

Sudan Dam Authority Plans to Push Affected People to Desert

by Ali Askouri

The dispute between the Merowe Dam authorities and project-affected communities, which has been marred by official violence and broken promises, has further deteriorated, raising fears that violence could erupt.

The US\$1.8 billion hydropower dam is now under construction on the Nile River. The project is being built by Chinese and European companies with financial backing by the China Ex-Im Bank and Arabian financial institutions. The dam project will displace approximately 50,000 people (mainly small farmers living along the Nile), have serious health impacts, and far-reaching environmental consequences. The 174-km-long reservoir will inundate an area rich in history and antiquities dating back 5,000 years.

In June, the largest of the three tribal groups affected by the dam, the Manasir, signed an agreement with the River Nile State. The agreement was only made possible by the Nile State's acceptance of the Manasirs' prime demand: to resettle the group around the dam reservoir. The Manasir state that this demand is non-negotiable.

But it is becoming apparent that the authority has other plans, and will force the community onto a harsh desert location, similar to one where a previously resettled community from the dam area has been moved. Just days after the agreement was signed, the dam project's chief executive appeared on national TV, saying of the Manasir's intention to be resettled around the reservoir: "They are dreaming... let them dream."

The agreement stipulates that the Nile State finance a study (to be carried out by a consultancy firm chosen by the community) to assess the technical issues related to establishing small agricultural projects around the reservoir. To properly plan these projects requires that all technical details concerning the reservoir size and dam operations be released to the consultants to enable them to start their technical work. The dam authority has refused to reply to verbal and written requests for release of the data. When all efforts failed, members representing the community met the President of the country and requested his interference. But thus far,

all these efforts have been in vain, and the dam authority states that it is determined to move people forcibly to desert locations.

The leaders of the community say the dam authorities' stubborn refusal to cooperate is fuelling widespread rumors that they have already sold affected peoples' lands to rich Arab investors. The community believes that, in an extremely hot, dry climate where the average temperature is 45 degrees Celsius (113 degrees F), their ultimate survival depends upon remaining on their land near the Nile River.

A leading member of the community states: "Even on Judgement day, we will be the last to leave our land."

Many community leaders stress that if the dam authority continues to obstruct the technical study and refuses to honor the June agreement, a violent confrontation is inevitable. ■

The author is a Sudanese in exile who is working with the people affected by the Merowe Dam. For more information on this dam see <http://www.irn.org/programs/merowe/>

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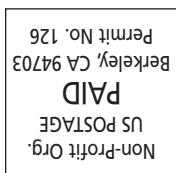
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No Bargain for the Indus Delta

Eyewitness Account from a Visit to a Manmade Disaster

by Peter Bosshard

Thirty years ago, Kharochan was a bustling town in Pakistan's Indus Delta with a population of several thousand. In the rich fields that surrounded the town, the inhabitants grew rice, peas, coconuts, mango and guava. From the nearby harbor Sokhi Bandar – the "port of the prosperous" – the region exported silk, rice and wood to countries along the Persian Gulf and in Southeast Asia. "Those were the happy days," recalls Aladin Khati, a white-haired farmer in his late fifties.

Today, no traces of prosperity are left in the Indus Delta. The port of Sokhi Bandar has disappeared into the sea, and the groundwater has turned saline in large parts of the delta. A white crust of salt covers the earth, and once fertile fields have turned into parched land. More than half of the region's population lives below the poverty line, and thousands of people have left their homes for the sprawling city of Karachi. "What used to be a food security area has turned into a famine area," comments Nazeer Ahmed Memon, the secretary general of the Sindh Agriculture Forum.

The Political Geography of Water

The Indus Delta has not been struck by a natural disaster. Its plight is manmade. The Indus – the world's tenth-largest river in terms of runoff – used to discharge four billion tons of sediments into the Arabian Sea every year. Since the 1930s, the Indus has been dammed by 19 barrages, and its water is diverted into the world's largest irrigation system through 43 large canals.

Due to the dams, the once mighty Indus no longer reaches the sea in most years. Its sediments no longer replenish the delta. The region only receives polluted drainage water from the irrigated lands upstream. As a consequence, the Arabian Sea eats away at the coastline, and saltwater intrudes up the riverbed and groundwater aquifers. Accord-

ing to estimates by Pakistani experts, 8,800 square kilometers of agricultural land have already been lost to the sea since the beginning of dam building. The mangrove forests have been greatly reduced, and the coastal fisheries have collapsed.

According to the laws of physics, water is supposed to flow downstream. The political geography of water is more complex. Clean water tends to flow to the rich and powerful, while dirty water flows to the poor. Pakistan's water politics is dominated by the large landlords, often with a military background, who live in the upstream province of Punjab. The downstream province of Sindh, and particularly the Indus Delta, is left high and dry.

The World Bank is the main architect of Pakistan's irrigation system. The Bank designed the water treaty between India and Pakistan which provided the basis for the system. It financed some of its largest dams and canals, and has a strong influence on the policies that rule the irrigation system.

World Bank Downplays Problem

According to World Bank policies, people who are negatively affected by the institution's projects are supposed to be compensated for their losses. Yet the people of the Indus Delta have never been offered any compensation for the losses that they are suffering. The World Bank does not recognize them as being affected by its projects. According to a 2005 report by the Bank on Pakistan's water sector, the degradation of the Indus Delta is "an inevitable phenomenon and a part of the bargain struck in order to support large numbers of people in the Indus Basin." ■



The school of the abandoned Haji Ismail Jat village on the Indus Delta.

Photo: Pakistan Fisherfolk Forum

In a new water sector strategy for Pakistan, the World Bank proposes that the government build new large dams on the Indus, such as the Bhasha or Kalabagh dams. The Bank plans to allocate \$300 million for such projects in 2009. The dams would divert even more water, and would make the rehabilitation of the Indus Delta impossible.

Social movements and non-governmental organizations such as the Pakistan Fisherfolk Forum (PFF), SUNGI Development Foundation and Action Aid are opposed to the World Bank's dam-building plans in Pakistan. The PFF demands a legal agreement that guarantees downstream waterflows in the Indus sufficient to sustain the ecology and economy of the Indus Delta. It argues that such flows could be assured if water were used more efficiently in Pakistan's irrigation system.

"The very existence of this region depends on the water flows of the Indus," says Mohamad Ayub Sahito, a poor fisherman of Kharochan in the Indus Delta. International Rivers Network will support the efforts of farmers, fisherfolk and NGOs to defend the environmental and economic survival of the Indus Delta. ■

COMMENTARY

Big Hydro's New Clothes

The big hydro industry has found the sustainability religion. The International Hydropower Association (motto: "Advancing sustainable hydropower") held a "Business Summit on Sustainable Hydropower" in Oregon in August. The lobby group is organizing a "World Congress on Advancing Sustainable Hydropower" in Turkey in May 2007. Its board recently adopted a "Sustainability Assessment Protocol" which is supposed to help IHA members assess dams against the IHA "Sustainability Protocol." And it has just gone live with a "Sustainable Hydropower website".

These efforts have been spearheaded by a realist faction who have over the past few years come to dominate the IHA. The realists are led by the group's small secretariat and its members from Hydro-Québec, Hydro Tasmania, and Electricité de France. Unlike the hydro-fundamentalists, the realists are prepared to publicly accept that dam builders have made, to quote IHA President Dogan Altinbilek, "some mistakes."

The realists believe that their industry hit seriously troubled waters in the 1990s, particularly with the release of the report of the World Commission on Dams. As Peter Rae of Hydro Tasmania explained at the Oregon meeting, in order to survive, "an old industry had to reconceptualize itself."

This rebirth is outlined in the IHA's "sustainability agenda," and their bible is the IHA Sustainability Guidelines. The guidelines were approved by the IHA in early 2004 after several years of internal debate and consultation. The impulse to create the guidelines was the fear that the hydro industry would be forced by policy and regulation to comply with the recommendations of the WCD. The IHA sought to avoid this potentially devastating blow by drawing up its own voluntary set of criteria which would show that the industry was aware of its problems and could be trusted to self-regulate.

The IHA's guidelines are a mish-mash of vague good intentions with a slew of weasel-worded get-out clauses, and a heavy dollop of pro-hydro bias. Impacts and mitigation options should be "assessed" and "considered," but if the developer and the government want to build they don't need to let these assessments and considerations stop them. The guidelines are supposed to be applied by hydro developers and operators themselves, with no role for outside bodies in assessing whether developers really have, for example, "made every effort to avoid, or reduce to a minimum, alterations to sites of exceptional national and international value."

