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With One Voice

Speaking Out for Rivers on the International Day of Action

by Elizabeth Brink

As the world braced itself for war, many thousands of people around the globe took time out of their busy lives to make a stand for free-flowing rivers and celebrate a day of solidarity against large dams. Participants marched, boated, sang, chanted and otherwise made themselves heard. From Russian school children to small farmers in Thailand, people from many backgrounds took to the streets, the rivers and even the top of a mountain to voice their opposition to destructive projects, publicize the negative impacts of large dams and revel in the delights of healthy rivers.

The International Day of Action was inspired and mandated in 1997 by the participants of the First International Meeting of People Affected by Dams, held in Curitiba, Brazil. Representatives from 20 countries decided then that the International Day of Action would fall on March 14, Brazil's Day of Action Against Large Dams. This year, more than 50 actions in 20 countries commemorated the sixth annual International Day of Action Against Dams and for Rivers, Water and Life.

One of the more creative events came from a strongly anti-dam region in Spain, where activists climbed the highest peak in the Western Pyrenees to be near the headwaters of the Aragon River. At the top of Collarada Peak they displayed a banner reading: SOS Pirineos (SOS Pyrenees), Stop Embalses (Stop Dams) to protest a highly controversial national water plan, which calls for the diversion of the Ebro River (which the Aragon flows into) and multiple dams. The action was organized by the Aragon River Association Against the Raising of the Yesa Dam, which is part of the Spanish dam-fighting coalition COAGRET. The action stressed that the integrity of rivers is vital, from a river's birth at the headwaters,



Spanish dam fighters shout from the mountain tops, "Stop Dams!"

through its entire course. An alternate plan emphasizing water reuse, desalination and the reduction of water losses through leaky pipes have previously been proposed.

Latin American Resistance

The birthplace of the Day of Action was once again home to dozens of events drawing thousands of people to celebrate rivers and protest their destruction. Mobilizations, coordinated by the Brazilian Movement of Dam-Affected People (MAB), took place in 15 states, with the purpose of calling attention to problems in the nation's energy sector.

In São Paulo, MAB occupied the headquarters of the US-based energy company AES, which owns a controlling share in electric utility Eletropaulo. The privatization of Eletropaulo has been a glaring embarrassment, as AES has reneged on paying its debt

to the government, which lent it money to buy Eletropaulo, but has managed to remit \$800 million in profits back to its US headquarters.

More than 3,000 farmers and four Catholic bishops demonstrated at the site of the Campos Novos Dam (currently under construction) in Santa Catarina state, in Brazil's south. The dam-affected communities remain encamped near the dam site at this writing.

Hundreds of dam-affected people remain in an encampment near Cana Brava Dam In Goiás, after having occupied the dam's powerhouse for three days. The situation remains tense, because the Belgian-based Tractebel company does not recognize the right of the majority of the families to resettlement and compensation, and at

continued on page 12

World Bank Takes Low Road on Water Policy

In February, the World Bank approved a new Water Resources Sector Strategy (WRSS). The strategy says the Bank needs to shrug off its critics and boost spending on big dams and other water megaprojects.

This strategy is a reactionary, dishonest and cynical document. If put into effect it will provide rich pickings for the big dam lobby and private water companies, but only worsen poverty, water shortages and the dire condition of the world's rivers.

As the world's largest development institution, the World Bank helps set the agenda for other donors and governments. The strategy could thus do great harm not only by setting priorities for World Bank lending, but also by influencing other institutions.

Reactionary: Over the past decade water managers have been moving away from megaprojects. They have increasingly realized that focusing on huge water projects for water supply, flood control and electricity is expensive, frequently ineffective and socially and environmentally damaging. The new approach to meeting water needs prioritizes small-scale, affordable technologies such as harvesting rainwater and recharging groundwater, flood management through measures such as better warning systems and wetlands restoration, and reducing demand for water through better management and improved technologies.

The WRSS shows that the World Bank seeks to turn back the clock on water management. It promotes dated megadam-based strategies as the solution to the water problems of the 21st century – problems often caused by dams.

Dishonest: Shortly before the release of the report of the World Bank-sponsored World Commission on Dams, Bank management told the Commissioners that the WRSS would be the main vehicle in which the Bank would address their findings and recommendations.

Yet the strategy ignores the Commission's findings on the poor economic performance of dams, their negative impacts, and the availability of better alternatives. It states that the Bank concurs with the "core values" and "strategic priorities" of the WCD, but will not adopt the WCD's detailed guidelines into its policies because they are too strict. The WCD was established largely because the Bank's policies had failed to prevent its lending for destructive and unnecessary dams. It is of little use for the Bank to say it agrees with the WCD's general principles without agreeing to adopt the guidelines which explain how to put these principles into practice.

The strategy calls on the Bank to support hydropower, "ensuring, of course, that this is the most appropriate option and that good environmental and social practices are followed." But the Bank repeatedly supports dams that are not the best options and do not follow good practices. Only if the Bank commits to following WCD recommendations can there be hope for positive change in the Bank's business-as-usual dam building practices.

Cynical: In the strategy, the Bank feigns concern for the more than one billion people who currently lack access to safe water, and claims that the solution to this humanitarian tragedy lies in promoting subsidies to encourage private investors in water supply.

Yet 80% of the world's people without decent access to safe drinking water live in rural areas. Water multinationals have little interest in the unprofitable business of supplying water to poor and dispersed rural populations.

Similarly, major water projects are of little relevance to meeting the water supply needs of rural areas – and in fact often result in depriving rural areas of their water resources for the benefit of cities and agribusiness.

The Bank's water strategy is thus largely irrelevant to meeting the needs of the great majority without access to water.

The World Bank itself shows little interest in rural people in its lending operations – less than 1% of Bank lending from 1993 to 2002 went for rural water supply and sanitation schemes.

There is a huge potential for improving the environment and the lives of the poor by implementing demand-side management and decentralized, community-led solutions for water and sanitation. In particular, rainwater harvesting and low- and no-water sanitation technologies offer real potential for both rural and urban areas. Implementing the model proposed in the WRSS will set back efforts to realize this potential and will further worsen the already serious failings of the water sector.

There is an important role for the Bank in improving the performance and safety, and mitigating the negative impacts, of existing infrastructure. Outside of these activities, it would be better for the World Bank to disengage from the water sector than to implement the measures proposed in the flawed WRSS.

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Villagers Mount Unprecedented Protest Against Dam in Laos

by Susanne Wong

Late last year, some 40 ethnic Hmong men from Ban Phou Khao Khouay marched to the Nam Mang 3 dam site armed with sticks and guns, and demanded to speak with project officials. The villagers were infuriated that they might be evicted from their lands for the project and yet had received no information about where they would be relocated, when they would be moved, or what compensation they would receive. They threatened the foreign contractors, telling them “to pack up and go home” if they failed to answer their questions about resettlement. The protest triggered a halt in dam construction that lasted five days.

The incident marks the first time that a villager-led protest against a dam has been recorded in Lao PDR and the first time that a protest has stopped construction of a dam project in the country. The villagers who protested took great personal risks by voicing their concerns in a country where political freedoms are restricted and opposition is repressed. It is not known if the protest will result in a state backlash against the affected communities.

