people whose rivers are threatened by large dams or other major projects. Usually, they ask for help finding information on a project or some other specific support for their campaigns. It can be very difficult to prioritize which projects to take to the next level of support; we do not have the resources to turn all of these requests into full-blown campaigns. For me, this Colombian dam had special significance, as I was born in the region where it is being built.

“Do you like bocachico?” Ramón asked, as he passed a plate of the fried scaly river fish, and boiled manioc. “I do,” I said, smiling at the memory of my mother throwing her gill net into the waters of the Magdalena River many years ago. Ramón will act as my guide for a week of visits to 20 of the 89 riverside communities which comprise the Association of Producers of the Lorica Wetlands (ASPROCIG). ASPROCIG, of which Ramón is a member, works on the dam issue in addition to development projects for fishing communities in the area.

We visit a pond where fish are bred. “Several communities now have fish ponds – not to release into the river, but for consumption and to sell, if there is enough. We are trying to breed local turtle species, and trying to help a come-back of the river otters. This is not the solution to the problems the dam is causing, it is an experiment. We have to begin somewhere,” said Ramón. He peered out to the river and said, “We never imagined a dam in the Sinú, and thought less of how it was going to affect us.”

“How did you begin fighting the dam?” I asked, feeding the fish with green *totumo*, a local fruit.

“We have a tradition of organizing on land tenure issues in this area which goes back 50 years; and primarily we got together to defend our existence as fishing communities along the Sinú River. When we heard of the dam, we had to add that fight to our work, even though many of us had never even seen a picture of a dam.”

History of Degradation

The Sinú basin has already suffered many changes, of which the dam is just the latest. In 1947 the Sinú River changed its course, and although this was a natural process, it led to the salinization of mangroves at the delta. Later, schemes by government agencies and big landowners dried up wetland areas, giving way to colonization, cattle ranching and agribusiness. Large areas of the basin have been largely deforested, and the erosion of river banks has caused severe sedimentation of the river. If flow releases at the Urra Dam are not properly managed, the river’s sedimentation problems will increase.

As Ramón and I walk along the riverbank, canoes emerge from the dense morning fog on their way to the market with the day’s catch. “The women are the ones who sell the fish. When the dam project began, the bocachico began to disappear. You can only see small fish now, the big fish are gone,” said María as she took the guts out of a bocachico. “Some of us had to go to work as maids in Bogotá, we needed to support the family. The men were not happy, they said the dam affected them because they had to go to bed alone,” she said with a laugh.

“Some women came back and instead of moving away, we decided to organize. We got together to defend our work as fish-selling women. We are 50 women now, and a few men joined in with us,” María said. “Even though we are all illiterate, we want education for our children. I sent my three children to school, two have already finished high school. The bocachico educated them.”

Later, with the noon sun beating down on us as we walk along beaches at the delta of the river where it flows into the Caribbean Sea, Ramón talks of the communities’ growing understanding of the basin’s fragile systems. “We know that some of our practices, such as using drift nets, have contributed to the diminishing of the fish. We realized that we had to change back to using the gill nets,” said Ramón. “We also had to

think of other ways of preserving the mangroves, and communities made small canals from the river into the mangroves, to reduce salinization during the dry season. When the rains come, we close the canals,” he said.

“But our efforts to remain as fishing communities is always interrupted by something – the narcotraffic, the paramilitaries, colonization, the big landgrabbers, and now the dam. When we first heard of the dam, it was not because the company involved us in the process. In fact, when a professor from the university tried to organize a public audience, he got killed. By now many who opposed the dam or wanted to open a participation process have been killed,” Ramón said.

The fishing communities have fought in court to be taken into account, and demanded that a mitigation and compensation plan be put into effect by project authorities. The court’s ruling mandates that government and development agencies and corporations working in the area stop activities which contribute to the drying up of the wetlands. The court also mandated dam royalties be used for the required consultation process by the affected communities. Further, the court established that it will only give the license for the filling of the reservoir and operation of the dam when the adoption of necessary measurements are guaranteed.

As Ramón, María and I sat down to have dinner at a riverside restaurant one evening, a refreshing breeze came from the darkness of the river. This time the fried bocachico was served with plantain and rice. “We are disappearing as fishing communities. We are disappearing like the bocachico. Where else are we going to go? The situation in the country is very tense, and to join the poverty belts of cities like Bogotá – no, I don’t think so, that is no life for us,” María said.

After days in the riverside communities, the next stop is Tierra Alta, the town closest to the dam, where close to 4,000 peasants were relocated from lands to be inundated by Urra reservoir. Travelling here gave me an uneasy feeling: the area is under siege by paramilitaries and guerrillas. As I write now, it is with the heavy knowledge that in the months since I left the area, Lucindo Domico and others were killed here (see cover story).

Rows of identical yellow houses with green roofs line the straight streets of this hot, silent town. Sitting under the eaves of

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his house, a relocatee says Urra gave the families houses with backyards. "We got one with three bedrooms," he said. "The company pays for the electricity, and some people got some land." After talking for an hour, he gazed out into the distance and said, "Some people have left already. We never lived in towns before; we were used to planting our food at our farms and living off that. But we didn't have a choice, we had to do what they wanted us to do, and leave our lands. We can't even speak about these matters, people are afraid."

Marta used to live in a lively small port on the Sinú river which depended on small-scale river-based commerce. "We had a good, comfortable life," she said, "I made enough for my children and keeping the house. Now, the port is too far away from Tierra Alta where I was relocated, how am I going to support my family?"

We Are Like River Otters

At the Embera community house in Tierra Alta, we sat outside under a huge almond tree, perhaps the coolest spot around.

"Damming the river is like obstructing a vein; it affects the whole body, and then comes sickness," said an Embera man. "It is the same with a river. Water, mountains, earth, animals, that is the life of the indigenous peoples. The life of people here is the water."

When the river was channeled to allow for the construction of the dam, the changes were soon felt. "We used to take the plantain and fish to sell down the river. Now two years have gone by and we have not been eating well, that is how you get sick. What does the building of Urra mean? What is going to happen when the construction finishes, what do they want to do with the Indian people?" asked an Embera man.

The Embera people joined ASPROCIG in their fight against the dam. "We are thinkers in a traditional way, but we have to learn of pisciculture now. Our stomachs make us learn. We joined in with others who are also being impacted," he said.

"We didn't have clear information about the dam, we didn't know what it was, but we understood that it was going to flood our

territories, our sacred sites, our medicinal plants, the animals, even the microscopic ones. This struggle has been hard, we made lots of sacrifices. We are hungry, and are threatened; but we have to howl out, and cry out no matter what. Many of our people have been killed because they oppose the dam. Both guerrilla and paramilitaries harass us. Our canoes and motors are burned, and we are asked to leave our houses."

I am deeply moved by the resistance and the will of the communities of the Sinú River Basin to defend their rights and to defend their ways of life. Local economic forces and international financial institutions have played a major role in the construction of the dam and in bringing chaos to the Sinú.

As I write this, I learn that Ramón is now in hiding. ■

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being excluded in the planning for the dam, the Embera-Katío and the Association of Producers for Community Development of the Lorica Wetland (ASPROCIG) took the process to court last year.

Consultation with affected people has been abysmal. Said one indigenous woman affected by the project, "We weren't informed about the plans for the dam, everything was done behind the people's backs. We asked the president of Colombia, the ministers, the ombudsman, representatives of other countries at their embassies, the World Bank, and we went to Bogotá to talk to the president of Urra."

As the Embera leaders have pressed for more consultation, their communities have increasingly been hit by violence. Four other leaders who oppose the dam were in hiding at press time, because their lives were threatened. Communities are not hopeful that the negotiations between the company and themselves will end successfully, given the present threatening conditions.

Recently, fishing communities affected by the project informed the Ministry of the Environment and project officials that they would no longer participate in any dialogue about the project until their security is guaranteed.

Independent Observers Needed

According to Armando Valbuena Gourity, President of the Overseeing Commission of

the Embera-Katío of the Upper Sinú Case (a commission created by the National Indigenous Organization of Colombia), the Embera-Katío have requested that international organizations send independent observers to the area to form an oversight commission, because of the violence by armed groups which occupy the area. Independent observers could also help ensure that the court ruling in favor of the Embera people is upheld.