The guidelines are complemented by a "Sustainability Assessment Protocol." This allows developers to give themselves "sustainability scores" for how well they meet the guidelines. A developer who believes that their project is based on "comprehensive planning," for example, can award themselves five points. Another who admits their project is based on "no plans" would have to give themselves a zero. If a developer "predicts outstanding safety performance" they get a five. If they predict "very poor safety performance" they get a zero. Given the claims normally made in project proposals, it is hard to imagine developers very often fessing up that their project stinks and deserves lots of zeros.

"Sustainable hydropower" is not necessarily an oxymoron (taking "sustainable" to mean without serious long-term negative impacts on ecosystems and people). Micro-hydro schemes, and "unconventional" hydro based on no-dam turbines in rivers and tidal currents, aqueducts and water supply pipes, for example, can have very low, even zero, impacts. In fact, the US National Hydropower Association has recently redefined the term "hydropower" as comprising these unconventional technologies because they see no future in pushing new big dams in the US.

But to the IHA, "sustainable hydropower" still means "big hydro." And it doesn't mean just the most carefully selected projects in extremely favorable sites with minimal resettlement and environmental impact. As IHA speakers stressed in Oregon, their goal is to dam every last section of flowing river that is economically and technically possible.

One-third of the world's estimated "economically and technically feasible" hydro potential has been exploited at huge cost to river communities and ecosystems (40-80 million people displaced; 34% of freshwater fishes vulnerable, endangered or extinct; populations of freshwater species fell by half between 1970 and 2000, faster than any other major biome). Yet the IHA argues that the remaining two-thirds of undammed potential must also be exploited.

If IHA members believe that all the world's free-flowing rivers can be dammed "sustainably" and without destroying the planet's freshwater ecosystems they are surely delusional. If they understand that damming all of our rivers means devastating impacts on freshwater biodiversity and evicting tens of millions of people, but claim that doing so is "sustainable," they are cynical in the extreme.

Patrick McCully

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Shall We Gather by the River?

Searching for the Spirit of the Amazon

by Glenn Switkes



Bartholomew I, known as the "Green Patriarch," brought 200 people together to shed light on problems facing the Amazon

Scientists and religious leaders do not always see eye to eye. And yet, each offers unique ways of looking at the problems we face today, and each wields a huge influence over society. If these potent human endeavors could be brought together to help solve seemingly overwhelming problems such as the fate of the global environment, imagine the progress we might see.

The Patriarch of the Eastern Orthodox Church, 66-year-old Bartholomew I – spiritual leader of some 250 million congregants – hopes to create just such a synergy to tackle some of the world's most serious environmental crises. He is resolved to build a bridge between religion, science, and the environmental movement through high-visibility pilgrimages on the world's rivers and seas, to shed light on global environmental problems and find common ground for solutions to them.

Prominent scientists on the trip brought sobering messages on the growing threat of climate change and deforestation to the Amazon, and the global implications for permanent change to this critical ecosystem. According to Philip Fearnside of the Amazon National Research Institute, "There is a double-edged sword hanging over Amazonia, with climate change threatening the forest, and the clearing of the Amazon accelerating global warming. We need to take action immediately if we are to halt these trends."

The Amazon Symposium was the sixth environmental event organized by Bartholomew I, and the first outside Europe. He set the tone with a simple observation: "How can one stand before the awesome beauty of the Amazon River without recalling this original plan of God?"

Some 200 spiritual leaders, researchers, and activists cruised an Amazon tributary to experience firsthand threats to the world's largest tropical rainforest. IRN had the privi-

lege of joining this trip and coordinating a debate on the world's rivers.

Participants in the series of seminars and debates included entrepreneurs determined to harness market forces to save the Amazon, grassroots activists fighting the encroachment of commercial soy plantations into the rainforest, indigenous practitioners of native religions, and Brazil's first indigenous lawyer, who is leading the



A young Yawanawá female shaman in parrot feathers and face-paint led a traditional ritual to invoke the spirits that protect the rivers and the people of the rainforest. One of the Christian leaders wondered, "Why is it that the indigenous people have managed to protect the natural environment better than we?"

fight for the recognition of her tribe's ancestral territories.

It was heartening to take part in such a unique "meeting of the minds," a confluence of human intellect and spirituality. As we floated down the Negro River, hypnotized by the ink-blot symmetry of the sky, forest, and their faithful reflection in the cola-colored waters, we could imagine the beginning of an end to man's insensitivity to nature, and sense a merging of purpose among diverse worldviews. ■





Richard Beifuss in the Zambezi Delta.

WRR: Your report notes that the Lower Zambezi basin supports about a quarter of Mozambique's population. Describe the natural "support systems" that sustain so many people. How would improved flows help the rural poor in this area?

RB: The Lower Zambezi is vital to the national economy in Mozambique. Under more natural flow conditions, the annual ebb and flow of Zambezi floodwaters supports extensive flood-recession agricultural systems along the length of the Zambezi. This provides more reliable food security than fickle, rain-fed agriculture on adjacent uplands. It also sustains productive freshwater fisheries, coastal prawn fisheries, and healthy grasslands with a very high carrying capacity for large herbivores in the Delta. Over the past 50 years of river regulation, these systems have all declined precipitously. There is widespread scientific opinion that the restoration of regular, annual, modest flood releases – timed to coincide with the historical period of peak flooding -- would improve these and other systems, providing important socio-economic and ecological benefits.

We looked at how changing the timing, duration and magnitude of the river's flow could help restore some of the conditions that support the people and animal life in the delta. What we found was that the most significant benefit for the rural poor from environmental flows would be improved fisheries. The productivity of Zambezi Delta fisheries is directly related to the magnitude and duration of floodwaters – and even the

Restoring the Zambezi: Can Dams Play a Role?

by Lori Pottinger

The Zambezi River is one of southern Africa's most important lifelines, and its delta is a "Ramsar Wetland of International Importance." However, the Zambezi is also one of Africa's most heavily dammed river systems, and its health is in decline. More than 30 large dams (including two of Africa's largest, Kariba and Cahora Bassa) constrict its flow of water and sediments, and more large dams are planned. A new dam, Mphanda Nkuwa in Mozambique, is farthest along, and is expected to result in a push for industrialization in the Zambezi Valley. Dam-induced ecological changes have already had widespread consequences on wildlife, fisheries, and the thousands of people who call the Zambezi valley home; widespread industrialization would worsen the situation for many downstream users.

Offering a counterpoint to this situation are a number of efforts now underway that aim to restore the river's health through better water management. One important new study outlines a restoration effort based on making Cahora Bassa Dam's water release patterns more closely mimic natural flows. The researchers found that a small (less than 3%) reduction in hydropower production at Cahora Bassa would enable prescribed flood releases that could result in very significant improvements in ecosystem-based livelihoods of downstream residents. Here we talk to lead author **Richard Beifuss** about the team's findings.*

return of small annual floods would improve matters significantly. The prawn industry would also be improved, perhaps substantially, as the lifecycle of prawns is closely linked to the seasonal pattern of high and low flows in the Zambezi. This is a large commercial industry, employing many people from the coastal region.

We're still looking at exactly what kind of flows would most improve the lives of poor rural farmers, including those involved in subsistence and cash crop agriculture, production of natural flooded rice near the coast, and irrigated commercial agriculture schemes. It's harder to put a dollar value on these benefits compared to the benefits of improving the fisheries, because part of the benefit would be reducing the risks of crop failure relative to more fickle rain-fed agriculture, but it's a very promising area as well.

WRR: What kinds of changes to dam operation are you calling for in this new report?

RB: We would like to see the Zambezi River managed as it was originally intended – for multiple objectives including "environmen-

tal reserve requirements" and integrated rural development. At present, Zambezi waters are managed almost exclusively for hydropower generation, with a secondary function of controlling large floods when excess reservoir capacity exists. The water authorities use a monthly flood rule curve that specifies the maximum reservoir water level that can be maintained without risk of overtopping during the flood season.

Reservoir management according to this flood rule curve is particularly damaging to downstream users because it often results in the release of excess reservoir waters during the dry season. These releases scour standing crops from river banks and serve no ecological purpose – the antithesis of what we are trying to achieve with well-timed prescribed floods. Our proposal would include improving food security for downstream users and sustaining the floodplain ecosystems, especially the Zambezi Delta. But keep in mind that this is a preliminary study, aimed more at helping decision-makers understand the value and potential of prescribed flooding rather than making specific prescriptions.

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The next phase would be for the water authorities to develop a specific flow plan for the Zambezi – for both high and low flows.