IRN had already been receiving anonymous reports on the social, economic and environmental problems with Nam Mang 3 when the protest occurred. The incident prompted IRN to send a researcher to the site in January to investigate affected villagers' concerns. The results of that field visit can be found in a new report entitled “New Lao Dam Embroiled in Controversy” (available online at www.irn.org).

Background

The US\$63 million Nam Mang 3 Hydropower Project, located 80 kilometers northeast of the Laotian capital of Vientiane, is being financed by the Government of Laos and the China Export-Import Bank. It will be owned and operated by the state-owned utility, Electricité du Laos (EdL).

The project, which is expected to be completed by December 2004, involves the construction of a 22-meter-high dam and 10-square-kilometer reservoir on the Nam Nyang River. Water from the reservoir will pass through a 40-MW powerhouse before being discharged into the nearby Nam Ngam River. The power is expected to be used both domestically and exported to Thailand. Nam



Dams in Laos have reduced fisheries, forcing families to rely more on hunting. These boys are trying to catch rats to eat.

Mang 3 is also supposed to irrigate 2,900 hectares in the Nam Ngum plain.

Nam Mang 3 has been planned, approved and financed in a nontransparent manner. Construction began in late 2001 despite the fact that the project design had not been finalized and studies required under Lao laws had not yet been conducted. The World Bank, International Monetary Fund and Asian Development Bank have expressed concerns about project implementation. Their concerns over the project approval process and, in particular, procurement procedures reportedly halted construction temporarily in 2002.

According to the World Bank, costs would have to be reduced by at least 20% to make the project viable. The World Bank and IMF are concerned that Nam Mang 3 is undermining the Lao government's efforts to improve the transparency, accountability and fiscal health of its financial sector. They are concerned that the decision to build the project was made behind closed doors and that it will increase the debt load of the already heavily debt-burdened Lao government.

Impacts to Livelihoods

At least 15,000 people are likely to suffer impacts to their livelihoods as a direct result

of Nam Mang 3. Of these, about 2,700 people living in three villages will be impacted by inundation for the project's reservoir. Many will lose homes, rice paddies, fruit trees, plantations, fish ponds, grazing lands and gravesites. They have not been informed of possible plans to relocate them or provide compensation for their lost assets. People living in the two Hmong villages of Ban Phou Khao Khouay and Ban Vang Hua are adamant that they do not want to be resettled to the lowlands. They want a compensation package that would give them the option of buying land on the open market and would adequately cover their loss of land and property.

Thousands more people living along the Nam Nyang and Nam Ngam rivers will face impacts to their livelihoods due to Nam Mang 3. Diversion of water from the Nam Ngam will dramatically lower water levels downstream of the dam. This will reduce fish populations, impact riverbank gardens and impair domestic water supplies. Increased water flow on the Nam Ngam River will impact at least 1,100 households in seven villages who depend on the river for fisheries, irrigation and riverbank gardens.

Efforts to mitigate the impacts of Nam Mang 3 are likely to fail. The project's own environmental management and social action plan points out the difficulties in successfully mitigating the project's impacts due to the lack of adequate financial resources and problems with institutional capacity in implementing the program. ■

What Is IRN Doing?

IRN is taking action to ensure that the ongoing problems with hydropower in Laos are resolved. IRN is urging the World Bank, IMF and ADB to halt Nam Mang 3 until the outstanding social and environmental problems are resolved.

Furthermore, IRN is demanding that international financial institutions not support the construction of any other dams in Laos as long as the Government of Laos does not have the institutional capacity and political will to implement such projects according to international standards.

A Partly Sunny Forecast

One Expert's Views on Eastern and Southern Africa's Solar Potential

by Ryan Hoover



Mark Hankins has promoted alternative energy sources in Eastern and Southern Africa for nearly 20 years. His pioneering work in the field of photovoltaic (PV) energy has helped fuel the boom in solar energy usage in Kenya, where rural use of solar power is one of the highest in the world. His Nairobi-based company, Energy Alternatives Africa, provides renewable energy services throughout the region.

WRR: To what extent are people in Eastern and Southern Africa making use of photovoltaics?

MH: Household PV systems have been most widely used in Kenya, Uganda, Zimbabwe, Namibia and South Africa. In all African countries, PV has been widely used for telecommunications, vaccine refrigeration and off-grid institutional power.

There are approximately 250,000 to 300,000 households in the region using solar home systems (Kenya has the most by far). Altogether, this adds up to less than 10 MW of peak power capacity. Compare this with the Kenya grid, which delivers 1,000 MW of power, or the South African grid, which delivers over 40,000 MW. A mid-sized US town uses more power than the capital city in most sub-Saharan countries.

A typical power system in Kenya produces 20 watts or less, charges a 50-70 amp-hour battery, and lights 2-3 rooms. It also usually powers a radio and TV. Systems cost from \$200 and up. People usually buy them in pieces, adding pieces as they can afford them. Most systems are bought with cash, although as many as 20% are financed. A 20-watt system produces 80-90 watt-hours of electricity. This is a very small amount of power, as it would not be enough to power a 100 watt light bulb for one hour. The reason that people are able to make do with such small systems is that they use efficient lights and small black-and-white TVs.

WRR: What are the most significant barriers to widespread adoption of photovoltaics in the region?

MH: Of course, the cost of PV systems is a significant barrier. But awareness and market

development are also key barriers, as is the availability of 12-volt DC appliances. If people do not know about products (and appliances), or if there is nobody supplying the products at reasonable prices (as in rural Tanzania, Zambia, etc.) then nobody will buy. Availability of batteries is another issue. The difficult part of the technology is the battery, and unless they are locally available and locally recycled, PV is neither local nor environmentally friendly. In Kenya, we estimate that 800,000 (10% of the population) uses lead-acid batteries made in Kenya.

WRR: Why have small-scale solar systems been so successful in Kenya compared to other countries in the region?

MH: Kenyans are in general wealthier than other inhabitants of the region, and they demand appliances such as TVs, radios and lights. If there is no demand for TVs, there is unlikely to be a demand for PV, especially since the cost of kerosene for lighting is so low in comparison to PV. Availability here is also good: you can get a solar module in 300 shops all over the country.

We believe that the top 10% of rural income groups throughout Africa would be able to afford PV with cash – if they prioritized it and if it was available. However, many of these people do not even have TV or radio access, and they prioritize other things (cows, school fees, bicycles, house building). Many of the middle-income groups would be interested in PV if smaller systems were easily available, or if there were financing available. But it is not so easy, because it's really not a good idea to develop finance projects based only on PV technolo-

gy when the community might want to use the finance for another good. The micro-finance infrastructure is poorly developed in most countries in the region.

The bottom third of rural income groups is desperately poor, and would probably not prioritize PV, so there is no reason to try to offer them PV systems. They have far more pressing needs.

The reason South Africans have not taken up PV on a wide scale is because they have reached over 65% access nationally to grid electricity. Those who don't have power are not very psyched about getting PV, as it cannot power household fridges, electric kettles or large color TVs.