Because observers could themselves become targets of paramilitary violence, the likelihood that this option will become a reality is slim. However, at press time, Baltazar Garzón, the Spanish lawyer in charge of the process against Chile's Ex-President Augusto Pinochet, showed interest in becoming a member of such an oversight group. "The international community should demand that the Colombian government minimally fulfill their duties," said Garzón.

The Embera letter to the Spanish ambassador attacked government development policies, which they said "do not take our existence into account and moreover seek to overturn gains we have made in order to advance development projects which will mean our death ... In November 1998, following two years of trying to resolve some problems with the company and local and national government authorities through

dialogue, the Constitutional Court issued a decision in our favor, ordering the suspension of the filling of the reservoir while a consultative process took place to implement compensation and other means to guarantee our ethnic and cultural integrity." But the Embera statement said the court's decision has not been respected.

The Emberas are asking for a monthly food and transportation subsidy of US\$100 per person per month for 20 years; an increase in the boundaries of their territories; financial support for their education and economic projects, and the provision of security for their communities. Urra is offering \$30 per person per month for the food and transportation subsidy for 20 years, and a partial subsidy for education and economic development. Urra also proposes to make communal payments of \$35,000 per month for 50 years to pay for flooded lands.

Meanwhile, in Sweden, protestors criticized the Skanska company, constructors of Urrá Dam, at a recent shareholders' meeting and called for the Nordic Investment Bank, which financed the dam, to hold Skanska responsible for the welfare of the Embera. Skanska's manager, Claes Björk, told reporters that he had "heard only rumors" about what had happened in the upper Sinú, and said he would personally talk with Colombian President Pastrana. ■

Gouging Out the Heart of the River

Channelization Project Would Destroy Brazilian Rivers for Cheap Soybeans

by Glenn Switkes

Representatives of eight indigenous nations whose lands lie along the Tocantins-Araguaia-das Mortes Rivers, which the Brazilian government plans to convert into a water highway, joined forces earlier this year and forcefully declared their opposition to the project.

Leaders of the Xavante, Karajá, Apinajé, Xerente, Tapirapé, Krikati, Krahô and Javaé people stated: "The hidrovía project ... is only concerned with the production of soy and other grains which will be used to feed pigs, chickens, and cattle in other countries, while Brazilian citizens go hungry, feeding themselves on garbage, without jobs which could assure them a life with dignity. Could it be that the lives of these animals are worth more than our rivers, our lives, and the lives of riverbank dwellers?" (See opposite page for full statement.) In all, more than 10,000 indigenous people would be directly affected by the hidrovía.

The Tocantins-Araguaia waterway is being designed primarily to open year-round access for barge convoys, with the goal of lowering the cost of soy exports from central Brazil to markets in Europe. Transport Ministry officials have also said the waterway will be used to bring agricultural amendments such as fertilizers to ranches in the eastern Amazon region.

Also known as the "Central-Northern Multimodal Transport Corridor," the hidrovía is one of several large-scale waterway projects planned by the Brazilian government which would principally benefit agribusiness corporations, and large shipping and construction companies. These projects' environmental impacts would principally affect indigenous communities along the rivers where these projects are planned.

According to preliminary environmental impact studies prepared by the Tocantins-Araguaia Hidrovía Administration (AHITAR – an independent organ of the Transport Ministry), project works are planned along more than 2,719 km. of the Araguaia, Tocantins and Rio das Mortes river systems. These studies give an incomplete picture of the extent of engineering works planned and their full cost (estimated at US\$220 million for the initial phase). Among engineering works planned are extensive dredging, blasting of rock outcroppings, straightening the watercourse, constructing stationary and moveable



Karajá children, Araguaia River. Photo: Glenn Switkes

dikes, and implanting navigation aids. The Pará State Docks Company responsible for the project has reportedly completed the final Environmental Impact Assessment for the project, but rather than delivering it to the Brazilian environmental protection agency, the company says it plans to take it on a road show – a tactic clearly aimed at garnering political support for the hidrovía.

In the initial phase of the project, the waterway would join existing road and rail connections downstream. In later phases, construction of navigation locks at Tucuruí Dam would permit barges to reach the city of Belém.

In a legal action brought by lawyers at the Instituto Socioambiental in Brasília, the Xavantes in June 1997 obtained a federal court order prohibiting work on the hidrovía, considering the lack of an environmental impact statement and the failure to meet constitutional requirements for projects affecting indigenous peoples.

Some \$120 million of the project's cost would come from public funds, with the remaining \$100 million in financing via loans from international financial institutions. Preliminary discussions have taken place between the Brazilian government, the Japanese Export-Import Bank and the World Bank.

Approval of the hidrovía would represent a considerable public subsidy to the expansion of soy monocultures throughout the tropical savanna (*cerrado*) and transition rainforests of the Amazon. The *cerrado*, covering 1.8 million sq.km., has been the site of

a rapid expansion of soy planting during the past decade, and soy is now taking hold in diverse regions of the Amazon. The *cerrado* is estimated to have 10,000 species of plants, including 420 tree species, and is especially rich in shrubs and grasses with medicinal properties. There are an estimated 400 bird species and 67 mammal species living here.

Insult Upon Injury

Besides deforestation resulting from conversion of *cerrado* to soy plantations, intensive use of agricultural toxics and chemical fertilizers is causing contamination of soils, water courses and aquifers. Erosion is rapidly degrading arable lands. New channels for export of timber would increase deforestation in northern Mato Grosso and the south of Pará, increasing deforestation along the water courses and worsening sedimentation, in turn requiring additional dredging and river alterations.

In addition to this project, the river is facing serious changes whose cumulative impacts are difficult to predict. In addition to the hidrovía's permanent alteration of most of Brazil's fourth-largest river system, there are four new large dams planned along the hidrovía course, plus an additional seven large dams slated for the basin. The dams will undoubtedly obstruct the upstream migration of most Amazon fish species, which need the upstream waters and lagoons for their annual reproduction.

The project would result in a net loss of jobs and worsening socio-economic conditions as small farmers are forced off their lands to make way for mechanized agriculture. Land speculation is expected to increase in an area of some of the most violent land conflicts in Brazil.

The deepening and broadening of the navigation channel would change the hydrology of the river system, accelerating the river flow and leading to a greater incidence of catastrophic flooding affecting riverbank towns and cities during the rainy season. Removal of rock outcroppings could lead to major hydrological changes to biologically important wetlands ecosystems along the river course, including the Pantanal of the Rio das Mortes, and the Ilha do Bananal which, at 2 million hectares, is the largest fluvial island in the world. It is home of the Araguaia National Park and the Karajá



indigenous reserve. Among the endangered species found on the island are the maned wolf, giant anteater, marsh deer (largest of the neotropical deer species), tapir, blue macaw and Amazon turtle.

With the acceleration of the river flow, the micro-nutrients of the river bottoms and lagoons will constantly be disturbed or eliminated, directly impacting fish reproduction. Impacts on fish reproduction and on benthic species could also mean a decrease in the variety and number of fish, river dolphins and other aquatic species, including the giant otter, spotted jaguar and marsh deer.

Most directly affected by the hidrovía would be indigenous peoples and others who depend on the fauna and flora of the river for their livelihoods, and for clean water for drinking and bathing. On the western side of the Rio das Mortes River are two important indigenous reserves of the Xavante nation. The Rio das Mortes reserve is 329,000 hectares, extending for 150 kilometers along the Rio das Mortes, and is the largest continuous cerrado reservation in Latin America. The Areões Reserve is 285,000 ha., extending for an additional 160 km. along the river. A total of 310 km. on the left side of the Rio das Mortes is indigenous territory. Downstream are the reserves of the Karajá, Xerente, Apinajé, Tapirapé, Javaé, Krahô and Krikati, home to some 10,000 people.

The increase in economic activities would surely increase pressures on indigenous lands. Construction would bring outsiders into the region, along with alcoholism, prostitution and an increase in diseases. The social influx would make it more difficult for indigenous people to maintain their culture, religion and way of life.