WRR: *Mozambique has had very damaging large floods in recent years. As you note, “large flooding events in the Zambezi delta are now heavily influenced by reservoir operation.” Would an environmental flow regime offer any improvements in flood management?*

RB: With little or no reduction in total hydropower generation and firm power supply, the dam could release a prescribed flood early in the wet season that would not only have great benefits for people and wildlife downstream, but would also reduce the risk of large floods later in the flood season by increasing the available reservoir storage for incoming flows. Flow releases would be of modest size – sufficient in magnitude to spread floodwaters into the floodplains of the Zambezi Delta, and timed to enable flood-recession cropping systems, but not on the scale of the large, damaging floods such as occurred most recently in 2001. It's important to note that extreme flooding events like the 2001 flood, though infrequent, are inevitable because even large dams like Cahora Bassa and Kariba cannot fully capture Zambezi flows during years of very high regional rainfall.

WRR: *How will this environmental flow plan be impacted by proposals to build future dams such as Mphanda Nkuwa?*

RB: We believe there is a narrow window of opportunity to implement a new vision for managing the Zambezi waters for the health of the delta and the people of Mozambique, as new dam projects will bring new economic imperatives to maximize hydropower at the expense of other uses. Mphanda Nkuwa is always described as a “run-of-river” dam – a description that is usually meant to indicate fewer environmental impacts – but in fact it has a fairly large dam wall. There could still be environmental flow releases from Cahora Bassa if this dam is built, but it is likely to be seen as “wasted water” once there are two dams that could be using the flow to create electricity. Mphanda Nkuwa will be operated for peaking power, which will negatively affect agricultural production on the river banks immediately downstream. And Mphanda Nkuwa will capture the Lium River, one of only four significant Zambezi tributaries that occur downstream of Cahora Bassa Dam, further reducing natural variability of flows and sediment availability.

We'll continue to make a strong case for environmental flow releases, but it will be a harder sell.

WRR: *How might climate change impact this plan for environmental flows?*

RB: Although we have not yet modeled the impact of climate change on the potential for prescribed flooding from Cahora Bassa, some of the climate change models show there will be more intensive storms in the basin – meaning more risk of large floods and less infiltration to sustain dry season baseflows. But in general, greater aridity is expected due to higher temperatures and evaporation. This would mean less water in the Zambezi, less water for all uses. It would likely result in a resurgence of plans to tap the Zambezi for water supply for South Africa and Namibia. Climate change could invalidate all of the design parameters for the dams, and result in reduced power sales from the dams. There would be a desperate need to hold back every drop of water to produce power, at the same time that the river's flows would become more precious for all downstream users and the environment. As institutional acceptance of prescribed flow releases moves forward, we will encourage the water authorities to base hydrological management on a wider range of flow scenarios that account for climate change and increased water extractions and diversions from the Zambezi basin.

WRR: *What do you hope the results will be if your best-case is adopted?*

RB: We would like to see the Zambezi River managed for the full range of water users and ecological systems that depend on it. It is not possible to fully restore historical hydrological conditions in the lower Zambezi River given the water needs for hydropower production. But our work has clearly demonstrated several important points. First, a range of prescribed flood releases can be implemented with little or no reduction in annual hydropower generation. Secondly, such floods can be achieved on an annual basis in all but the most extreme drought years – thus providing for example a vital water source for small-producer irrigation during years of below-average or erratic rainfall. Thirdly, prescribed flood releases would benefit a wide range of socio-economic sectors and ecological processes, and these benefits would significantly outweigh the cost of lost hydropower production. Finally, prescribed floods released early in the wet season provide increased

reservoir capacity for attenuating large flooding events that might occur later in the wet season during years of very heavy rainfall.

WRR: *What gives you hope that this river can be restored?*

RB: There is a lot of good work on the management of the Zambezi right now, and considerable interest in the findings of our report. There is more discussion about environmental flows and water reserves to support natural areas, and more widespread understanding about the need for such flows. The two arguments used most commonly against flood releases – one, that they were strictly for “environmental purposes” and not for human benefit, and two, that they would require unrealistic reductions in hydropower generation – have been discredited. Not everyone agrees about the importance of prescribed flooding, but at least the topic is on the national agenda, and that is really significant. There is also a greater effort now to look at the Zambezi as a whole, from a basin-wide perspective, which can only help the cause.

The Zambezi River is recognized as an economic lifeline for all of southern Africa. Developments in planning include large hydropower dams, water diversions (including the pressure for inter-basin water transfers), navigation, large-scale irrigation schemes, gold and other mineral mining, commercial logging, and other forms of development. In this context, prescribed flooding is of course not a panacea for the Zambezi River, but it can be part of a new vision for sustainable management of the river basin. ■

Dr. Richard Beilfuss is Director of the Gorongosa Research Center for the Carr Foundation, based at Gorongosa National Park in Mozambique. He has worked on research and conservation activities throughout the Zambezi River basin since 1995.

**The report, Assessing Environmental Flow Requirements for the Marromeu Complex of the Zambezi Delta, is available at http://www.gorongosa.net/research/research_documents.php?l=eng*

What is IRN Doing?

We are working with local NGOs to analyze the proposed Mphanda Nkuwa Dam project, and to work to ensure the next energy project for Mozambique does not do more harm than good. For more information: <http://www.irn.org/programs/mphanda>

Damming Burma's War Zone

Proposed Salween Dams Cement Military Control Over Ethnic Peoples

by Salween Watch Coalition

The Salween River – Southeast Asia's longest undammed river – supports a wealth of biological and cultural diversity. Its rich natural resources support up to 10 million people from its headwaters in China to its estuary in Mon State, Burma. But its days as a productive natural lifeline may be numbered in Burma, where the repressive military dictatorship is conspiring with the Thai government, Thai investors and Chinese dam builders to build a series of large dams in civil war zones in Burma. The dam cascade, secretly negotiated over the past decade, will be built in an area where peoples of a variety of ethnic minority groups are systematically being displaced – or worse, robbed, tortured, raped or executed. The dams are part of a military strategy by the dictatorship to increase control over the ethnic peoples of Burma, their lands, and their rich natural resources.

Despite the high risk of operating in a war zone, and in what Transparency International rates as one of the world's five most corrupt countries, the Salween dams, esti-

mated to cost at least US \$10 billion, would be by far the biggest ever investment in Burma. The dams inside Burma and on its borders would have a combined capacity of up to 14,000 megawatts (MW) and would include the single largest dam in Southeast Asia, the Ta Sang. A recent spate of agreements has solidified construction plans, although it is currently unclear how the September 2006 coup d'état in Thailand will affect these plans.

Thailand's Double Standards

Thailand has already over-exploited much of its own natural resources and faces strong civil society resistance to building domestic dams and coal-fired power plants. In response, Thailand has turned to neighboring countries with authoritarian governments whose citizens cannot question government-backed projects such as large dams. Thai officials have stated that the main purpose of the Salween cascade of dams is to provide large amounts of "cheap" electricity to Thailand and "much



Photo: Salween Watch

Karen woman protests Salween dams near her home.

needed foreign exchange" to the Burmese military regime. Thailand's political and financial support for dams amounts to direct complicity in the Burma Army's oppression of the peoples of Burma.

Where the Salween runs along the Thai-Burmese borders, at least 13 ethnic groups live along its banks. Under the current Burmese military regime, there will be no public participation regarding the dams. Few if any of the communities who will be forced to bear all of the negative impacts from dam construction will get any benefit or compensation. Although Burma faces a major and prolonged energy crisis, the country and its people would receive little electricity from the Salween dams.

Secrecy shrouds the Salween dam's development process. Agreements signed in May and December 2005 between the Thai government and Burmese junta contained strong clauses preventing disclosure of information regarding the dams. These agreements run contrary to the 1997 Thai constitution, which grants affected peoples rights to information, as well as participation in decision-making on natural resource management.

In Burma the dams are not only about realizing the country's hydropower poten-

continued opposite

Proposed Dams on the Salween in Burma

Hat Gyi: Officially slated to be the first of the cascade to be built, this dam would be located 40 km downstream from the Salween-Moei River confluence. However, uncertainties remain about the exact site and size of the dam, with official statements varying from 600 MW to 1,800 MW. The dam is estimated to cost US\$1 billion. In June, the Electricity Generating Authority of Thailand (EGAT) signed an MoU with China's Sino-hydro Corporation to jointly develop the Salween dams in Burma. Landmines have been strewn throughout the area, one of which recently killed a worker involved in the feasibility study survey, prompting the consultant team to withdraw from the site.