WRR: What are the most important finance mechanisms for renewables in the region?

MH: You have to break this down. On a national level, the most important instruments are international commercial banks, the multilaterals, the IFC, the GEF and others. These are the guys we love to hate, but when it comes to making the necessary huge financial commitments to provide the hundreds of megawatts that industry and city folk need – or to plan projects that have some hope of reaching hundreds of thousands of people – they come to the table to help pull the deals together. For large-scale project finance, private financiers are less likely to come to the table if the World Bank or IFC is not involved.

For rural and smaller scale energy projects, there are all kinds of financiers. For PV, the World Bank and UNDP-GEF have projects in a dozen or so countries. There is also the Solar Development Group and other small project-oriented loan efforts. These are mostly just developing, and the strategies have yet to be widely disseminated to the bulk of rural people. We are gaining experience, but not really fast enough. In my opinion, this type of activity is not having much impact, and I don't think that micro-finance will be the "wedge" that cracks open the renewable market, certainly not in isolation.

In Kenya, local financiers (such as Savings and Credit Cooperative Societies) are having a significant effect as they make finance

continued opposite

available for many rural people. Some of this is used for renewables. But Kenya has a very well-developed finance sector.

The Energy for Rural Transformation project in Uganda proposes to offer subsidies for PV. I agree with this approach. The tremendous growth of the PV industry in Japan, Germany and California has been fueled by subsidies. I find it odd that Germans and Japanese get their PV at half price while Kenyans have to pay full price! A 40 watt PV solar home system will make a huge difference in the lives of a rural family, but for a Japanese family, it will just reduce power bills and make them feel like they are making a difference.

WRR: Does solar energy have the potential to supply power to industrial customers in the region?

MH: Solar energy, and particularly PV, is just one option that planners have when developing energy supply strategies. So the answer is yes, but the role is small.

For urban industrial customers, electricity is a key requirement, and PV has little role there in 2003 because of its high cost. You cannot store PV. In Dar es Salaam, Tanzania, peak power demand is at 8pm (because of the air conditioning load), so you could hardly expect PV to play a role (unless it was partnered with dam storage).

When industry needs heat, then biomass (wood, agricultural wastes), coal and petroleum sources play a significant role, as opposed to expensive electricity. Solar water heaters can and are playing a role now, but it will remain a small slice of overall demand.

Large scale use of PV at the megawatt level is not in the cards for the next 10 years. The role of PV is very much for small applications (less than 5 kW) in households, institutions and commercial establishments off the grid. Unless serious subsidies are offered (as in Japan and Germany), it is simply too expensive for investors to put PV on grid. But we are moving in the direction of large scale PV usage, and I think I will see it in my retirement!

WRR: Have governments taken any policy steps to promote renewables?

MH: Governments throughout the region are becoming aware of the role of renewables, and many have been renewable supporters for a long time. Zimbabwe has been a big supporter of renewables since pre-independence days. Kenya hosted a groundbreaking global UNEP meeting in 1981. Just about all of the governments I work with (at least 10) are interested in PV and renew-

ables. Whether or not they have funding to support renewables is another question.

When it comes to removing duties, or allocating scarce government resources to renewables, it is difficult. There are so many priorities: HIV/AIDS, refugees, education, agriculture, water supply... What needs to be done is to find a way to fit renewables into existing programs and priorities – solar PV for water pumping and school lighting, wind for pumping, micro-hydro for community development. So far we have not been very good at this.

Policy is a crucial part of the problem. In most African countries, buying and selling power has been done exclusively by parastatals. So, to get wind farms, larger scale PV, community hydro and other electricity projects going will require a considerable amount of restructuring in the power sector. The World Bank is behind the restructuring and privatization of power sectors throughout the continent – this will benefit renewables. But it is also not so easy, and not all governments are 100% cooperative. Unless there is access to market (for example, unless wind farmers can sell attractively), there will be no investment.

However, wherever I go, I find people interested. The private sector will be the engine of renewable development.

WRR: What do you think the next 20 years have in store for renewables in the region?

MH: When I got involved in renewables in 1983 in Kenya, they were much talked about by people in development, but not very commercialized. In the past 20 years, there has been amazing progress, and I find that there is more work than I can do now. We have come a long way. In many respects, Kenya is ahead of many Northern countries in development of renewables, and the US could learn from Kenya!

PV is going to be a big player in off-grid electrification. But it will be small systems, and institutional systems. In the long run, banks of PV modules pumping power into the grid will be there, but the price has to come down, and the power has to match needs. The overall PV market in Africa is probably less than 30 MW of peak power per year – this will grow as fast as demand does in the rest of the world. If subsidies are put in place to kick off the market systematically in Africa as they have been elsewhere, I would see the market in Africa growing to 10-20% of the world market.

Solar thermal is already important for water heating. This is growing. We are beginning to see successful solar cooking experi-



Photo: Shannon Graham

Rural Kenyan woman holding her new PV panel.

ences, and I can see this finding a niche, though it will not replace traditional forms of cooking.

Wind has a huge potential for water pumping and off-grid electrification in East Africa. In my last trip around Kenya, I saw dozens of wind pumps and even a few generators on rural houses. Wind has not got much donor support thus far.

Micro-hydro is a totally unexplored area. In Ethiopia, there are several thousand potential megawatts of micro applications. Given that small scale hydro doesn't have the negative impact of large-scale hydro, I think it has an awesome potential. But this also needs some coordinated support.

We should not forget about biomass when speaking of renewables. Africans are farmers, and there are huge amounts of agricultural wastes, animal wastes, wood and other vegetable resources that can be tapped to generate electricity or raise heat. The challenge here is modernizing old and inefficient practices and ensuring that supplies are sustainable. We need to start thinking more about energy crops. Biomass provides over 70% of the region's energy, and this will not change overnight.

In short, there already is a strong off-grid renewable industry in many parts of the continent. Kenya's PV industry is worth well over \$8 million a year. I am extremely optimistic. We all know that the old forms of energy are getting more scarce, more expensive while at the same time demand is increasing dramatically. I believe that in the region we can move from 2% access to electricity to 20% in my lifetime. ■

Human Rights Dammed Off in Turkey

Planned Dam Projects Target Kurdish Heartland

by Anders Lustgarten

As the Turkish government contemplates entering Iraq's Kurdish zone to prevent Kurdish refugees from crossing the border, it is also contemplating a more concrete form of population control in its own Kurdish region. The government is in the process of completing feasibility studies and engineering surveys for two massive new dam projects which would inundate a national park and dislocate thousands. The projects, in the Munzur Valley near Tunceli, and in Hakkari, in the far southeast near the Iraq border, appear to be more about strategic control of the region rather than the need for electricity. Construction is officially scheduled to begin this spring, although NGO scrutiny and practical difficulties may force a temporary delay.

A total of eight dams are planned for the Munzur Valley, Turkey's first and foremost National Park, where the construction consortium includes US and Austrian companies. The Hakkari Dam, the first of three planned for the Zap River, is to be built by a Turkish-American consortium including the giant arms manufacturer Raytheon.