Until now, the project has been justified on the basis of a cost evaluation of the initial works programmed to open the navigation channel and on an estimate of potential cargo demands. Such evaluations fail to evaluate the range of transportation options available for these products, such as railroads, roads, as well as options such as storage during low-water season. They also fail to address the potential social and economic value of land uses other than soy plantations.

The project would also have an impact on tourism in the region. The Araguaia region is a paradise for ecotourism and fishing. The industrialization of the Araguaia and Tocantins would cost millions in lost tourist revenues, which supply a dependable flow of income to local guides, hotels and restaurants, and potentially to indigenous communities interested in promoting sustainable ecotourism.

The studies to date also fail to incorporate the long-term costs of channel maintenance, an "art rather than a science," as one consulting firm put it. Experience on the Mississippi,

Danube, and Rhine rivers demonstrate that maintenance costs for such projects are far greater than the initial costs of opening the channel, and that larger-scale engineering works will likely be needed in the future as the river responds to changes caused by deepening, widening, and straightening of its curves. Neither the Rhine nor the Mississippi rivers have sandy soils and a high risk of erosion along their beds, as do the rivers of the Tocantins-Araguaia basin. Still, the ongoing costs for maintenance of the Rhine and Mississippi channels are very high. These US channelizations have been presented as the model for the Tocantins-Araguaia Hidrovía. Yet, there is now broad recognition that the long-term environmental impacts of these projects have reached unacceptably high levels, and plans are underway to restore the wetlands which these projects destroyed over decades.

A protracted struggle likely lies ahead as the Brazilian government, soy and navigation interests and their silent multinational partners push for the development of the hidrovía, and indigenous and riverine communities and environmentalists argue in favor of conserving one of Latin America's most important living river systems. ■

Declaration of the Sons and Daughters of the Rivers

We, Chiefs and Leaders of the indigenous ethnic groups Apinajé, Javaé, Xavante, Xerente, Tapirapé, Krikati, Krahô, and Karajá, met for three days in São Felix do Araguaia, Mato Grosso, to discuss the environmental, social, and cultural impacts of the hidrovía Tocantins-Araguaia industrial waterway project.

The Araguaia River, Tocantins River, Das Mortes River, Tapirapé River and the Javaé River are the historic homes of our people, which is why we will fight together so that these rivers which we use for fishing, hunting, bathing, transportation, making camp, and where we perform rituals, rivers with which we have a strong connection as part of our myths and origin stories, will not be destroyed.

The construction of the hidrovía will have serious impacts, such as: pollution of the rivers, destruction of the natural habitat of fish and turtles, prostitution of our women, the drying out of rivers (Javaé, Tapirapé) and lakes, and invasions of our reserves. For this reason, we

invoke article 231, third paragraph of the Brazilian constitution (which guarantees indigenous people the right to be consulted regarding water projects which would affect them).

We understand that the hidrovía project will not bring the development which our region deserves. This is because the project is only concerned with the production of soy and other grains which will be used to feed pigs, chickens, and cattle in other countries, while Brazilian citizens go hungry, feeding themselves on garbage, without jobs which could assure them a life with dignity. Could it be that the lives of these animals are worth more than our rivers, our lives, and the lives of riverbank dwellers?

We have concluded that the hidrovía project will not contribute to an advance in the quality of life of the populations of the Araguaia and Tocantins regions. For this reason, we want the resources destined for this project to be applied in works which guarantee more jobs, in the

improvement of already-existing roads (BR-158 and BR-242), in the conclusion of the North-South and Ferronorte railroads, in improving education and health care, in reforestation of degraded areas, in agricultural projects, and in ecotourism.

We would like that progress that is so often talked about to really be for all. But for this to happen, it is necessary that small farmers, indigenous peoples, and riverbank dwellers participate in it. That is why we will fight so that projects proposed for the region can bring the progress that we all want.

From now on, we trust we may have an open dialogue with the Federal Government in the search for solutions. We feel that, if the government does not wish to have a dialogue with us, this is because it is declaring war on our peoples.

São Felix do Araguaia, 10 March, 1999

Endorsed by representatives from eight indigenous nations.



Dam Fights for the

Numerous rivers in Latin America have been targeted for “dozens of huge, destructive dams for the region. They already provoking controversy and opposition.”

1 Macal & Raspaculo Rivers, Belize

Project: Challilo Dam

Impacts: Will flood 1,100 ha. of pristine forest, home to jaguars, endangered Central American tapirs, southern river otters, and Morelets crocodiles, as well as North American migratory birds and a rare type of scarlet macaw which nests there. The project could impact the largest off-shore barrier reef in the western hemisphere, as well as Mayan archaeological sites, and related tourism.

Status: Environmental studies coordinated by Belize Audubon Society are underway.

NGO Contact: Sharon Matola, Belize Zoo (email: belizezoo@btl.net)

"It took millions of years of evolution for this habitat to reach its current unique state. It is unacceptable to trade that for a dam which, under the best of circumstances, would provide electricity for perhaps 50 years. This is an environmental crime of the highest degree," warns a local biologist.

2 Tibagi River, Brazil

Project: Four dams with total capacity of 970 MW (Jataizinho, Cebolão, São Geronimo, Mauá)

Impacts: Would flood part of last remains of Atlantic Coast rainforest, harm at least 20 endangered bird species, fish resources used by 2,000 indigenous people and 40 archaeological sites. The project will also worsen pollution from urban center of Londrina.

Status: EIA being analyzed by state and federal agencies.

What is being done: NGO lawsuit charges hydroelectric complex to cause "ecocide" and "ethnocide."

NGO Contact: Marco Gonçalves, Instituto Socioambiental (email: marco@socioambiental.org)

3 Xingú River, Brazil

Project: Belo Monte Dam (11,000 MW, US\$8 billion) is the latest reincarnation of the Kararao Dam which spurred an international mobilization led by the Kayapó Indians a decade ago.

Impacts: The regional electric company, Eletronorte, says a new engineering design for the dam will cut the size of the reservoir from 1,200 to 440 square kilometers, limiting impacts on the rainforest and indigenous people. Still, they have not made public details of the new engineering design. The dam will flood the reserve of the Juruna Indians, and part of the city of Altamira.

Status: The concession for building the dam is scheduled to be offered later this year, but the Brazilian economic crisis may force its postponement, since public subsidies will be needed to interest private investors.

What is being done: The movement of dam-affected people, MAB, has been meeting with residents of Altamira to discuss the dam's potential impacts.

NGO Contact: Movimento de Atingidos por Barragens, São Paulo (email: mnab@zaz.com.br)

4 Ribeira de Iguape River, Brazil

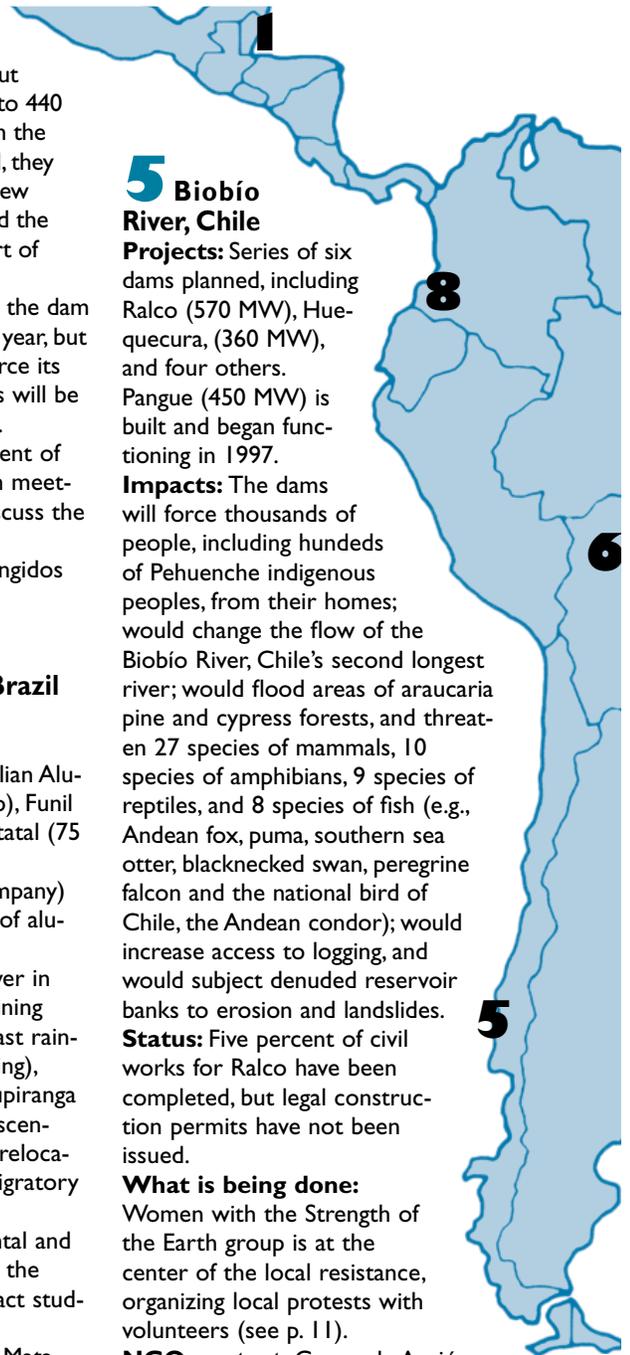
Project: Tijuco Alto Dam (144 MW-Companhia Brasileira de Alumínio/Grupo Votorantim – Brazilian Aluminum Company/Votorantim Group), Funil (150 MW), Itaoca (30 MW), and Batatal (75 MW) Dams (Cia. Energética de São Paulo/CESP - São Paulo Energy Company) being proposed to expand capacity of aluminum plant, and for flood control.