Ta Sang: The 7,110 megawatt Tasang Dam, the largest for Southeast Asia, would have a concrete wall 228 meters high and a reservoir approximately 475 kilometers long. The site is in southern Shan State, approximately 80 kilometers from the Thai border. Pre-construction planning, orchestrated by the private Thai corporation MDX Power Plc, is far more advanced than for any of the other dams. The detailed design of the dam was underway in March 2005 and may already be finished; sources allege that most of the project financing is already in place.

Wei Gyi: The Wei Gyi dam site is located on the Thai-Burma border in Karen State, near Mae Hong Son Province, Thailand. The 168-meter-high dam is expected to generate 4,540 MW of electricity. The reservoir, located mainly in Kachin State, will stretch 380 km upstream.

Dagwin (a.k.a. Tata Fang): Located on the Thai-Burma border south of the Wei Gyi site, this dam will have a capacity of between 500-900 MW. The dam would however mainly function as storage for water released by the upper dam during peak hours, pumping water back up into the Wei Gyi dam using surplus off-peak power.

Knowledge is Power: Community-Based Research

By Carl Middleton and Pianporn Deetes

Community-based research in Thailand, known as Thai Baan research, is reinventing the way that villagers and decision-makers perceive and value local knowledge and experience. *Thai Baan* means villager. The Thai Baan method enables local people to take responsibility for understanding and revealing knowledge about their relationship with natural resources because, from conception to dissemination, villagers themselves are the principal researchers. Thai Baan research has been effectively applied by communities threatened by the development of dams, and those looking for better ways to manage their local resources.

Villagers involved in the decade-long struggle that forced the Thai government to temporarily decommission the Pak Mun Dam pioneered the Thai Baan methodology in 2001. Recognizing that traditional research methods used by development experts commonly misunderstand or ignore the complex relationship between local livelihoods, culture, and river-based ecosystems, affected villagers seized the opportunity to conduct their own research on the impacts of opening the dam's gates on their lives and the Mun River ecosystem. Over 14 months, 200 villagers from 65 communities recorded data on fisheries, fishing gear, use of native herbs, vegetable gardens, ecosystems, and impacts on social, economic and cultural aspects of their lives. Staff from a local NGO, South East Asia Rivers Network

(SEARIN), and volunteers acted as research assistants, assisting with recording data, writing the report and facilitating field surveys. Villagers, however, were the primary researchers and were involved in every step of the research process.

The villagers' research revealed that over 156 fish species returned to the Mun River following the temporary opening of the dam's sluice gates. Fishing gear made obsolete by the dam was put back into use. Villagers living on the banks of the Mun River and its tributaries resumed catching fish, cultivating vegetables in riverbank gardens, and collecting plants and herbs. Thai Baan research demonstrated that opening the dam's gates had a definite positive impact, and nowadays the gates remain open for four months of the year, although the struggle continues to permanently decommission the dam.

Since Pak Mun, local communities have increasingly applied the Thai Baan research methodology. SEARIN has assisted villagers to set up similar research in four river basins to date.

Thai Baan on the Salween River

On the Thai-Burmese border along the Salween River in Mae Hong Son province, Thai-Karen ethnic communities concerned over the proposed development of a cascade of dams decided to apply the Thai Baan methodology to demonstrate the value of the river's natural resources to

decision makers. While the Thai Government only recognizes a small number of settlements in the area on official maps, in reality there are over 50 villages and all participated in the research.

For two and a half years, villagers applied the Thai Baan method to investigate fish species, traditional fishing gear, agriculture methods, indigenous fauna, and the culture of the Thai-Karen. The research identified 18 ecological systems, and 15 sub-ecosystems along the tributaries with a rich diversity of fish species and sources of food for villagers. "Engineers may see only water, rocks, and sand. But we see our fishing grounds, riverbank gardens, and our lives," said Nu Chamnankrirkrai, a village researcher. The research also explored ceremonies the Thai-Karen villagers perform in appreciation of the land, river and forest that provide for their families.

The report was launched in a village along the Salween in November 2005. In attendance were community representatives, government officials, and journalists. The research report was submitted to the Electricity Generating Authority of Thailand and other relevant state agencies. In March 2006, villagers organized a public forum to discuss the research findings and potential impacts of the dams. "With the research, we hope the decision-makers in Bangkok will consider our lives and our resources that we preserved for generations," Nu says. ■

For further information: www.searin.org

Burma continued

tial. In the context of the almost six decades of war against the ethnic peoples of Burma, the dams present a strategic, political and economic weapon of the military regime to increase control over ethnic peoples of Burma and their cultural heritage. All of the planned dam sites are in areas where civil war against ethnic peoples continues to take lives, forces people from their land, and prevents hundreds of thousands of people from returning to their villages and farms. Some of the project site areas are heavily landmined to prevent displaced populations from returning. Many of the surrounding areas are classified as "black zones" where people are shot on sight by Burmese soldiers, or tortured and killed on

suspicion of giving support to rebel ethnic resistance groups.

Worsening Internal Displacement

The dams will have a major, permanent impact on the local ethnic people, most of whom have already suffered displacement and dispossession as internally displaced people or refugees. Preparations for the dam construction in Karen, Karen and Shan States – which includes militarily securing the dam sites – are linked to human rights violations, deforestation and massive forced displacement. However, these connections have been blurred by the ongoing civil war.

Between 1992 and 2004, the number of army garrisons in Papun District, where two

"If the dam is constructed, not only will the Salween River stop flowing but so will Shan history."

A villager in proposed dam area

of the proposed dams will be located, increased from 10 to 54. Of the 85 villages in areas close to the dam sites, only a quarter remain. Former residents were forcibly

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Honoring Heroic Dam Activist

by Aviva Imhof

Human rights violations against dam activists have been on the rise in the past year. In Mexico, the Philippines, China, Nepal, Brazil, and elsewhere, our colleagues and friends have been imprisoned, severely injured, and even killed. The increasing surveillance and repression of dam activists is a troubling sign for our movement, although it is also a sign of the movement's growing strength and impact. As a reminder of the heroic efforts of many of our partners who risk their lives every day to fight for their rivers and rights, we feature some of their stories below.

Political Assassinations in the Philippines

A coordinated series of political killings has rocked the Philippines over the past two years. In 2005, Amnesty International recorded 66 political killings of mostly left-wing activists, while in the first half of 2006, 51 political killings had already been recorded. Dam activists have been amongst those killed.

On June 8, 2006, Rafael Markus "Makoy" Bangit, an indigenous tribal leader, was killed on his way to join his colleagues in the offices of the Cordillera Peoples Alliance (CPA). Makoy was at the

front line of the successful opposition against the Chico Dam Projects in the late 1970s, which would have submerged his village in Kalinga Province. Since that time, he worked relentlessly for the defense of ancestral lands and resources and the protection of the environment and rights of indigenous communities.

A month after Makoy's assassination, another influential leader of the CPA was ambushed together with his wife and daughter. Dr. Constancio "Chandu" Claver, the Vice Chair of CPA (Kalinga Chapter), was wounded while his wife, Alice Omengan, died from several gunshot wounds. Chandu and Alice were known for their participation in the successful campaign to protect the Chico

Funeral procession for Eduardo Maya Manrique.

River from mine waste dumping in the early 1980s. The mining operation had affected thousands of farmers who used the river for their irrigation and domestic water needs, and was shut down after massive protests

Murder in Ecuador

Andres Arroyo Segura's dead body was found in late June, close to the site of the proposed Baba Dam. Arroyo headed the bi-provincial committee of farmers' organizations fighting the dam, which would affect more than 12,000 people. Prior to his murder, he had received numerous death threats.

The Baba project includes a hydroelectric dam, and the diversion of the Quevedo and Vincos rivers to irrigate lands controlled by agribusiness companies. Opponents of the project say it will cause serious impacts to native forests and wetlands, and to Tsachila indigenous and farming communities. Human rights leaders say Arroyo's assassination is part of a pattern of murders of human rights activists in Ecuador, and have called on the United Nations to investigate the case.

Death Threats in Brazil

Dom Erwin Krautler, 67, the Bishop of the Xingu region, is receiving death threats for his opposition to the Belo Monte Dam proposed for the Amazon's Xingu River. The verbal threats increased following recent mobilizations in which the Bishop publicly denounced the dam plans. Dom Erwin says, "The Xingu is the last piece of paradise that still exists in Brazil – the most beautiful thing I can imagine. With this dam, what will be left will be the skeleton of some trees."