These dam projects involve environmental destruction, forced displacement, non-existent consultation and fiscal ineptitude. The objectives of the projects clearly have far more to do with the politics of regional control and the continuing oppression of the Kurds than energy generation.

Controlling Rivers & People

The Munzur Valley dams are part of the controversial Southeast Anatolia Project (known by its Turkish acronym, GAP). This vast US\$32 billion scheme, comprising a total of at least 22 large dams (and possibly as many as 90, according to Syrian officials) concentrated exclusively in the Kurdish regions of the southeast, is ostensibly intended primarily to generate electricity. Yet, despite the fact that to date only 12 of the dams have been built, Turkey is already suffering from an energy glut. Both its natural gas and electricity markets are saturated, to the extent that the government is refusing to fulfil numerous electricity purchase contracts because of over-production and the drop in demand caused by recession. At least 17 electricity producers have taken the Turkish govern-

ment's electricity watchdog to court for breach of contract.

Many observers believe that GAP has an entirely different agenda. The UK government think-tank UK Defence Forum highlighted Turkey's increasing use of water as a political weapon of leverage, describing GAP as "one of the region's most dangerous time-bombs." An NGO mission report of July 2002 detailed the long-standing disputes over water provision between Turkey and its downstream riparians Syria and Iraq, chronicling the decline in water quality and volume of both the Tigris and Euphrates and noting that Turkey now possesses the capacity to cut off the downstream flow of both rivers altogether for a considerable period of time.

Others have emphasized the use of GAP in the large-scale displacement of Kurds from their homelands in the southeast, emblematic of the systematic oppression and disruption of Kurdish society since the inception of the Turkish state. Dam projects result in the widespread inundation of agricultural land, villages and towns, cutting off transportation links between settlements and effectively making normal life impossible.

Dams displace people not just primarily, forcing them off their land to build new projects, but also secondarily, preventing them from returning to their rightful homes. At least three million people were displaced during the 15-year conflict between the Turkish state and Kurdish guerrillas (PKK); the vast majority now live in shanty dwellings on the outskirts of major cities, from where they constantly petition the government for the right to return to their homes. For many, the construction of the Munzur and Hakkari dam projects will constitute the most permanent of denials.

In a leaked 1993 memo from then-President Turgut Ozal, the intimate connection between GAP and the military displacement of the Kurds is clear: "To prevent the locals' return to the region [after military displacement], the building of a large number of dams in appropriate places is an alternative." As the State of Emergency is lifted in the Kurdish regions and the military presence becomes somewhat less overt, the importance of that alternative becomes ever more evident.



Photo: KHRP

The Munzur Valley.

Born Corrupt

Two of the Munzur dams and the Hakkari Dam were signed into life as part of an America-Turkish Joint Statement in 1998, whose primary signatories were US Secretary of Commerce William Daley and Turkish Energy Minister Cumhur Ersumer. In January 2001, however, a government investigation revealed major corruption in the Turkish state's allocation of major energy contracts.

Energy Minister Ersumer – along with other top Ministry of Energy bureaucrats, senior officers of the state electricity corporation TEAS, and numerous businessmen – was accused of bribery and favoritism in the improper awarding of multi-billion dollar energy contracts. As a result of the investigation, 15 high-ranking officials, including the former head and deputy head of TEAS, a former minister of state and four officials from the Ministry of Energy, were given long prison sentences.

Ersumer himself, as a serving minister of state, was immune from prosecution. But implicated in the corruption by many other participants in the investigation, he was forced to resign. In a state in which the World Bank has described corruption as "endemic," a very large dark cloud of corruption therefore hangs over the Munzur and

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Hakkari contracts. New investigations have recently been opened into the conduct of the companies involved, with the strong possibility of further criminal charges.

Background on Munzur

The central Munzur dam project, Konaktepe, is to be built by the US engineering firm Stone and Webster, the Austrian firms Strabag and VA Tech, and Turkish constructors Soyak and Ata. VA Tech was involved in the discredited Ilisu Dam project (currently shelved) and the Karkamis Dam on the Euphrates, to which Syria formally objected in 1996, while Ata's construction work has been held responsible for the partial subsidence of the showpiece Ataturk Dam. It is expected that financial assistance will be sought from, among others, the export credit agencies US Export-Import Bank, the Austrian OeKB and the German Hermes.

If built, the eight dams of the Munzur Valley would cost at least \$2 billion, and produce less than 1% of Turkey's total annual production in an already glutted market. Following a pattern set by earlier dams in the region, virtually all the electricity produced by this project would go to western Turkey, with little remaining in the region despite local energy deficiencies.

Local people in the Tunceli region, long a center of Kurdish resistance, say that the dams are only the latest form of state-sponsored displacement. Evidence of the state's intentions for the region, they suggest, date back to the 1930s, when a military report advocated the flooding of the Munzur valley. During the massacres of 1937-38, an estimated 80,000 people were killed; the region was kept under *de facto* military rule for decades afterwards. Under the official state of emergency, which began in 1987, hundreds of villages were forcibly evacuated; at least 60,000 people fled the region. In the words of one villager, "The state burned our villages. Then they burned our forests. Now they are building these dams...There will be nothing left."

The state of emergency was officially lifted in Tunceli in July 2002, but the military maintains a strong presence in the region. The central state continues to impoverish the region by withholding funds; the vast majority of people live on remittances from relatives working in Europe. Locals say that because the state considers them terrorists, it constantly rebuffs their suggestions that the undeniable tourist potential of the region be developed to bring in valuable foreign currency.

National Park Be Dammed

The Munzur valley, where the dams are to be built, was designated Turkey's first

"The state burned our villages. Then they burned our forests. Now they are building these dams...There will be nothing left."

A Kurdish villager in the Munzur Valley

National Park in 1971. The dams are thus in violation of at least two major Turkish laws, the Forestry Law and the Protection of National Parks law. Local groups have filed several cases in Turkish courts, but the government frequently rides roughshod over court decisions.

Munzur is an area of outstanding natural beauty, featuring many species found nowhere else, and also contains many sites holy to local people. The dams would destroy the river valley's ecology, changing the climate and flooding fertile arable lands. It would also cut off the roads connecting local towns, for which no replacements are planned. Many, including the local mayor, suggest that life in the region will become impossible, provoking the wholesale migration of those left in Munzur and preventing those already displaced from returning.

None of the companies involved in the dam projects have undertaken the Environmental Impact Assessments required by Turkish law prior to starting construction, nor the legally required consultation and compensation work. A recent fact-finding mission to the region by nongovernmental organizations found that the implementation of these dams violates both World Bank best practice policies and the recommendations of the World Commission on Dams (WCD) on numerous counts.

During the building of the Uzunçayir Dam, now nearly finished, contractors brought workers, equipment and even food in from other regions, bringing no economic benefit to the region whatsoever. Only a handful of affected people were compensated, the majority of whom received only a quarter of the market value of their land. It will take a full two years to fill the Uzunçayir, the first of six dams planned for the Munzur River itself (two more are slated for its tributaries), during which time downstream water supplies will be severely affected.