Impacts: Last major undammed river in the state of São Paulo, largest remaining contiguous fragment of Atlantic Coast rainforest (about 13.5% of total remaining), Serra do Mar, Alto Ribeira, and Jacupiranga protected areas, communities of descendants of escaped slaves (*quilombos*), relocation of 5,000 families, impacts on migratory fish species and caverns.

What is being done? Environmental and dam-affected groups are challenging the adequacy of the environmental impact studies for the project.

NGO contact: Elci Camargo, SOS Mata Atlantica (email: smata@ax.apc.org)

"It's incredible how history repeats itself. Once again, they are planning a dam in the worst place possible. I guess it's about proving how much political and economic power you have," says Camargo.



5 Biobío River, Chile

Projects: Series of six dams planned, including Ralco (570 MW), Huequecura, (360 MW), and four others.

Pangué (450 MW) is built and began functioning in 1997.

Impacts: The dams will force thousands of people, including hundreds of Pehuenche indigenous peoples, from their homes; would change the flow of the Biobío River, Chile's second longest river; would flood areas of araucaria pine and cypress forests, and threaten 27 species of mammals, 10 species of reptiles, and 8 species of fish (e.g., Andean fox, puma, southern sea otter, blacknecked swan, peregrine falcon and the national bird of Chile, the Andean condor); would increase access to logging, and would subject denuded reservoir banks to erosion and landslides.

Status: Five percent of civil works for Ralco have been completed, but legal construction permits have not been issued.

What is being done: Women with the Strength of the Earth group is at the center of the local resistance, organizing local protests with volunteers (see p. 11).

NGO contact: Grupo de Acción por el Biobío: gabb@reuna.cl

"The children want their Biobío. They want their land, they want to be here. I am fighting for the children, for my ancestors who are buried here, for the trees and for the Biobío," said a member of Women with the Strength of the Earth.

Next Decade

opment" by the dam industry, which has following are some projects that are

6 Beni River, Bolivia

Project: El Bala Dam, expected to generate 3,000 MW at a cost of US\$2.1 billion. Power will be exported to Brazil.

Impacts: Would harm an area with one of highest levels of biodiversity on the planet, with diverse fish stocks of economic value, affecting rainforests and wetlands, the Pilón Lajas indigenous territory and biosphere reserve and Madidi National Park, including the homeland of Tacana, Chiman, Mosen, Esse Eijas, and Quechua indigenous peoples.

Status: La Paz prefecture has commissioned consultants to prepare studies, and the dam will be offered to private companies for construction. The national Electricity Superintendency is preparing a terms of reference for private consortia interested in building it.

What is being done: Independent studies on key issues surrounding the project are underway, and a series of meetings to discuss the project are being planned.

NGO Contact: Patricia Molina, FOBO-MADE (email: fobomade@megalink.com)

7 Bermejo River, Argentina/Bolivia

Project: Construction of two binational dams on the Bermejo (Las Pavas – 88 MW; and Arrazayal – 93 MW) and on the Rio Grande de Tarija River, Bolivia (Cambarí Dam – 102 MW) for electricity generation, drinking water and flood control.

Impacts: Yungas rainforest, habitat of endangered species, relocation of 700 families, Tariquia Reserve (Bolivia), and Baritu National Park (Argentina).

Status: Comisión Regional del Río Bermejo/COREBE (Bermejo River Binational Commission) in charge of the \$540 million project, on which AES Corp. (US) and Hydro-Quebec (Canada) are involved in preliminary bidding. The Global Environment Facility (GEF) is funding a mitigation plan.

NGO Contact: Miguel Castro, Cerdet (email: cerdet@olivo.tja.entelnet.bo)

8 Guamez River, Colombia

Project: To increase the level of La Cocha Lake by creating a 20-meter dam capturing the waters of several rivers and changing the course of the Guamez river from east to west. Two main dams, Antonio Nariño (125 meters) and Besaco (180 meters), would be built which would produce 1,000 MW, totaling 1,400 MW for the whole project. This multipurpose project would also provide water for the city of Pasto, and irrigation for a major valley.

Impacts: Would displace 4,000 people, and impact La Cocha Lake by flooding the lowest páramo habitat in the world, endangering endemic species of plant (*Espeletia cochenensis*), as well as other páramo flora and fauna.

Status: Studies for the Environmental Alternatives Diagnostic are being conducted.

NGO Contact: Octavio Duque, Asociación para el Desarrollo del Campesino (ADC), email: adc@col2.telecom.com.co

"It is true that we do have a water shortage, but there are other ways of solving that problem. The benefits offered by the project are, for the most part, the fantasies of the promoter. The project would have a serious impact on the future of the region by destroying unique natural systems, displacing local communities, effecting changes in land use, and destroying ecosystems of Amazonian cloud forests," said Octavio Duque, Director of ADC. ■

Photos

Page 8, Upper left – Drowned trees in Pangue Reservoir, Chile.

Page 8, Lower left – Macaws would lose habitat to Challillo Dam.

This page – Native plants would be endangered by a dam project on Guamez River.



Dam History continued from page 3

have begun to acquire the technical sophistication to be able to challenge the industry's contention that dams promote economic and social development.

Many of the dam fights ahead involve fragile ecosystems recognized for their global importance. They involve indigenous populations who have become aware of their constitutional and legal rights, and other traditional populations determined not to be moved from lands their ancestors have occupied for centuries. Many of these dam fights are still not on the radar screens of activists and journalists, but you will be hearing more about them in the future. Here, we try to outline some of the most critical upcoming dam controversies, with comments from the activists who will be on the front lines for the fights that lie ahead.

These dam fights will undoubtedly bring to light better alternatives to the contested projects – information that can perhaps form the foundation for a new energy future for Latin America. With another economic crisis slowing growth, the continent now has an opportunity to re-shape its planning, and move away from dependence on large dams for electricity generation. Vast networks of gas pipelines, being promoted by the multilateral lending institutions, can serve as a bridge to an era of renewable energy, but more needs to be done to hasten a truly renewable future.

Anti-dam forces will have their work cut out for them as they fight for alternatives to destructive river projects. Despite the continent's blistering tropical sun and robust winds that sweep across undeveloped coastal plains, energy experts in the region say new energy sources are still years away from being feasible alternatives. And the nations of Latin America are only now beginning to try to manage demand for energy, particularly by gluttonous energy-intensive industries.

There is a better way, and the time to pursue it is now. In the age of privatization, large dams are becoming even more difficult to fund without large public subsidies. By investing only a fraction of the resources currently poured into dam construction, the region's governments and international aid agencies can pave the way toward an energy path which spares the region's rivers, and its air. ■



Solutions Elusive for Dead Pilcomayo River

by Mike Ceaser

Bolivia's Pilcomayo River begins near the city of Potosí and then winds some 900 km to where it disappears along the Paraguay-Argentine border. But where other rivers bring nearby villages bountiful harvests, cleansing waters and nets full of fish, the Pilcomayo brings mostly fear and worry to those who live alongside it.