Another leader of the opposition to the damming of the Xingu, Ademir Alfeu Federici ("Dema"), was assassinated in 2001. Brazil's Congress authorized the construction of the Belo Monte Dam in July 2005, but the project has been stalled pending legal action by indigenous communities who say they haven't given their consent to the project as required by the Brazilian constitution.

Arrests in Brazil

Ten leaders of Brazil's Movement of Dam-Affected People (MAB) were arrested in

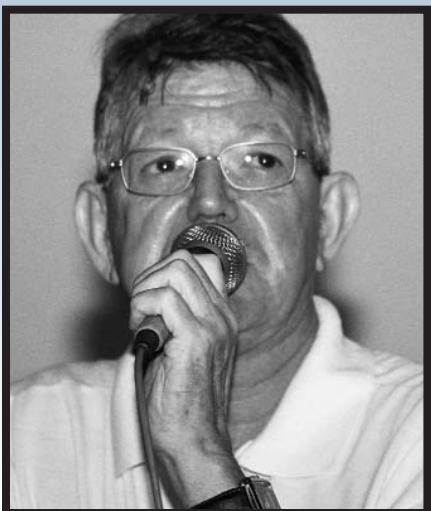




"Makoy" Bangit

March on the orders of a circuit court judge who charged them of "racketeering." They were accused of attempting to extort money from dam builders under the guise of seeking fair compensation for people displaced by Campos Novos Dam in southern Brazil. The arrests were an attempt to head off demonstrations planned for the March 14th Day of Action Against Dams in Brazil. The farmers were held for 10 days without being charged. State environmental agencies issued a report at the same

Dom Erwin Krautler



time confirming that the families MAB was advocating for were eligible for compensation, indicating that there was no legal basis for the accusations. The United Nations responded by sending a human rights advocate to meet with the affected communities.

Severe Beating in China

An outspoken advocate for villagers displaced by the Three Gorges Dam, Fu Xiancai, was struck in the back of the neck by an unknown assailant in early June after local police questioned him over an interview broad-

cast by a German television station. Fu was hospitalized after the attack and remains paralyzed from the shoulders down. He is still undergoing medical treatment. An official investigation carried out by the same public security bureau that had a record of harassing Fu ruled the attack was fabricated, and concluded that Fu must have hit himself. Meanwhile, local officials continue to harass and threaten villagers who raise concerns about the attack on Fu. Any outside journalists who come to the area to report on Fu's case are trailed by police surveillance teams, preventing villagers from speaking with them. Human Rights in China and other groups are calling for an independent investigation into the attack.

Militia Attacks in India and Sudan

On December 14, 2005, several hundred people being displaced by the construction of Khuga Dam in the state of Manipur in northeastern India staged a protest at the dam site, demanding compensation. As a group of them marched to the dam site, paramilitary forces guarding the construction site responded by opening fire. Three people were killed and more than 30 injured.

And in Sudan, the militia of the Merowe Dam authorities, armed with machine guns and heavy artillery, attacked the affected people of Amri village in northern Sudan in April. The

Amri communities are vigorously resisting displacement by the Merowe Dam. Eyewitness say the attacking militia opened fire on people without warning when they were having breakfast in the school courtyard. Three people were immediately killed and more than 50 injured.

Murdered in Mexico

Two farmers who would be affected by La Parota Dam on Mexico's Papagayo River were killed by fellow community members over the past year. The killings came after efforts by Mexico's Federal Electricity Commission (CFE) to divide communities that would be affected by the dam. The CFE has been so successful that bitter conflicts exist amongst pro- and anti-dam community members, culminating in the two murders. Tomás Cruz Zamora was shot by his cousin in September 2005 while returning from a meeting organized by CECOP, the organization representing the communities affected by the dam. Tomás was a key opponent of the project, while his cousin was strongly in favor of the dam and was collaborating with corrupt authorities associated with the CFE.

Eduardo Maya Manrique was killed in January 2006 by his neighbors. Eduardo came from the *Ejido* (a form of communal title to land) of Dos Arroyos, a community which is strongly divided between pro and anti-dam forces. A large percentage of Dos Arroyo's lands would be inundated by the dam. Eduardo was an active participant in his community's protests against La Parota. On the night he was killed, he was invited to drink beer with his neighbors, who proceeded to attack him with clubs and rocks. He died from blows to his head.

CECOP is now undertaking a reconciliation process to restore peace and unity amongst the divided communities. Meanwhile, the Third District Court in Acapulco recently granted protection to four *ejidos* that are against the La Parota Dam, preventing the CFE from expropriating their lands. ■

What You Can Do

Sign up for IRN's urgent action listserv at www.irn.org. You'll receive occasional action alerts telling you how you can support local activists working to protect their rivers and rights.

To Get Rich is Glorious

Talking with People in China's Nu River Valley

by Wu Ming Xiaojie*

Life moves slowly on the Nu River. Those who have a chance to visit this remote corner of Yunnan Province in China often leave with an impression of timelessness. The foothills of the Himalayas tower over farming hamlets inhabited by Tibetans, Nu, Lisu, Dulong, and Dai peoples, whose history in the area is as diverse as the plant and animal species that carve out their niches among cliff walls. The river flows turquoise in the winter, and brown and raging in the summer. Compared to the kind of break-neck development you see in the rest of China, the Nu River Gorge is serene.

That timeless quality is something the local government in the Nu River Valley is working hard to correct. Ever since the area was "peacefully liberated" by the communists some 50 years ago, generation after generation of cadres have sought to move the area forward in time, through introducing agricultural technologies, building schools, roads, and hospitals, and encouraging development of the abundant natural resources in the valley – its trees, minerals, and hydropower. As one prefecture official told me, "Fifty years has gotten us nowhere. You have seen how poor people here are; we must build these dams, it is the only exit we have."

While the rest of the country talks of the dam project in terms of providing much needed hydropower – the cascade of dams would produce about the same amount of energy as the Three Gorges project – to local officials, the project means cash. That cash would go towards what some researchers call "Chinese-style poverty alleviation," cookie-cutter development projects that are highly visible to supervisors visiting on quick inspection tours. By some estimates, the dams would bring a 20-fold increase in government revenue, and local officials argue that it could help bring the area out of poverty permanently.

World Heritage Site

The Nu River is one of China's last free-flowing rivers and is shared by China, Thailand, and Burma. It originates on the Tibetan Plateau and flows through China's Three Parallel Rivers World Heritage Site, an area known as the epicenter of Chinese biodiversity. The World Heritage Site contains over 6,000 plant species and is believed to support over half of China's animal species.

Almost 300,000 people from 13 ethnic groups live in the area.

The debate about whether or not to build a cascade of 13 dams on the Nu River has been unprecedented in China. For the first time, the Chinese public has learned about the negative impacts of dams, through media coverage, online chat rooms, public forums and even school curriculum. Two years ago, the anti-dam community won a small victory when the Premier of China, Wen Jiabao, announced that the project would be suspended until Huaneng, the company that has been granted rights to develop the Nu, completed a more thorough environmental assessment for the dams. Last year, Huaneng resubmitted an EIS for four of the proposed dams to the government, but has yet to grant approval for any of them.

In the meantime, life on the Nu River is beginning to change. Four different hydropower development institutes, under contract with Huaneng, have set up semi-permanent camps on the river. Transportation authorities are developing plans to expand and straighten the two-lane road that follows the curves of the river on its path through the gorge, moving it out of the way of the reservoirs. In Xiao Shaba village, near the Liuku dam site, residents are being prepared for relocation to a "new rural village," one of many around the country that are being set up. Some residents welcome the move, as they believe it will mean better accommodations than what they have now. Others don't see that it will bring them any benefit.

Some people living in the Nu River valley are in favor of the dams, like the middle aged school teacher living upstream of the Abiluo dam site in Fugong County who told me, "At present, the river only brings harm to people when it floods, and does us no good. No one here opposes the dams." Up and down the Nu River gorge, in each of the areas that will be flooded by the proposed dams, opinion among residents varies. In the areas populated primarily by Nu and Lisu peoples, who are more integrated into local politics and speak positively about government programs and services, the dams are by and large seen as a government affair. Many of these people seem to trust that the government will take care of them if they have to move.

The northernmost dam proposed in the cascade, Songta, is located about 10 kilometers upstream from the Yunnan-Tibet border

and at 307 meters would be one of the tallest dams in the world. It would create a 100-kilometer-long reservoir and would displace an estimated 3,600 people, mostly of Tibetan heritage. People in this part of the gorge are markedly more suspicious of the dam plans.