The NGO mission heard allegations of corruption by local leaders and even of the extrajudicial killing of dam opponents. It was suggested, without formal proof, that local

deputies had made use of their position to get favorable compensation deals for themselves and their tribes, even acting as intermediaries between the state and the construction companies. The mission was also informed that after a group of village leaders returned from a trip to Ankara to petition against displacement, some ten of them were taken away one by one and killed.

Background on Hakkari

Hakkari will involve the US arms maker Raytheon, Turkish firms Dolsar and Kiska, and the French firm Alstom, raising the possibility of applications to export credit agencies, including the French COFACE and the US Ex-Im.

Due to its strategic location near the Iraqi and Iranian borders, Hakkari is highly militarized; local people describe the town as an "open prison" with 8-10 soldiers per family. The surrounding villages were also cleared during the war against the PKK, with the result that an estimated 100,000 internally displaced people live in shacks on the outskirts of Hakkari, originally a town of only 30,000. Many of these displaced people are petitioning the state for the right to return home, which has repeatedly been refused due to the area's strategic sensitivity. Local people suggest that the same rationale motivates the construction of the dam.

Despite this, the plan for the Hakkari Dam calls for the displacement of 15-20 villages, affecting up to 10,000 people. These people have already been displaced in the military conflict with the PKK, and now face being uprooted again. Because the land they currently occupy belongs to the state, they will receive virtually nothing in compensation.

continued on page 13

What You Can Do

Funding will in all likelihood be sought from the export credit agencies of the US (Ex-Im), Austria (OeKB), Germany (Hermes), Switzerland (ERG) and possibly France (COFACE). Write to these ECAs; to inquire about their involvement in these projects, and warn them of the political dangers of being associated with such egregiously harmful projects. Demand to know whether and why public money is being used for these projects. Write to the companies involved and question them as to their rationale for involvement in projects with such high reputational risk. The contact addresses of the export credit agencies can be found at www.eca-watch.org.

Connecting the Drops Holistic V

by Lori Pottinger

While many US citizens take water for granted, a large and growing number of urban areas in this wealthy land now regularly suffer from problems more often associated with developing nations: flooding, poorly maintained infrastructure, water shortages and water-borne diseases. Water managers are beginning to look at their watersheds as a whole and finding that, with a little creativity, they can convert “problems” into solutions.

Sun Valley, California is plagued by winter flooding that makes streets impassable, keeps kids from going to school, and causes damage to property. The Los Angeles-area suburb has no storm drainage system, so during the rainy season it regularly finds its streets awash in water. Retrofitting city streets with a stormwater system would have been massively expensive.

Like most urban areas, an over-abundance of impermeable surfaces in Sun Valley – roads, roofs, paved schoolyards and sidewalks – is the major culprit, leaving little unpaved area to absorb rainfall and causing it to run off too quickly.

But some creative thinkers saw opportunity in Sun Valley’s watery woes. With the help of a variety of partners, the county is now working to implement a plan that would solve its flooding (and other water problems) through low-impact watershed management techniques that capture storm runoff in vegetated areas and rainwater catchment devices. The system allows rainwater to percolate back into the ground, not only reducing flooding but also replenishing water supplies.

Sun Valley’s watershed plan was inspired by the efforts of the LA-based nonprofit TreePeople, whose TREES program (www.treepeople.org/trees) champions natural watershed management techniques for urban areas, and helped create sustainable designs for typical land uses in the Los Angeles River basin.

“In LA, we receive half the water we need in rainfall, and we throw it away. Then we spend hundreds of millions to import

water,” said Andy Lipkis, president of TreePeople. “We can no longer afford this approach economically, socially or environmentally. So we challenged the County Flood Control District (the local partner of the US Army Corps of Engineers) to look at alternatives.”

The Army Corps, a federal agency renowned for throwing concrete at most problems, at first rebuffed TreePeople’s call to action, saying no viable alternatives existed to its plan to heighten the walls of the already constrained LA River. TreePeople persisted: they built a demonstration project to show how rainwater can be captured at the level of the single-family home (a land use that covers 60% of Los Angeles). The project helped convert key players at local flood control and stormwater management agencies (most notably, the LA County Flood Control which, through this process, changed its name and mission to LA County Watershed Management Division).

The Sun Valley program is part of a watershed “makeover plan” for the greater Los Angeles basin. This plan would convert Los Angeles from a concrete jungle, whose infamous channelized “river” is the most glaring symptom of its watershed-wasting disease, to a greener place that responds to natural events in more sustainable patterns. In 1997, TreePeople brought together dozens of urban planners, landscape architects, engineers, urban foresters and public agencies to devise “best management practices” and a plan of action for the Los



Before: Broadous School was a sea of asphalt.

Photo: Mia Lehrer



Field infiltrators being installed at Broadous School.

Photo: Cultec

Angeles watershed. “It’s not just about flooding. It’s about healing our neighborhoods and the city,” Lipkis says. The goal of the project is to create 50,000 jobs, cut water imports by 50%, reduce water pollution in surrounding bays, reduce flooding and improve air quality.

Not far from Sun Valley, the Broadous elementary school is an “anti-concrete” example of these living-watershed tactics at work. The school, also in the LA River watershed, now collects all of its rainwater on-site, and is a living laboratory for the concepts behind the bigger citywide plan. A team including TreePeople, the LA school district, the LA Department of Water and Power and other partners devised a comprehensive plan to reduce the school’s flooding problems, its energy use, and its contribution to the urban “heat island effect” (in which paved surfaces result in hotter temperatures in urban areas).

The Broadous plan was implemented in 2001. More than 30% of the asphalt was

Watershed Approaches Take Some US Cities by Storm



Photo: David O'Donnell

After: Paving at Broadous school has been replaced with rain-absorbing planted areas and trees.

removed from the school yard and replaced with landscaped areas sloped to catch runoff from remaining hard surfaces. The green areas sit atop a state-of-the-art "infiltrator" system which can store up to 93,000 gallons of rainfall until it is absorbed into the soil, where it replenishes groundwater and keeps clean rainwater out of the stormwater system. Some 220 new trees at the school also help intercept rainfall and slow runoff, while also reducing the school's energy costs (by as much as 18%, according to TreePeople) by shading buildings and air-conditioning units. "Another thing that's important about this project is that the school's lawn is now a net water provider," Lipkis says with pride.

The school's students are key players in spreading the lessons of Broadous. Students analyzed their campus watershed system, proposed solutions to the problems plaguing their campus, and learned about the school's unique role in the watershed through a special curriculum developed as part of the project. "The kids are learning that everyone's a manager of their own ecosystem, and they're learning skills to help manage it better," Lipkis says. "We start with kids, and the information gets back to their families, and then

to community leaders, and then agencies, and eventually officeholders."

Broadous is just the first in line for this approach. One of the TREES program's goals is to implement watershed techniques at the 400 Los Angeles schools being repaved under a school repair bond.

The Los Angeles basin is hardly alone in the search for long-term, integrated solutions to chronic water shortages and expensive stormwater removal problems. A new wave of holistic water management programs in the US was set in motion by regulations adopted a few years ago by the US Environmental Protection Agency (EPA), which require cities and developers to decontaminate stormwater before discharging it into rivers, lakes and coastal waters. Developers had challenged the EPA rules in the courts, but in January, a US federal court upheld them.