"It flows black," said Joaquín Palenque, a storekeeper in the town of Puente Sucre, beside the Pilcomayo. "Before, the water was crystalline." While some question memories of a clear-flowing Pilcomayo, no one disputes that today the river is in crisis. Its upper reaches are poisoned by mining and municipal wastes and are no longer home to fish. Downstream, the river is silting up, literally disappearing under its own load of dirt. The Bolivian press has often described the Pilcomayo as "the world's most polluted river."

"It has lost its naturalness completely," said engineer René Jesús Méndez, an expert in natural resources and environmental issues who has studied the Pilcomayo. "It's a dead river."

Some 42 mineral processing plants near Potosí dump 1,200 tons of tailings daily into the Pilcomayo's watershed. The wastes from abandoned mines further poison it, and cities along the river – none of which have sewage treatment facilities – add their refuse to the river's waters.

Changes in the mining industry in past decades have worsened the Pilcomayo's plight. Twelve years ago the government mining corporation was privatized. Cost-cutting on their minds, the new private miners around Potosí ignored environmental safeguards and began dumping tailings directly into the Pilcomayo's tributaries, environmental expert Méndez said.

Another change was the 1985 drop in tin prices, which caused miners to switch to the more polluting lead and zinc, Cárdenas said. In 1996 a dike broke at the El Porco mine, owned by ex-president Gonzalo Sánchez de Lozada, and sent 330,000 tons of toxic mud flowing all the way down into Paraguay and Argentina. The disaster drew international attention to the river's crisis.

"Don't drink the water!"

The Pilcomayo's poisoning has meant that the campesinos who live alongside it are advised not to drink water that flows past their homes. In the town across the river

from Puente Sucre, residents said they have a well to drink from, though they use Pilcomayo water for other purposes, such as bathing and washing clothes.

But storekeeper Palenque said Puente Sucre residents use the Pilcomayo to irrigate crops, water animals and to drink, after letting the solids settle out.

"It's the only river around here," he explained. The people no longer catch fish, however, since there are none. "(In the past) we caught 40, 50 fish a day," Palenque said. "Now we don't catch any."

Not only has the pollution eliminated the fish, it has eliminated all life on the upper river, Méndez said. "There isn't even algae," he said. Méndez said the Pilcomayo's water is also unfit for irrigation use. Pilcomayo neighbors said that when they irrigate with river water it stunts the crops' growth.

Downstream in the Department of Tarija, the Pilcomayo's pollutants are diluted by the entry of tributaries and fish can survive. Riverbank dwellers there, primarily Guaranís, depend on the Pilcomayo's fish for food and income, but it is a worrisome economy. A 1997 analysis of shad by Dutch and Bolivian researchers found that the shad's livers – the organs which filter out toxins – contained zinc and copper concentrations three to four times higher than the livers of fish from unpolluted rivers. The bones and intestines also contained high heavy metal concentrations. While none of the 40 fish sampled had dangerous heavy metal levels in their muscles, 10 did have concentrations in their fatty tissues higher than health standards used in Holland.

Researchers said the shad were edible as long as the bones and gizzards were not eaten. But because consumers now fear eating Pilcomayo fish, health concerns have damaged the economy of the Guaranís, who depend on selling fish to city markets. A 1998 paper by the Center of Regional Studies for the Development of Tarija concluded that the pollution was causing a migration from the Pilcomayo's banks to Bolivian cities and to Argentina, causing the Guaranís to lose their culture and language.

Sedimentation Problems

Where the Pilcomayo meets Argentina and Paraguay – and then becomes their common border – its huge sediment load has created other problems. Méndez said the Pilcomayo has silted up and made Paraguayan irrigation canals useless.

Shad, the river's economically most important fish, which hatch near the border, can no longer find wetlands they need to feed in.

The river's lower reaches are silting up and turning into dry bed at an average rate of 5.3km per year, according to a paper presented at a 1998 conference on the Pilcomayo. Forty-five kilometers disappeared in 1984 alone. Altogether, 200km of the lower Pilcomayo disappeared between 1970 and 1995. If nothing is changed, it could soon cease to be an international waterway.

The river's retreat has international repercussions because it marks part of the Paraguayan-Argentinean border. Those nations blame Bolivia for the problems.

"Paraguay and Argentina are going to sue Bolivia," predicted Cárdenas of the Sustainable Development Ministry. He said that the European Union has a project for integrated management of the Pilcomayo's watershed, including miners, farmers, loggers and petroleum companies.

Méndez said that cutting off the river's chemical pollution is, in principle, simple. "You have to cut off the source, and the source is (the mines of) Potosí," he said.

At the September 1998 conference Méndez proposed that Potosí's fabled Cerro Rico (Rich Hill), which has been mined since colonial times, be designated a "protected area." Such a designation, more commonly used for pristine natural areas, would not turn the hill into a natural wonderland but would require mining companies to clean up their operations, Méndez said. He said that several techniques, such as installing filters and reusing waters, could dramatically reduce the pollutants flowing into the Pilcomayo. "They're not expensive projects."

But Méndez said miners oppose his protected area proposal, fearing that it would mean ending their industry. "They believe that protecting the hill means putting a lock and chain around it, but it's not so," he said. "It just means using a clean technology."

The pollutants leaching from abandoned mine wastes are a more difficult problem. To reduce them, the old dumps must be encapsulated, land revegetated to reduce erosion and acidic drainage neutralized. Reforestation in the Pilcomayo's watershed would reduce desertification, another problem, and decrease erosion. Méndez recommended copying the technology used by the Inti-Raymi mine near Oruro, "the only one"

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With the Strength of the Earth Women Defend the Biobío River

by Monti Aguirre

“We got together to organize so we would not be forced to abandon our lands. We never want to leave our lands,” said Rosario Huentiao, one of the 12 members of Mapu Domuche Nehuen (“Women with the Strength of the Earth”). These women, who are at the center of resistance to the 570-MW Ralco Dam being built on Chile’s Biobío River, live in the Upper Biobío, a region of scenic narrow canyons filled with cypress and araucaria pine forests, 100-foot waterfalls which feed the magnificent Biobío River, and overlooked by the majestic snowy peak of the Callaqui volcano.

Rosario, Julia, Nicolasa, Berta, Aurelia, Rosa, Irma, Lucy, Maria, Gertrudiz, Francisca and Hilda belong to the Pehuenche Mapuche indigenous group. Most of them are the head of their household. Along with hundreds more people living in this beautiful valley, these women and their families face displacement from the Upper Biobío valley because of the dam.

The women’s group came together in 1998 when civil works began for the dam, which would flood 3,400 hectares of prime

What You Can Do

Women with the Strength of the Earth is requesting donations to help cover the cost of transportation, phone, materials and food. You can also help organize an event to inform the public, request donations for the group, and do letter-writing campaigns.

For more information please contact
IRN: monti@irn.org

agricultural lands, drown native forests and threaten the survival of animal species such as the Andean fox, puma, southern sea otter, blackneck swan and the Andean condor.

Irma explains the difficulties of the group’s fight: “The Pehuenche have little political experience, and many of us do not speak or write Spanish. I didn’t even know that there was an indigenous law to back us up.” The national indigenous law prevents developers from starting construction on projects like Ralco until all indigenous people whose lands would be taken have given their written consent. Irma, who was relocated once before in

1997 for the Pangué Dam – the first of six dams planned for the Biobío – has not given her consent to be moved for Ralco.

Pangué Dam did not set a good precedent for those who would lose land to dams in the Biobío region, as the project’s resettlement was handled very poorly. The National Electricity Company (Endesa), the owner of the project, did not fulfill the environmental and social obligations of its loan agreement with the International Finance Corporation (IFC) for the Pangué project. Subsequently, Endesa and the IFC worked to cover up two reports (both commissioned by the IFC) which were highly critical of the treatment of indigenous resettlers.