A local businessman from Chawalong Township had this to say about the local government offices: "They are given money to help *laobaixing* [common people] but they skim money off the top. They helped *laobaixing* build a road, but gave no compensation for *laobaixing* labor, they build this fancy government building but our houses are cheap...what kind of socialism is this? It is just as bad as during the Republic." In downstream Songta village, a Nu village with Tibetan customs, a village leader told me people there would rather die under the reservoir than give up their land and homes.

At the Ciba Monastery, which would also be flooded by the reservoir, the elderly Tibetan caretaker had not heard of the dam plans. "The water here comes from holy mountains," she told me. "Kawagarbo has four springs. They come together to form Abei River, the silver river, a boy. The Nu River is the mother river, it is made of gold. Across the river is the Wei Bei Bi Ma river, it's the daughter, it is made of milk." When I asked what would happen if they put a dam in the river, she looked hard at me and said, "If they build a dam, maybe there will be some harm, maybe some people or animals will get sick, maybe they will die if they cut off the flowing together of the rivers."

There are few signs that if the State Council approves the dams, they will be constructed with any real consideration of the impact it will have on the livelihoods of riverside communities. The Nu River valley is far from the areas of the country that are becoming rich so quickly, and if people do have to move out to make way for the dams, most local officials assume that they'd be better off somewhere else.

But what would be lost forever is a way of life that exists only in the Nu River valley. If local government officials are serious about helping improve peoples' lives in the Nu River valley, they will ensure that unlike so many dam projects in the past, this one is undertaken with real participation on the part of the communities that will be affected. ■

*A pseudonym.

Health be Damned in Guadalajara

by Cindy McCulligh

Lupita Lara doesn't particularly enjoy being asked why she opposes the Arcediano Dam, why she is, in fact, the only resident of the small community of Arcediano whose house still stands and whose legal struggles continue. "You wouldn't ask why I fight if you were living through events where your community is told it will be destroyed in 15 days, where you are paid the minimum, which isn't what you had the right to; where you saw that all of your rights were violated... to see how the machinery was brought in and your community was knocked down, and how they laughed in your face."

Recalling the destruction of her community of 150 people in July 2003, Lupita explains how those events shaped her decision to stand firm. "You fight for the environment, you fight for your community, for your habitat."

To reach Lupita's house, you must go north from Guadalajara, Mexico's second largest city. Descending an old cobblestone road, now being widened to allow construction equipment to reach the dam site, you will be surrounded by lush vegetation. Descending a canyon over 600 meters deep, the majestic landscape will not be the only thing you will notice. Three waterfalls thunder down the canyon walls, over rocks and under bridges, foaming and teeming with foul odors, oddly perfumed by the detergents and waste of the residents of the eastern part of the Guadalajara Urban Area (GUA). This is because all the sewage from over four million inhabitants of the urban area finds its way, untreated, to the river that carved out this canyon. Guadalajara has turned the Santiago River into an open sewer.

When state authorities announced in 2003 that they would dam the Santiago at Arcediano to meet the GUA's drinking water needs, many local people asked the obvious question: How can you dam an open sewer as a source for drinking water? More than 2,300 liters per second of the GUA's raw sewage – including that from major industrial areas – flow into the Santiago before Arcediano, and eventually to the Pacific Ocean. In large part, one can safely say that citizen and expert concerns have fallen on deaf ears.

This is not to say that state authorities have no plans for improving water quality. Two large water treatment plants are planned for the GUA. However, treated and untreated sewage will continue to flow into the Santiago before Arcediano, especially

during the rainy season when it will be almost impossible to divert all wastewater. Several studies have been undertaken which question the viability of this dam.

Mercedes Lu, Technical Advisor of ELAW (Environmental Law Alliance Worldwide) of Oregon, evaluated the water quality data for the Santiago River and its tributary, the Verde, as well as the viability of the dam. Lu's studies found highly toxic substances, including benzene, toluene, trichloroethane and heavy metals such as chromium, cobalt, mercury, lead and arsenic. Several of these substances are known carcinogens. Based on her analysis, Lu concludes that the technical and economic studies of the State Water and Sanitation Commission (CEAS) are insufficient. And because detailed information on the proposed water treatment system has not been provided by CEAS, "it is not possible to determine the effectiveness of the water treatment methods, nor the viability of the use of this water for human consumption," states Lu.

Health Experts Left Out

Researchers from the University of Guadalajara have also assessed the viability of the dam. The "Evaluation of the Viability of the Arcediano Dam Project," prepared by the Technical Analysis Committee of the Arcediano Project, an interdisciplinary committee from the University, indicates the shocking lack of participation by the health sector in the design of the project. The report indicates that the highly deficient sanitary conditions present in the Verde and Santiago rivers "will convert the Arcediano site into a risk for the population if a dam is built in this location."

In May, the Director of the CEAS, Enrique Dau Flores, announced that a Health Impact Assessment would be carried out for the dam with the involvement of the Pan American Health Organization, in what he called a "public opinion exercise." Such a study should be an important input into decision-making, but Dau made it clear that this would not change anything. "This is a complementary study... it is not a prerequisite for construction. There is no risk of modifying the project either," he told the press in early July. On the ground, construction has started and the promised study has yet to commence.

On August 12, local organizations published a letter signed by more than 60 researchers and water and human rights activists from 11 countries, demanding that



Lupita Lara

state and federal authorities halt construction on the dam and undertake "a comprehensive health impact study for the Arcediano Dam which includes an epidemiological analysis of the impact of the contamination on the health of the population."

Down in Arcediano, studies and sanitation seem far off, where one finds only the same river with its rancid waters and its bubbling toxic foam taking a free ride to the sea. In this canyon, one can observe the consequences of converting rivers into sewers, of letting cities poison their own environments.

President Vicente Fox came to Guadalajara in April to make federal financing for the dam official; the state government has also announced that the Inter-American Development Bank will provide funds. The money is flowing, as are contracts and bids, but the key question remains unanswered: Will it be possible to treat this water to make it safe for domestic use?

Meanwhile, down in Arcediano, construction proceeds and Lupita continues to defend her rights. "It's only when I'm asleep that I can forget this struggle," she says. The state government is now trying to expropriate Lupita's house, and thus clear the way for construction of the dam. Lupita is not backing down: "I saw them knocking down houses and finishing off my community and I felt that they injected me with strength and courage," she recalls. "It's nothing more than arming yourself with courage, valor, and defending what's ours, defending our environment, defending our communities." ■



UPDATES

CHILE: Environmentalists expressed shock at the Chilean government's recent announcements that it expects to move forward with a proposed \$4 billion hydroelectric complex in Patagonia, and will route a new highway through a protected nature reserve in southern Patagonia as part of its plan to develop the dams.

The government official who announced the project in early October said the main reason to build the highway is to provide access for construction of long-distance power transmission lines to the four huge dams proposed for the Baker and Pasqua rivers. The 1,500-mile transmission line corridor, whose estimated cost is \$1.5 billion, is considered to be a crucial component of the project, because it would link the dams to the national electrical grid.

Activists say that the government's plan to plow a major highway through the fragile ecosystems of the Pumalín forest reserve is premature, as the huge dam scheme is still under environmental review.

Sara Larraín, director of the Sustainable Chile Program, called the road decision a green light for the dam projects and a publicly funded transmission-line corridor. "This sends an awful signal for those who advocate diversification of Chile's energy matrix," she told a meeting of investors in energy alternatives.

The dam project is being developed by Spanish-owned Endesa and Hydro-Quebec of Canada. Juan Pablo Orrego of the Chilean group Ecosistemas said the project will boost the dam project by providing favorable conditions for the private companies who want to invest in the dams.

TURKEY: Activists demonstrated at the German Ministry of Economic Affairs in Berlin to protest German support for the Ilisu Dam proposed for the Tigris River in Turkey. The activists built a cardboard dam in front of the Ministry and handed a petition with 35,000 signatures to Hans-Joachim Henckel, who presided over a decisive meeting on the dam that same day. The meeting discussed the granting of an export guarantee of approximately 100 million Euros to the German company Züblin for construc-

tion work on the controversial dam, which violates all international standards for dam building. The dam's reservoir will flood an ancient town and destroy the livelihoods of up to 80,000 people.

Heike Drillisch from WEED, who coordinates the protest against the Ilisu dam in Germany, said the strong opposition against the dam in Turkey as well as in Europe has made it difficult for the German administration to give a green light to public money for Ilisu. She said she is appalled that the government in Berlin, a supporter of the World Commission on Dams, is even considering support for Ilisu. "A German export guarantee for Ilisu would send a clear signal that people and ecology no longer count when it comes to the interests of German companies," says Drillisch.