The EPA's rules address a huge, mostly invisible problem. Urban stormwater runoff is the largest source of pollution in US coastal waters and the second largest source of water pollution in US estuaries, according to EPA data. It is also the largest known source of bacterial contamination which

closes thousands of beaches each year. Stormwater pollution also increases flooding, erodes stream banks, and destroys wildlife habitat.

Leading the Way

The City of Austin, Texas is ahead of the game in addressing the EPA rules, and has discovered how much water it can save by preventing stormwater from running down the drain. Austin boasts one of the nation's most extensive programs to capture rainwater and promote the use of alternate on-site water resources. Many Austin businesses, government buildings and homes capture rainwater from their roofs, and have systems to re-use air conditioner condensate and water collected by sump pumps, in French drains and from other non-conventional sources. "Promotion of these sources of water serve to both supplement conventional potable water supply and to provide an excellent way of educating the public about the dynamics and limited availability of these resources," says Bill Hoffman, coordinator for the city's industrial-commercial water conservation programs.

Industrial, commercial and institutional facilities have taken advantage of the city's rebates of up to one dollar for every gallon per day saved (up to \$30,000 a year). Additionally, commercial entities that can provide 100% of their landscape irrigation needs from alternate sources can be exempt from installing an irrigation meter, which can save many thousands of dollars in fees. The industrial program has saved 73 million gallons of water a year so far, with an investment by the city of \$150,000 in rebates, Hoffman reports.

The rebate programs are actually saving Austin money. Hoffman says that it would cost at least \$1.50-\$2.50 per gallon per day to build a new stormwater treatment plant, versus the \$1/gal./day rebates the city offers to large users. Saving water means saving electricity, too. Hoffman notes that in the US, 4-5% of electricity is used by water supply and treatment facilities. "We're backing out future costs with these systems. It works out for us."

Some of Austin's more interesting water-reuse projects include the following:

- In 1980, the University of Texas at Austin began to recover cooling water from campus research laboratories. They have

continued on page 14

New Studies, Same Old Problems for Latin America Industrial Waterway

by Glenn Switkes

Six years after the most expensive environmental studies ever undertaken in Latin America were rejected as inadequate to justify construction of the Paraguay-Paraná River industrial waterway, a new attempt is being made to revive the project, and a new set of studies is being carried out. The issuing of terms of reference for the studies, and the closed-door negotiations with consultants who will carry out these studies, has perplexed and angered activists who for years have lobbied to give the public a voice regarding the controversial project.

Prior studies on the waterway (or *hidrovia*) were financed by the Inter-American Development Bank. This time, it is the Andean Development Corporation (CAF) which has provided some US\$940,000 for the studies to the Inter-Governmental Committee on the Hidrovia (CIH). The CIH works in collaboration with the transport and foreign ministries of Bolivia, Brazil,

Paraguay, Argentina and Uruguay, the five nations which comprise what is known as the La Plata basin

In a letter to CAF, the CIH, and the United Nations Development Programme, which is providing technical assistance regarding the studies, the 300-member Rios Vivos coalition, which opposed the original *hidrovia* plan, criticized the fact that the new Terms of Reference call for consultants to design a plan “to complete the *hidrovia*,” rather than to determine whether there are cheaper and less destructive alternatives for regional transportation. Rios Vivos notes that, although the new studies will not include engineering works upstream of Corumbá, Brazil, engineering works are planned within the Pantanal wetlands. The new scheme targets one of the narrow river passes thought to contain outflow of waters from the Pantanal during the dry season.

The Rios Vivos letter also criticized the fact that the new studies are described as “comple-

mentary” to the original IDB-funded studies, which have been widely acknowledged to be inadequate. “With the previous studies having been rejected, the new studies can therefore only provide similar results to those already found to be unacceptable,” the letter states.

Noting that the new terms of reference do not require public consultations, nor taking into account the volumes of independent analyses of the *hidrovia* that were publicly released during the earlier debate about the project, Rios Vivos has called for the suspension of the new studies, and for an analysis of alternatives for transportation and regional development.

Even the flawed studies acknowledged that rail links could haul soybeans to Atlantic ports at a lower cost than the *hidrovia*. And critics of the project say the *hidrovia* is nothing more than a thinly veiled subsidy for multinational soy traders, and will accelerate the turnover of family farms to large soy plantations. ■

Will New Government Help Dam-Affected People in Brazil?

by Glenn Switkes

The scene would have been almost unthinkable in past administrations: leaders of the Movement of Dam-Affected People (MAB) in an informal, almost friendly discussion with the president of Eletrobrás, Brazil’s state power utility, in the company’s boardroom. It was a far sight from last year’s pre-Lula meeting, when MAB was allowed to meet with power sector officials only after hundreds of dam-affected families had occupied the Ministry of Mines and Energy office in Brasília.

Under the new government of Inácio “Lula” da Silva, some things have changed. The Lula-appointed president of Eletrobrás, Luiz Pinguelli Rosa, listened attentively to MAB’s demands, agreeing to take emergency action to alleviate the suffering of families who had been uprooted from their homes and resettled on inhospitable lands to make way for dams, and conceding that Eletrobrás could help promote regional development programs to benefit dam-affected communities.

But some things remain the same. Lula’s new Workers’ Party government does not yet

seem open to radical changes to the nation’s direction in the energy sector. MAB’s request for suspension of new dam projects and a change in the national energy model was received with a shrug, as Pinguelli announced that he considered building new dams the best and cheapest way to meet the country’s future energy needs. “We want new projects to include environmental and social considerations from the beginning,” he said, adding, “All energy projects have a cost – we want to minimize these impacts.”

Contrasting his position with that of new Environment Minister Marina da Silva, who grew up in a community of rubber tappers in the Amazon and is expected to be outspoken in regards to environmental protection, Pinguelli told MAB “I’m not one of those who thinks that we shouldn’t harm even a turtle. The region cries out for development.”

Pinguelli told MAB that Eletrobrás is reviewing the plans for the huge Belo Monte dam on the Xingu. In addressing two principal criticisms of the dam – that the flow of the Xingu would be interrupted, affecting

communities downstream of the dam, and that the seasonal falloff in the Xingu’s flow would make the project uneconomical – Pinguelli announced that Eletrobrás is studying lowering the capacity of Belo Monte (originally designed to generate 11,000 MW at full output), and the construction of a natural gas-fired thermoelectric plant to complement Belo Monte during the dry season. Reports indicate that this will raise the total cost of Belo Monte, including transmission lines, to some \$7.25 billion.

Another Amazon mega-project has emerged under the new administration. Regional state utility Furnas has proposed construction of two dams with a generating capacity of 7,480 MW on the Madeira River. In addition to the dams, the project would include an industrial waterway, which Furnas says would permit barges loaded with soy and other grains to reach Peru and Bolivia. Furnas even speculates that Bolivia could build a dam on the Beni River to take advantage of the transmission infrastructure to export energy to Brazil. Skeptics say that

continued opposite

Nam Leuk: Another ADB-Funded Dam Fiasco in Laos

by Susanne Wong

According to the Asian Development Bank (ADB), the social and environmental impacts of the Nam Leuk Hydropower Project in Laos have been resolved. However, an IRN trip to the affected areas reveals a different story – one of ruined livelihoods that has been repeated all too often with hydropower projects in Laos.