Although the indigenous law seems to prevent Endesa from beginning construction on the project until all affected indigenous families have signed authorizations for land swaps, Irma points out the deep tracks of heavy vehicles crossing her land and rips in the earth where tractors have torn out trees. She says this is not the first time that Besalco, the Chilean civil works company hired by Endesa, has gone through her land without permission. “Endesa pressures us a lot, I don’t know why they are pressuring me to sign the land swap if I don’t want to. This land belongs to me.” Of the total 83 families whose lands are required for the dam, eight families have resisted signing. Despite this fact, five percent of the dam works have already been completed.

As Besalco trucks go by, billowing clouds of red dust, Sara explains that Besalco wanted to remove a huge rock sacred to the Pehuenches to build the road. “Some Pehuenche ancestors are buried here, and we fought until the company finally moved the road around the sacred rock.”

Berta, a 71-year-old member of the group, says she is willing to stand up for what is right. “The company is crossing the line. They have no respect for us. They act as if they were the owners of these lands. We are the owners, we have our roots here.”

Difficult Choices

Not everyone was ready to fight when the dam builders came through, however. In addition to language barriers and other problems, open debate about the human consequences of such projects is not one of the legacies of Chile’s long history of political repression and human rights abuses. The quiet farmers in the Upper Biobío are simply



Photo: Monti Aguirre

Berta speaks out.

not accustomed to standing up to authorities.

“Endesa came here two or three years ago to exchange our land, and we signed right away,” said one woman. “We go through a very hard winter from May until August. We don’t have much land here, and we have been offered 22 hectares. We hear that some relocatees have been given a house and a corral for the animals.” She said she is expecting to move away soon with her family. Nevertheless, her son, who says he will not move, is building a house next to hers in preparation for his upcoming wedding.

Endesa has made inroads with some potential resettlers by making promises of jobs and good lands – promises that some believe the company cannot keep. One man who lives in the Upper Biobío comments, “Many men were conquered by the company when they were offered jobs. There aren’t any jobs here. That is why some people are giving away their lands.” Berta asserts that the jobs will do little to solve the social disruption caused by the community’s resettlement. “Men will drink their money and they won’t have one peso in their pocket when the job ends.” Says another man who signed but would rather stay, “The government could help us by providing community development which would help us gain some cash.”

The Pehuenche have been traditionally pastoral, raising sheep and chickens and growing crops. In the summer they take their animals to higher altitudes to pasture. Berta described her daily life: “We plant and harvest our land, time goes by, and the next day, we do the same. I have peaches, plums, apples, pine nuts, wheat, salmon, the copihue tree, and other trees.” Some people who have signed land exchanges did not plant crops during the last planting season, and as their relocation continues to be put off, they have faced food shortages since late 1998.

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SHORTS

More than 60 Bulgarian NGOs signed a declaration on March 31 opposing the ratification of an agreement under which Turkey agreed to purchase power generated by three proposed Bulgarian dams on the Upper Arda River. NGOs were outraged that the agreement went forward despite the fact that an environmental impact assessment has not been completed and that Turkey will be able to buy power for the next 10 years at a price 0.7 cents lower than what citizens currently pay in Bulgaria. The declaration argues that the members of Parliament and the entire population of Bulgaria is being manipulated "to satisfy the foreign corporate interests." A Bulgarian NGO fighting the project is concerned that the dams will totally deplete the river flow and soil fertility along the river. Madan Mistroj, a Bulgarian mining company, has already begun construction and geological studies for the project.

On March 1, the UK government announced it will underwrite a controversial dam project in the Kurdish area of Turkey. The Department of Trade and Industry (DTI) is backing the UK company Balfour Beatty with £200m in a bid to build the Ilisu Dam on the River Tigris, the BBC reports. The dam's reservoir will drown dozens of Kurdish towns along the Tigris valley, including the historic town of Hasankeyf. The dam is being built for irrigation. The World Bank refused to participate in the project because of fears it would increase the danger of cross-border conflict with Turkey's neighbors to the south.

Relocatees for Itaparica Dam, in the arid northeast of Brazil, have filed a second complaint with the World Bank Inspection Panel, saying that after a decade of the dam's operation, thousands of people are still without land and irrigation water. The claim was originally filed in March 1997. Following on-site visits, the Panel recommended that the Board of Directors authorize a full investigation. But in September 1997, the Board voted not to authorize the probe, following the Brazilian government's announcement of a \$290 million "Action Plan" they said was designed to solve the remaining problems at Itaparica. The plan has never been made public. The Board recommended that the Inspection Panel visit the area to evaluate the action plan – a visit which has still not taken place.

News Briefs



DAM BUSTERS

TAIWAN: On April 29, the Legislature dramatically cut the budget for the Meinung Dam for the next fiscal year. Outside, more than 200 Meinung residents and activists demonstrating against the project cheered the politicians' move. The proposed 147-meter dam, to be located in Shuanchi Valley, is estimated to cost US\$2 billion.

Although planning for the dam began in the 1980s, local residents did not learn about the project until 1992. Since then, local opposition has grown dramatically. According to a recent door-to-door survey, over 72 percent of local residents were strongly opposed to the dam.

Local organizations have brought to light serious environmental impacts and technical flaws with the project. The dam will flood 6.4 square kilometers of forest area, destroying habitat for 27 rare wildlife species and three endangered species such as the Maroon Oriole and Hawk Eagle. The dam site is also known to be geologically unstable, posing a serious threat to the safety of nearby residents. Activists charge that the environmental impact assessment for the Meinung Dam is outdated and fails to address these problems.

Although one of the project's primary purposes is to supply water, a recent independent study points out that "the national government's estimate of water demand is based on outdated population projections and does not take into account the current transformations in industry and agricultural sectors and possible water conservation measures." Local governments have proposed alternative ways to improve water supply, including the use of groundwater recharge and conservation measures.

For more information: <http://tc.formosa.org/tean>

KOREA: Activists fighting a proposed water supply dam on the Tong River have been intensifying their campaign since the government announced on March 21 that dam construction will begin in October. Activists held a 33-day sit-in protest, which ended April 24, to

increase awareness about the struggle. Construction of the Yongwol Dam was supposed to start in 1997, but was delayed until early 1999 because of the poor Korean economy and intense opposition to the project. Activists succeeded in delaying the project early this year.

Construction of the dam would flood a "wetland of international importance," as defined by the Ramsar Convention on Wetlands. The Yongwol Dam will also destroy over 20 prehistoric archeological sites, numerous national cultural treasures, and the birthplace of "Arirang," a type of Korean traditional music.

"The EIA needs to be completed before the project is approved. Once the EIA is completed in August, then we can decide whether the project is needed," says Ma Yong-woon of the Korean Federation for Environmental Movement (KFEM), the NGO leading the struggle. KFEM has started a public campaign to reduce water consumption in Korea – currently a high 409 liters per capita per day. "The most important thing to do is change water policy to incorporate demand-side management," says Ma Yong-woon.

For more information: <http://kfem.or.kr/engkfem>

MALAYSIA: Only a decade ago, controversial infrastructure projects here would move forward without significant popular resistance. Today, a 110-meter dam proposed on the Selangor River has been met with fierce organized opposition. Businessmen, indigenous Orang Asli villagers, townspeople, fishermen and raft operators have joined together to form the Concerned for Sungai Selangor opposition group.

The \$526 million project threatens the Orang Asli, or the "original people" of Malaysia. "If this place is lost, our memories are lost," says Ramsit, the headman of Gerachi village. The dam, located 40 kilometers north of Kuala Lumpur, would force the displacement of 340 people living in Gerachi and Pertak. "The land is our only link to our origins," says Ramsit's mother. "Long before the white man and the Chinese man came, we were here."

There are only 105,000 Orang Asli remaining. Some blame their dwindling numbers on excessive logging and Malaysia's push to become a developed nation by 2020. Others point to the government's assimilation policy to move them out of their villages and integrate them into the Malay community. "The Orang Asli out there just have to open up and adjust themselves to the so-called global village. If they choose to remain isolated, it will lead them nowhere," said Ahmad Saleh Sarif, director of the government Department of Orang Asli Affairs.