MALAYSIA: The Bakun hydroelectric dam is nearly three-quarters complete but there is still no customer for the 2,400 megawatts that will be generated when the dam is complete. "The problem is timeframe" said Niklas Olausson, research head of brokerage firm CLSA, in a September 15 Reuters article. Twelve years ago, when the project was approved, Malaysia was in the midst of a power shortage, but now there is a surplus, and about 40% of Malaysia's 18,000 megawatts of generated power is not used.

The government has proposed two schemes to use the power to be generated by Bakun. But, as energy Minister Lim Keng Yaik concedes, the cost of both schemes is huge and the stakes are high. One proposal is to take Bakun's power via an undersea cable more than 500km long to peninsular Malaysia at a cost of \$2 billion. The other would be to build and run an aluminum smelter in Sarawak that could potentially use up to 80% of the power generated by Bakun. At the moment neither plan seems to be moving forward. Meanwhile, the dam itself is facing problems, including running well over budget and behind schedule.

BRAZIL: The Environmental Impact Assessment for the Santo Antonio and Jirau dams on the Madeira River in the Brazilian Amazon has been approved by the environmental licensing authority, Ibama. The next hurdle for the project will be a series of public

hearings, tentatively scheduled for November, followed by a decision by Ibama on whether or not the projects are environmentally feasible. If the projects get a provisional license, they could then be offered to private investors, possibly as early as December.

Project opponents point out that Ibama's acceptance of the studies comes at a time when the agency is under heavy pressure to accelerate the decision-making process, and environmental activists are publicly being depicted as irresponsible for opposing the dams. Recently, Mines and Energy Minister Silas Rondeau said, in reference to the Madeira project, "It's time to pound our fists on the table and tell these people we will not let them bring Brazil to a halt."

CHINA: Researchers in Japan have concluded that a surge in the number of giant jellyfish off the Japanese coast is a result of the Three Gorges Dam. The jellyfish have a negative effect on the Japanese fishing industry.

One of the breeding areas for the large Nomura jellyfish, which grow to a meter in diameter, is near the mouth of the Yangtze River. The dam has reduced the amount of silicon in the water, which is necessary for the breeding of phytoplankton. Researchers plan to examine the relationship between the dam construction and the jellyfish over the next three years.

Previous research revealed that the dam's impact on phytoplankton is threatening one of the world's biggest fisheries (see News Briefs, April 2006).

LESOTHO: Companies from France, Italy and Germany have been fined US\$5.6 million for paying bribes to win contracts on the Lesotho Highlands Water Project, the European Union's anti-fraud arm (known as OLAF) announced on October 4. The companies are Schneider Electric of France, Impregilo of Italy and Lahmeyer of Germany.

Massive corruption was discovered on the LHP in 1999, when more than 12 multinational firms and consortiums were found to have bribed the CEO of the project. The EU and World Bank helped finance the scheme. The World Bank has thus far debarred one company, Acres International of Canada, for the bribery, and is now considering similar action for Lahmeyer. This is the first action by the EU on the Lesotho case.

The fines were given in 2004 but only revealed in October as there was no longer any scope for the companies to appeal, according to OLAF.

BRAZIL: The energy ministry in Brazil negotiated its third round of bids for new energy generation in October, with hydroelectric dams providing a little more than half of the energy being offered to investors and utilities. Dams were not hot items at the auction, with concessions on only two of the four new hydroelectric dams on offer attracting any interest, indicating that the country's new emphasis on dams once again found itself running up against environmental and economic realities.

The two new dams, Mauá (362 MW, estimated construction cost \$495 million) on the Tibagi River in southern Paraná state, and Dardanelos (261 MW, \$346 million), on the Aripuanã River in the Amazon state of Mato Grosso, awakened investors' interest. The largest project originally scheduled for auction, the \$9 billion Santo Antonio and Jirau dam complex on the Amazon's Madeira River still faces licensing hurdles before it can be considered for concession.

Government lawyers succeeded at the last minute in reversing court orders forbidding inclusion of Mauá and Dardanelos in the energy auction, due to alleged irregularities in their environmental licensing processes. In the case of Dardanelos, Brazil's largest newspaper, the *Folha de São Paulo*, published an editorial by its science editor, Claudio Angelo, who called the concession "an environmental crime." Angelo said, "Even with a shoddy environmental study and six lawsuits being contested, Dardanelos dam went to auction yesterday. It is unclear how much energy the dam will generate, due to the Aripuanã River's variable flow during the course of the year." The dam will spell the demise of one of Amazonia's most spectacular waterfalls, and will threaten 1.5 million swallows who live in its rocks, among other environmental impacts.

Two dams in Rio de Janeiro state, Cambuci (50 MW \$120 million) and Barra do Pomba (80 MW, \$173 million) failed to attract bids. Maurício Tolmasquim, Brazil's director of energy planning, in attempting to explain the lack of interest by investors said, "these dams really have environmental complications, and they are near cities".

The president of Brazil's National Association of Energy Producers said, "To increase the stock of new concessions, we need to deal with the environmental question. The next government will have the challenge of making society aware of the importance of adding new megawatts, or risk another blackout."

DECOMMISSIONING

US: American Rivers reports that 49 dams in 11 states around the country are slated for removal. The group's list of dams to be removed reflect the growing concern for public safety that is fueling the push to take out scores of obsolete and dangerous dams.

"Heavy rains in New England and the Mid-Atlantic this year exposed the dangerous myth that all dams somehow protect people from flooding; often the exact opposite is true," said Serena McClain of American Rivers. "Many of the dams that will come out this year will leave people safer, upstream and downstream."

Ecological and recreational improvements will also result from the dam demolition. Taking down a rubble dam on the Potomac River in Maryland this year will improve boating on the river and help the migrating American eel. Partial removal of dams on Pennypack Creek in Philadelphia, Pennsylvania will help restore historically significant runs of migratory fish, and also improve water quality and ecosystem health.

"Removing a dam that has outlived its usefulness is just common sense, and it's fantastic to see communities around the country waking up to the tremendous asset they stand to gain by restoring a free-flowing river," McClain said.

The list is available at: <http://www.american-rivers.org/site/PageServer?pagename=dams06>

OREGON: A teenager's science project is resulting in a dam removal that could restore native fish species. The teen, 17-year-old Colby Davidson, studied the dammed Newton Creek in Philomath, Oregon. He trapped 200 fish and found that there was still a thriving native fish population in the creek, which helped lead to the decision to remove the dam.

A variety of community groups are getting involved in the project. The high school ecology and forestry classes will work to improve the stream bank and monitor water and wildlife in the area, said Jeff Mitchell, a science teacher at Philomath High School.

The local Watershed Council is managing the project and has written grant proposals to help pay for trees and other riparian zone improvements. A National Fish and Wildlife Foundation grant of \$20,000 will pay for equipment such as the backhoe and educational programs at the site, a local newspaper reports.

OREGON: New studies reveal that removing four dams from the Klamath River to help struggling salmon runs would not be as expensive as feared, and in fact would be cheaper than other alternatives for restoring fish runs.

The salmon runs were so poor this year that federal fisheries managers shut down commercial salmon fishing off the West Coast to protect them, costing fishermen \$16 million. In 2002, low waters caused by the dams led to a huge die-off of salmon in the Klamath.

In late September, a judge found that salmon and steelhead would take back hundreds of miles of habitat above the dams if fish ladders were installed.

Indian tribes, fishing and conservation groups have been pressing Portland-based utility PacifiCorp to remove the dams. The company is fighting to continue operating the dams, and has proposed trucking salmon around the dams rather than building fish ladders or removing them.

PaciFiCorp is seeking to renew its operating license from the federal government. The approval would be contingent on the company making the dams more fish-friendly through the installation of fish ladders, fish screens and increased river flows to help restore the salmon runs.

Steve Rother of American Rivers said that an economic analysis by FERC found that PacifiCorp will lose \$28.7 million a year operating the dams after the mitigation effort. "If PacifiCorp is going to pursue the least-cost option for their customers, they should think about removing these dams," he said. ■



James Morrissey spotted this ghastly advertisement on a recent trip to India. What next, tours of AIDS wards in Africa? Tehri Dam, on a main tributary of the Ganges, is one of the world's largest and most controversial hydroelectric dams. Every year during the monsoon months, the rains help fill the enormous reservoir where more than 100 villages once stood.

Citizens Rally to Stop Queensland Dam

by Save the Mary River

Imagine watching the news one night and hearing the State Premier announce a new dam which will flood your home and that of your neighbor's. What would your reaction be?