“In the past, we could catch and dry fish and sell it in the markets, but now we cannot do so. There’s less fish in the river. Some species have entirely disappeared,” said a leader from a village downstream of the dam. “Consultants came to visit awhile ago and made promises of fish ponds and other compensation, but these have not appeared.”

The Nam Leuk Hydropower Project, which was completed in 1999, was funded by the ADB and the Japanese government. The project, located within the Phou Khao Khouay National Biodiversity Conservation Area in Vientiane Province, diverts water from the Nam Leuk River to the Nam Xan River.

Although more than 9,500 people were expected to face direct impacts from the dam, almost no consultation with affected villagers occurred until long after the project was planned and approved. Last October, Edvard Baardsen, ADB Deputy Head of Mission, said that the Bank considers the social and environmental impacts of Nam Leuk resolved. Contrary to this optimistic assessment, the IRN visit revealed that people have suffered from unmitigated impacts to fisheries, drinking water sources, vegetable gardens and health. Promises of compensation made by officials and consultants have not fully materialized. In violation of ADB policy, the Bank has failed to ensure that affected people are no worse off as a result of the project.

Brazil continued from page 10

the Madeira’s sediment load, highest of the major rivers of the Amazon, would make the dam economically and ecologically unfeasible.

MAB, along with other popular movements in Brazil, has supported the Workers’ Party as it has grown into national prominence over the past two decades. Still, MAB leaders recently told the Minister of Mines

Left High and Dry

In October 2002, IRN met with villagers from Ban Nyang Kheua and Ban Phone Ngam, located along the Nam Leuk River downstream of the dam, and recorded their concerns. Villagers had been promised new water supply by project authorities, but still do not have enough water during the dry season. Before the dam was built, they relied on the river for drinking water. Now, if they drink the river water or bathe in it, they get rashes and stomach ailments.

Although some wells have been built, they are insufficient. They require regular maintenance and are empty by the end of the dry season. Ban Nyang Kheua villagers were told that water from nearby villages would be pumped to their village. However, they could not operate the pumps because they were not connected to the electricity grid. Since the October visit, there are reports that transmission lines have been erected in Ban Nyang Kheua and Ban Phone Ngam. However, few houses have been connected to the grid because of the exorbitant connection fee (roughly half of annual per capita income). Villagers believed this would be provided free of charge.

Villagers also reported that lower levels of water in the Nam Leuk River have made it difficult to irrigate their vegetable gardens. They have to carry water over longer distances to water their gardens during the dry season.

Decreased fish populations in the Nam Leuk have impacted the livelihoods of villagers in Ban Nyang Kheua and Ban Phone Ngam. Before the dam was built, they caught 2-4 kilograms of fish per day for subsistence and income. However, catches are now typically less than one kilogram. Despite spending more time fishing and investing in more expensive gear, they cannot catch enough fish to sell in the markets and sometimes do not

and Energy that although they support the new administration, they had a responsibility to pressure the government to move its energy policy in the right direction. Marco Antônio Trierveiler of MAB said, “We will work with the government – but when necessary, we will take to the streets or take over dams, to help our government do what’s right.” ■

have enough to eat. They can catch only small fish, and many fish species have disappeared.

“It is hard to catch fish in the river now,” said a woman from Ban Phone Ngam. “We have to just rely on harvesting vegetables and collecting things from the forest to eat.”

When IRN visited villages previously in 2000, villagers said Resource Management and Research (RMR) consultants, in charge of carrying out the mitigation program for Nam Leuk, visited and promised fish ponds and other livelihood replacement programs. Since this time, none of the promised compensation measures have materialized, and representatives of state utility Electricité du Laos and RMR have not returned to meet with villagers.

Villagers living along the Nam Xan have also faced impacts to their livelihoods because of the Nam Leuk Dam. In July 2000, villagers in Ban Thamdin reported declines in fish populations and water quality and increases in health problems along the Nam Xan since the dam was built. Contaminated water released from the reservoir led to the deaths of hundreds of chickens, buffaloes, pigs and goats in Ban Thamdin. High water levels also inundated vegetable gardens and reduced production by a third.

Poor Trade-Off

The ADB approved Nam Leuk in part because its revenues would be used to support conservation of the Phou Khao Khouay National Biodiversity Conservation Area. However, management of Phou Khao Khouay is reportedly inadequate and funds are not being properly allocated toward the park, as stipulated in the ADB loan agreement.

Despite its expressed commitment to follow-up monitoring of Bank projects, the ADB has failed to monitor the impacts of its hydropower projects in Laos. No follow-up monitoring of Nam Leuk has occurred even though the Bank emphasized its importance last year in the Project Completion Report.

Whether the commitment exists at Nam Leuk to properly document future livelihood losses and to adequately and appropriately compensate villagers for these losses remains to be seen. For now, the experience at Nam Leuk is another example of the ongoing problems with implementing hydropower projects in Laos – problems which are being repeated with the Nam Mang 3 Hydropower Project, currently under construction (see page 3). ■

WCD Redux?

A Rocky Road for the World Bank's "Extractive Industries Review"

by Korinna Horta

The World Bank has been in the spotlight of late for its role in promoting environmentally, economically and socially harmful "extractive industries" in developing economies, and the emerging picture is not a pretty one. In response to civil society criticism of Bank investments in the gas, oil and mining sectors, the World Bank launched the Extractive Industries Review (EIR) in August 2001. The stated goal was to analyze the institution's role in promoting extractive industries and to examine whether its investments in this sector contribute to poverty alleviation and broader sustainable development.

In comparison to the more participatory World Commission of Dams, which joined representatives from governments, academia, industry and civil society organizations, the EIR uses the "Eminent Person" model, where a single individual appointed by World Bank President James Wolfensohn is in charge of the entire process. Wolfensohn appointed Emil Salim, a former Minister for Population and Environment in Indonesia's Suharto government. Salim's final report is expected in September.

As with large dams, the Bank plays an influential role in promoting this sector. In Africa alone, it has provided nearly US\$3 billion for fossil fuel and mining projects since 1990, and helped over 30 African countries revise their mining codes to create an enabling environment for foreign investment and promote export-led economic growth. This, the World Bank believes, will lead to poverty reduction via the trickle-down effect. Unfortunately, the World Bank itself does not have the empirical evidence to buttress these rosy expectations. Accord-

ing to a recent report by the institution's own Operations Evaluation Department, the lack of systematic monitoring and evaluation of Bank activities has contributed to a major knowledge gap about the Bank's impact on social conditions and poverty.