The Concerned for Sungai Selangor coalition, however, believes that indigenous people should not be displaced for a dam that many believe is not necessary. The group has criticized the project's environmental impact assessment and gathered more than 8,000 signatures of people opposed to the dam. Recently, the group circulated a draft report on the current water resource situation in Malaysia and recommended alternatives for meeting the growing water shortage in the area. The report cites several reasons for the recent water crisis in the Klang Valley, including rapid industrialization, a prolonged drought, leakages and theft of water from the distribution system. The report also predicts that the current water supply shortage of 105 million liters per day in Kuala Lumpur and Selangor can be addressed through demand side management and small-scale harvesting practices such as rainwater collection and groundwater utilization. *For more information:* <http://www.xlibris.de/magickriver>

US: The Southwest Center for Biological Diversity, California Native Plant Society and Tri-County Conservation League filed a lawsuit in a Los Angeles federal court on March 18 to stop the US Army Corps of Engineers from continuing construction on the Seven Oaks Dam on the Santa Ana River. These groups argue that if the dam is completed as planned, several species may become extinct due to the elimination of natural flooding patterns and destruction of alluvial fans. The San Bernardino kangaroo rat, Santa Ana River woolly star, and slender-horned spineflower depend on alluvial fan habitats for survival. Alluvial fans are created when silt from mountains is washed into the river during floods and deposited onto lowland riverbanks. Ninety percent of southern California's alluvial fan sage scrub habitat has been destroyed.

MAKING PROGRESS

EUROPE: The River Rhine is to enjoy more comprehensive protection under a new international convention signed by five

countries in Switzerland in April. The Rhine, one of the most important river basins in Europe, flows from the Swiss mountains through Austria, Germany, France and Luxembourg to the Netherlands. The third international convention on the protection of the Rhine aims to achieve sustainable development in the entire river system, whereas previous versions of the convention signed in 1963 and 1976 were limited to controlling water pollution. Parties to the convention are now taking a more wide-ranging approach, including protecting habitat and giving the river more room to flood. The convention now seeks to re-establish "as far as possible" the natural course of the river. The convention also formally extends observer status to environmental groups for the first time

One of the commission's aims is to reintroduce salmon as far upriver as Basle in Switzerland by 2000. The species disappeared in the 1950s, though water quality improvements have led to a comeback. Salmon ladders are being built to allow the fish to progress past dams. So far the salmon have reached the French region of Alsace. *Environment News Service*

SOUTH AFRICA: In a landmark judgment, the Supreme Court of Appeal of South Africa ruled in March that mining companies and authorities must listen to all interested and affected parties prior to deciding whether or not a mining license should be issued. Until this ruling, communities were deemed to have no say in such decisions, and only needed to be consulted on ways to mitigate environmental impacts of mining projects. The judgment applies to any activity which affects the environment, not just mining.

The suit, brought by the NGO Save the Vaal Environment (SAVE), affects the future of the Sasol North West Strip Mine planned for the banks of the Vaal River. The ruling revokes Sasol's authorization to strip-mine the Riet-spruit wetland on the Vaal River for coal. The company says it will resubmit its application to mine the area, but in the new application process, mining authorities will have to hear all sides before issuing a permit, and must consider the needs of future generations.

The environmental group is gearing up for this next phase. "We have won our process rights to be heard; now we can argue content," says Allan Whittaker of SAVE. *For more information:* <http://www.save.org.za/>

WORLD: Sometime in April, the world's wind-power generating capacity surged past 10,000 megawatts, announced the American Wind Energy Association and European

Wind Energy Association. The two trade groups said that achieving the 10,000-MW milestone is only a prelude to the dramatic growth they expect during the early decades of the 21st century. Worldwide, wind energy capacity has expanded at an annual rate of 25.7 percent during the 1990s, with the total doubling every three years and the cost of production declining steadily as each doubling occurs and economies of scale are realized. Today, the cost of electricity from wind generation is about one-sixth what it was in the early 1980s, and further reductions are expected over the next decade. Industry analysts see the cost dropping by an additional 20 to 40 percent by 2005.

TROUBLED WATERS

ECUADOR: Indigenous communities in the province of Napo, in the Amazon region, are suffering serious health problems they blame on pollution in the Misahualli River, caused by construction work on a new oil pipeline. Community leaders say there has been an alarming increase in diarrhea among children; the appearance of a widespread skin fungus has caused equal concern. The contamination is attributed to waste produced by the Argep company, the builder of the oil pipeline. In early May dozens of indigenous people gathered on a bridge to block the passage of the company's workers before being ejected by soldiers and police. In another area, women and children of the communities held a company bulldozer and its operators hostage.

SPAIN: Toxic sludge is still leaking at the rate of 84,000 liters (22,000 gallons) a day from Los Frailes mine into the river Guadiamar upstream from Doñana National Park, and more than one in 10 of the aquatic birds in the national park are seriously contaminated by heavy metals because of a toxic spill at the mine one year ago. In a recent study, Spain's Council of Scientific Research (CSIC) reported that 11 percent of the birds in the area of southern Spain had high levels of zinc, lead, cadmium and copper in their blood. In some species, nearly one-third were contaminated. Over a year ago, a waste reservoir at a zinc mine some 27 miles upstream from Doñana burst and spilled millions of tons of toxic sludge and acidic water into the Guadiamar River, covering 5,000 hectares and polluting the waterways around the park that lie on the Guadalquivir estuary. *Project Underground*

News Briefs by Susanne Wong

German Utilities Quit Maheshwar Dam

by Patrick McCully

The future of India's controversial Maheshwar Dam is in doubt once again after two major partners in the project, German utilities Bayernwerk and Vereinigte Elektrizitätswerke Westfalen (VEW), stated in late April that they would no longer invest in the dam. The utilities together would have acquired 49 percent of the equity in the dam which is being built across the Narmada River in the central Indian state of Madhya Pradesh.

The two companies' stake in the dam was originally to have been owned by Oregon-based utility PacifiCorp, who also withdrew in May 1998 over concerns about the project's social impacts and local opposition to the huge dam. Bayernwerk and VEW had been under pressure from a coalition of 120 German NGOs who had urged the utilities to respect the wishes of project-affected people and quit Maheshwar.

Almost half of the financing for Maheshwar was to be provided by the German HypoVereinsbank through a \$257 million export loan. Their participation is now thrown into question.

News of the German utilities' withdrawal came in the middle of a hunger strike in the Madhya Pradesh capital, Bhopal, by seven community leaders, including five from villages to be drowned by Maheshwar. The hunger strike was to protest several dams in the Narmada Valley, including Maheshwar. The Narmada Bachao Andolan (NBA - Save the Narmada Movement) called off the hunger strike after 21 days when the state government agreed to meet many of the strikers' demands.

Although the Madhya Pradesh government did not agree to stop work on Maheshwar, it did agree to concessions on a number of the other dams. Some of the more important concessions include allowing a committee of experts nominated by the NBA to draw up alternative plans for providing irrigation and energy to the 20 villages supposed to be served by two dams.

The government also agreed to stop work on the mammoth Narmada Sagar Dam pending a participatory review of the project to be completed by the end of October. Preliminary construction work on Narmada Sagar – the largest of the hundreds of reservoirs planned for the Narmada Valley, and one of the most problematic projects – has been ongoing for several years. The dam was originally to have been completed by 1994.

The government also agreed to stop all work that would lead to submergence in the coming monsoon on two other ongoing dams in the Narmada Valley. Committees that include representatives of the people to be displaced will be formed to plan resettlement and rehabilitation.

The Madhya Pradesh government, however, refused to accept the NBA's demand that it act on the recommendations of a government-appointed Task Force to halt work on the Maheshwar project pending a comprehensive review. The NBA has therefore decided to commission an independent committee to review the project.

Although no reliable surveys exist, it is believed that Maheshwar Dam would displace more than 20,000 people in one of India's most prosperous agricultural regions. No credible plan exists for providing these

people with replacement land or livelihoods. Fierce local opposition to the project has resulted in major dam site occupations, which have been met by beatings and arrests at the hands of the police.

In December 1998, a German environment and human-rights organization, Urgewald, undertook an on-site investigation of the project. During its investigation, Urgewald visited 10 villages in the submergence zone of the dam and met with the project promoter, S. Kumars, and the state agency responsible for resettlement.

"We found a total lack of credible resettlement planning, a shocking disregard for the truth in project documents, and systematic violations of the rights of affected people," says Heffa Schücking of Urgewald. "There is no land available for rehabilitation. The lands being offered are either in the submergence zone of the dam or already belong to other communities."