Now multiply that emotion by at least 900, and you will begin to understand the state of shock, anger and disbelief sweeping through the Mary Valley, north of Brisbane, Australia.

The project will affect 872 properties. To government claims the dam will "break the drought" in southeast Queensland.

Local people have formed the Save the Mary River Coordinating Group. Executive member Kevin Ingersole says that this dam will cost more than US\$1.5 billion. He said it will eventually inundate 7,600 hectares in the Mary Valley in a two-stage project, but stage one – full wall construction by 2012 – will be too late to help Brisbane when it runs out of water in 2008.

"The community of the Mary Valley has erupted in appalled anger that such a massive proposal could be dropped on them without so much as a whispered warning," Ingersole said.

The Mary Valley is near the tourist mecca of Noosa, with residents who are a varied

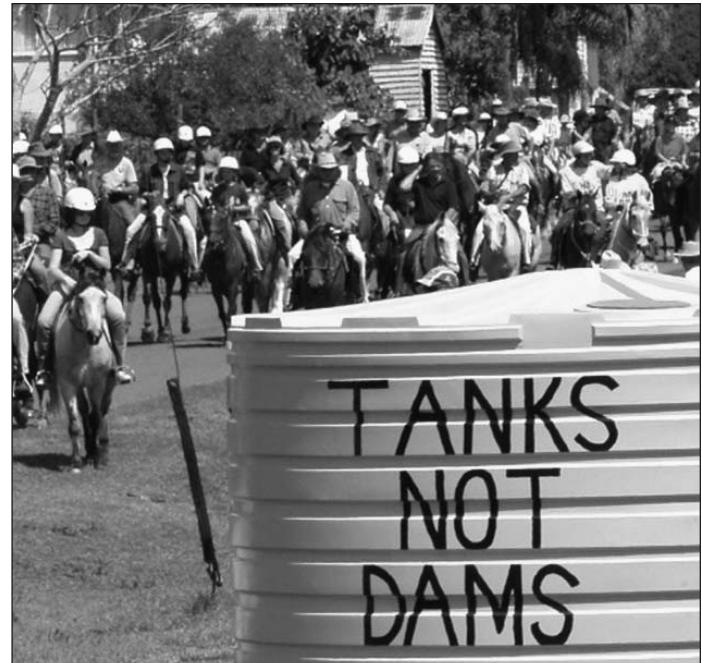
mix of fourth-generation farmers, retirees and young families.

Ingersole said local people would fight the dam for its economical, social and environmental impacts.

The project will harm natural habitats for the threatened Queensland lungfish, the endangered Mary River Cod and Mary River Turtle, as well as productive dairy farms and some of the region's most fertile fruit, vegetable and beef producing country.

The Save the Mary group platform is that there are viable alternatives to the dam, including broader use of recycled water for households and industry, rainwater tanks,

water-saving appliances, sustainable groundwater use, and desalination. ■



Riding to save the Mary River: 400 riders mounted a protest ride in the area that would be flooded if the dam goes ahead.

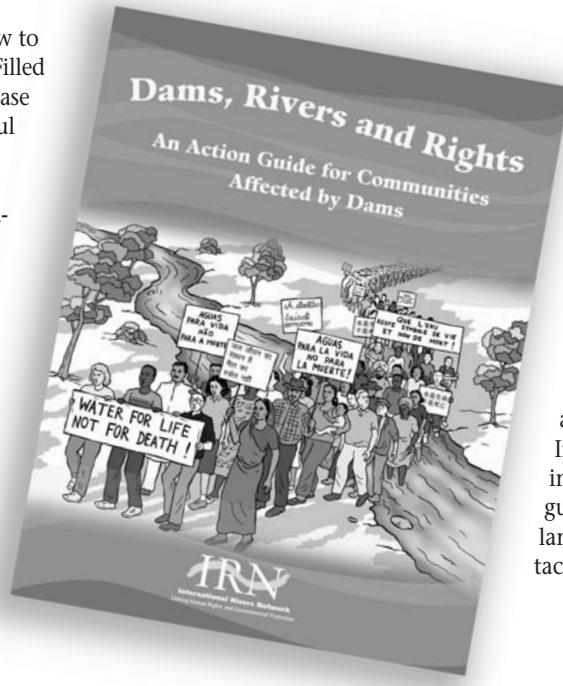
Just published!

- **Do you work with dam-affected communities?**
- **Is your river threatened by a dam?**
- **Is your community being displaced?**
- **Need to know what you can do about it?**

If you answered yes to any of these questions, then you need a copy of *Dams, Rivers and Rights!* Written for communities affected by dams, the guide provides general information about dams and their impacts, and gives con-

crete ideas on how to challenge dams. Filled with interesting case studies and helpful illustrations, the guide aims to empower communities threatened by existing and new dams and to share lessons and ideas from the growing international anti-dam movement.

The guide will be available in English, French and a num-



ber of other languages.

If you are interested in obtaining copies of *Dams, Rivers and Rights*, please contact

riam@irn.org.

Copies are available free of charge to dam-affected communities, NGOs and activist groups.

If you are interested in translating the guide into your local language, please contact aviva@irn.org. ■

Burma's War Zone continued from page 7

moved to relocation sites controlled by the army, where forced labor and other human rights abuses have been common. The expected flood area from the Wei Gyi Dam will impact four of Karen State's seven townships, completely submerging 28 villages. The village population that will be directly impacted by the reservoir is at least 8,300 people, which does not include the estimated 13,500 internally displaced people estimated to be currently hiding in the flood zone.

The area around the lower dams, where the largest and most sustained military offensive by the Burmese army in many years is currently underway, has already been largely depopulated. A new military offensive has resulted in possibly 15,000 people being newly displaced in the past many months, some 3,000 of whom were seeking asylum at the border. Strong documentary evidence shows that the Burmese army is targeting civilians and has killed people as they are fleeing from their burned villages into the surrounding forests.

In the two years after studies began for the proposed Ta Sang Dam, some 300,000 people were displaced from the surrounding areas under a forced relocation program ostensibly aimed at ending support for the Shan State Army. Over 200,000 of the displaced fled to Thailand. The large-scale displacement has prompted charges that people are being moved by the junta under the context of war as a mechanism to forcibly pave the way for the dams as well as to avoid pay-

ing the dam-related compensation claims later.

Environmental Damage

The Salween River, known as the Nu River in China and the Thanlwin River in Burma, is home to at least 140 species of fish, one third of which are endemic. The river basin includes some of the world's best natural teak forests. The environmental consequences of the proposed dam projects will be vast and largely irreversible, including severe impacts on downstream floodplain agriculture and delta/offshore fisheries.

The Hat Gyi dam will flood spectacular rapids and part of the Kahilu Wildlife Sanctuary in Karen State. The Ta Sang reservoir will flood scarce farmland and dense riverine

forests, while the Wei Gyi reservoir will inundate one of the two main wet-rice producing areas in Karen State. The Wei Gyi and Dagwin sites straddling the Thai-Burma border are located within the Thai Salween wildlife sanctuary and national park.

Construction has already commenced on access roads for some of the dams, which will facilitate encroachment by the military as well as logging and mining companies, hunters and monoculture tree plantations. As people are forced to relocate, forests in other areas will also be cleared for farming by the displaced people.

Ethnic Resistance to Dams in Burma

Despite the fact that the Salween River basin flows through a war zone where repression is common, people are strongly resisting the dam plans. Ethnic peoples of Burma continue to organize at the community level inside Burma and through NGOs outside of Burma to gain both national and international support in their struggle.

About 15,000 Karen living in Burma's Karen state and along the Thai-Burmese bor-

Dam
is
Death
for Us

www.searin.org
www.salweenwatch.org

der have signed a petition in a protest against the dam project. On March 14, 2006, on the International Day of Action Against Dams, ethnic peoples of Burma, Thai activists, and international friends gathered together along the Salween River in Thailand to demonstrate their opposition to the dam plans.

Ethnic Burmese based in Thailand as well as Thai NGOs have been engaging with local residents along the river basin to inform them of the dam plans, to educate them on the potential social and environmental impacts of large dams, and for those living on the Thai side, on their rights as Thai citizens. In addition, Thai NGOs have been working with local villagers on "Thai Baan research," which aims to empower local residents to conduct their own research on the ecological and cultural attributes of the river basin (see story, p. 7). This is a new "ethno-ecological" movement fighting for democracy, self-determination, justice and life itself. ■

For more information, visit www.salweenwatch.org