Urgewald's report also questions the economic viability of the Maheshwar project. It describes in detail the area's thriving economy and concludes: "If a cost-benefit analysis were based on the true costs of replacing the assets and livelihoods of these communities, it is our firm conviction that this project could no longer be considered economically viable."

The withdrawal of the two utilities still leaves a number of foreign companies involved in Maheshwar. The German multinational Siemens is still chasing contracts on the project, and a subsidiary of Swiss-Swedish firm ABB has a \$70 million equipment contract. ■

A summary of Urgewald's report (in English) is available on www.irm.org.

Pilcomayo continued from page 10

without a pollution problem. Together with sewage treatment systems, "this could salvage 70 percent of [the Pilcomayo's water]."

The government has done nothing to clean up the river, Méndez said, even though a national law that says polluters must pay for the damage they cause is being violated.

The mining industry's fundamental problem is inefficiency. Unsophisticated mining operations result in polluted rivers. Cárdenas said miners have made plans to clean up their operations. "The question is whether they'll comply, because it requires lots of resources," said Cárdenas. ■

The author is a writer for the Bolivian Times.

Biobío continued from page 11

In April, after holding a ceremony "to become spiritually strong" as Berta put it, 700 people marched for 35 kilometers to protest construction of the dam. Volunteers – mostly students, environmentalist and indigenous peoples rights supporters from Chile and other parts of the world – have come to the Upper Biobío to support the Pehuenche. The volunteers camp outside the Pehuenche houses and help the families in their daily tasks. But most of all they are there to help provide security for the families. In February, volunteer camp awoke to shootings at two a.m. Armed people shone bright lights at them, while ripping off the anti-dam signs posted on a nearby building.

The protesters have not been deterred. "The children want their Biobío. They want their land, they want to be here. I am fighting for the children, for my ancestors who are buried here, for the trees and for the Biobío," said Berta.

Aurelia Marihawan, president of Women with the Strength of the Earth, said "We don't want the dam, we want them to let us live in peace. I have two children, and I am not leaving. Nevertheless, we get tired of fighting. Tell people we need their support." ■

About IRN

IRN was formed in 1986 by hydrologists, engineers and environmentalists to address the worldwide prevalence of unsound, destructive river-development schemes. Our mission is to halt and reverse the degradation of river systems; to support local communities in protecting and restoring the well-being of the people, cultures and ecosystems that depend on rivers; to promote sustainable, environmentally sound alternatives to damming and channelling rivers; to foster greater understanding, awareness and respect for rivers, and to support the worldwide struggle for environmental integrity and social justice.

Reports

The Asian Development Bank's Role in Dam Building in the Mekong Watershed by Aviva Imhof, 1997. 19 pp, \$10.

Proceedings of The First International Meeting of People Affected by Large Dams. 1997. \$15.

The Relationship Between Primary Aluminum Production and the Damming of the World's Rivers, by Jenny Gitlitz. 1993. 150 pp, \$20.

Considering the Hidrovia – A Preliminary Report on the Status of the Proposed Paraguay/Paraná Waterway Project by Owen Lammers (IRN), Deborah Moore (EDF) & Kay Treakle (BIC). 1994. 60 pp, \$15.

River Dolphins –Can They be Saved? by Elizabeth Carpino. 1994. 42 pp, \$15.

Damming the Rivers: World Bank Lending for Large Dams by Leonard Sklar & Patrick McCully, 1994. 89 pp, \$20.

Lessons Unlearned: Damming the Mekong River, by Steve Rotherth. 1995. 70 pp, \$15.

Technical Review of the Mekong Mainstream – Run-of-River Hydropower Report, by Philip Williams & Steve Rotherth, 1995, 7 pp, \$3.

The following campaign information packets are available for \$15 each: Three Gorges Dam (China) • Pangu Dam / Biobio River (Chile) • Arun III Dam (Nepal) • Nam Theun 2 (Laos) • Xiaolangdi Dam (China) • Lesotho Highlands Water Project (Africa) • Mekong Hydroelectric Development (Southeast Asia) • Hidrovia Dossiers I-5 (South America) • Bakun Dam (Malaysia) • Epupa Dam (Namibia)

Other Resources

World Rivers Review subscriptions are automatic for IRN members. Back issues are \$5.

Large Dams, False Promises, writer and producer, David Phinney; executive producer, Andrea Torrice. 33 min. video, \$35. Features the stories of three dams: Sardar Sarovar (India), Three Gorges (China) and Balbina (Brazil). The stories illustrate the destruction that large dams are causing to ecosystems and riverine communities worldwide.

Silenced Rivers: The Ecology and Politics of Large Dams, by Patrick McCully. 1996. 350 pp. \$20/members, \$25/non-members. This book covers the environmental and social effects of large dams around the world.

River of Words Teacher's Guide. 1996, 50 pp, \$6. Classroom and field activities on watersheds for grades K-12. Supports IRN's international environmental poetry and art contest, conducted annually in partnership with The Library of Congress.

Rowing Partners: 101 Ways to Build Community Partnerships, by Pamela Michael. 1998, 19 pp, \$5. Idea-packed booklet offers strategies and concrete steps to help create local support and enthusiasm for River of Words (or any community project).

Beyond Big Dams: A New Approach to Energy Sector and Watershed Planning, edited by Juliette Majot. 1997. 126 pp. \$20. Explores small scale hydro.

Information Services

World Wide Web: IRN's web site has hundreds of items on river campaigns around the world, links to other sites of interest, WRR articles, maps and much else. Visit it at www.irn.org

IRN's resources are used to support the information needs of non-profit organizations as well as individuals and institutions. General research fee per hour is \$50 (\$25 minimum per request, plus photocopy and mailing charges).

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Belize Dam Threatens Biodiverse Region

by Sharon Matola

The Belize government, along with Belize Electricity, Ltd (BEL), are planning to develop a 30-meter-high dam in what is considered to be the richest area of biodiversity in the country.

The Chalillo Dam would provide supplemental water to a run-of-river hydro project further downstream, thus making up for a five-month shortfall of hydropower which occurs during the dry season. BEL officials say that the dam will double the energy supply currently produced by the present hydro project, and reduce Belize's dependence on the import of diesel fuel from Mexico.

According to a report published in 1992 by Canadian International Power and Agra Engineering, the dam will flood over 1,000 hectares of riverine habitat. This particular type of habitat is not replicated anywhere else in Belize, and from what some scientists have noted, may be unique in all of Central America.

Dr. Bruce Miller, a Wildlife Conservation Society scientist based in Belize, refers to this remote area in the central Maya Mountains

as "a unique habitat found in this area due to the natural floodplain. My concerns regarding the proposed Chalillo Dam are numerous."

Endangered species flourish in this area now threatened by the Chalillo Dam. The Central American tapir and the Scarlet Macaw are just two which call this river valley home. If the dam goes forward, it would effectively eradicate the only known breeding grounds for the remaining Scarlet Macaws of Belize. Tapirs are endangered throughout their Central American range, and reports published by the International Union for the Conservation of Nature (IUCN) refer to this area as one of the last strongholds in Central America for the species.

BEL has stated that an Environmental Impact Assessment (EIA) will be undertaken. However, local environmentalists are calling for a natural resources economist to contribute to the intended assessment. This issue has not been addressed by BEL.

The Belize Alliance of Conservation NGOs (BACONGO) is calling for public participation and debate about the project.

Since the Chalillo Dam would have a tremendous impact on nationally important resources, BACONGO feels that the issue should be put to a national referendum.

Another recommendation insists that the government of Belize should conduct a vigorous and comprehensive review of all the alternatives for generating energy from sustainable, renewable resources before any option is undertaken.

This river system has been called a "wildlife factory," where species live and breed minus human impacts. Creating a reservoir of genetic diversity which feeds into surrounding populations, the area's importance to the overall profile of Belize is enormous.

One local biologist says, "Trading off millions of years of biological evolution for a dam project which, at best, would last 50 years, is an environmental crime of the highest degree." ■

The author is the Director of The Belize Zoo and Tropical Education Center. For more information: belizezoo@btl.net.

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