The EIR includes a multi-stakeholder process to consult with governments, industry and civil society. Consultations have been held in Latin America, Eastern Europe and sub-Saharan Africa; two more are scheduled in Asia and North Africa. At the Africa consultation, which took place in Mozambique in January, Salim emphasized that all the stakeholders were equally important. In reality, of course, the situation could not be more unequal. Some of the stakeholders hold power and guns and reap benefits from the extractive industries, while others are virtually powerless and take the brunt of the repression and ecological devastation caused by the extractive industries.

During the Mozambique consultation, people directly affected by World Bank activities in Tanzania and Chad provided moving testimony on the suffering inflicted upon their communities. NGO representatives working with affected people from Cameroon, Nigeria and other countries presented information on the increase in poverty rates and the repression they have experienced after speaking out about the situation. World Bank representatives responded by stating that investments in resource extraction can contribute to poverty reduction if the conditions are right. When asked what constitutes the "right conditions," a Bank staffer responded, "That is the million-dollar question." Even if the Bank knew the answer to the question, one wonders if it would

actually limit support for the extractive industries to countries where these conditions are being met.

The consultations in Latin America and Eastern Europe produced NGO declarations calling for specific areas where no investments in extractive industries should be made, known as "No Go Zones," and for a ban on the use of certain technologies. Perhaps in recognition of the fact that World Bank performance is worse in Africa than in many other regions (a fact which the Bank acknowledges), the African NGO statement also called for a moratorium on World Bank support for mining, oil and gas on the continent until adequate and transparent mechanisms are established for lending and damage caused by current World Bank activities is addressed.

After the World Commission on Dams released its report in 2001, the World Bank – which helped establish the WCD, and participated in the process – refused to incorporate WCD findings into its own policies; indeed, it has recently announced it intends to increase its involvement in large dam projects in coming years. Similarly, this consultation process has a smell of futility about it. A working paper by the bank about the EIR consultations now in circulation ignores the serious concerns already raised by NGOs, and concludes, remarkably, that not only are the extractive industries an effective tool for poverty alleviation, but that the Bank should increase its support for the sector.

The Bank's remaining credibility with NGOs is now seriously at risk. ■

The author is with Environmental Defense.

Day of Action continued from page 1

press time had summoned the police to punish the demonstrators.

In Maranhão and Minas Gerias states, thousands of dam-affected people protested against construction of dams and against energy-intensive industries, especially aluminum producers, who pollute the environment, encourage dam-building and receive energy at subsidized prices. Protesters occupied dam sites and corporate headquarters of the mining and aluminum consortium.

In the state of Tocantins, 400 dam-affected people protested against Peixes Dam. And in Rio Grande do Sul state, dam-affected people and the Small Farmers' Movement packed a public hearing in opposition to AES' request to raise electricity rates. These rate hikes penalize the poorest segments of society to increase the profits of transnational companies.

According to Hélio Mecca of MAB, "Generating electricity with large dams has brought Brazil to a situation where thou-

sands of people are driven from their lands, jobs, and livelihoods. This model has created a great dependence on high-cost technologies, and caused a huge external debt and widespread environmental destruction."

MAB promises to carry out broader actions if companies and the government do not show they are willing to change Brazil's energy policy. According to Mecca, "the objective of the dam-affected movement is to help the new government carry out the

continued on page 15

IN PRINT

Before the Deluge: The Vanishing World of the Yangtze's Three Gorges, by Deirdre Chetham. Published by Palgrave Macmillan, 2002. \$24.95

If you have never traveled to China's Three Gorges, *Before the Deluge* will take you there. As a guide on the Yangtze River and China historian for 20 years, author Chetham has traveled the Yangtze more than any other foreigner. Anyone interested in China, its rivers and people will be interested in Chetham's timely study.

At its best, the book provides a broad historical description of the forces that have pushed one of the most remote and independent areas of China into full engagement with the outside world. It also expertly captures, in an up-close and personal style, the daily life and traditions of the people who live in a region that is on the brink of destruction by the dam's massive reservoir.

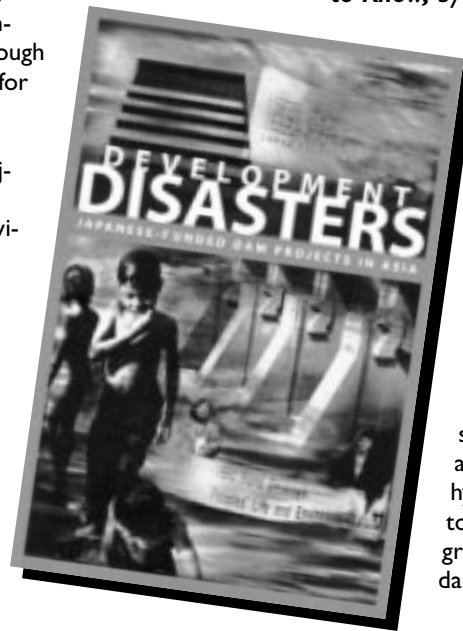
Although it is the most current book available about the Three Gorges project, it falls short of being truly comprehensive by giving short shrift to critics' warnings that the project is technically and economically unviable. Recent experience with large hydro in China indicates that the Three Gorges project's expensive electricity may also go begging, as have other large dams' output, but Chetham leaves out this important part of the picture. Instead, she echoes official propaganda in the dry, impassive tone of a foreign-service officer (which she once was), repeating the official line that the dam will provide 10% of China's total electricity output and control the river's flooding.

She fails to note that outgoing Premier Zhu Rongji, an economist by training, did not include the dam in his 1998 Yangtze

flood control policy – an indication that the government has little faith in the dam's flood-control effectiveness. Project managers also recently admitted that the dam should not be the only investment in flood management. Chetham expertly documents the project's long history but, perhaps intentionally, stops short of criticizing the insulated leaders and global institutions that steadily push the project forward. What world governments and corporations know – and what is absent from Chetham's account – is that dam construction is fueled by a tragic combination of international corporate greed for construction contracts, hubris, information control and blind faith in an obsolete technology. **Doris Shen**

Development Disasters: Japanese-Funded Dam Projects in Asia, by IRN, Rivers Watch East and Southeast Asia, and Friends of the Earth Japan, 2003. Free for downloading from www.irn.org

This report reveals how the Japanese government funds, through the Japan Bank for International Cooperation (JBIC), dam projects with enormous social, environmental and economic impacts outside of Japan. JBIC is a publicly funded institution that provides government-backed loans and guarantees for the overseas



operations of Japanese corporations, and development assistance to developing countries. It is one of the largest development agencies in the world, with annual disbursements of around US\$17 billion.

The report's six case studies describe specific problems with JBIC dams in Malaysia, Indonesia, the Philippines, Thailand and China; and analyzes common problems that continue to surface on JBIC dams. Case studies include recommendations to solve dam-specific problems, while the report also offers recommendations on how to reform the organization to avoid such problems in the future – such as adopting the guidelines of the World Commission on Dams, establishing an independent review team to assess impacts of JBIC dams, and establishing a process to deal with unresolved social and environmental impacts of its past dam projects.

Dammed Rivers, Damned Lies: What the Water Establishment Doesn't Want You to Know, by IRN, 2003. Free for downloading from www.irn.org

This new IRN briefing kit exposes the myths behind large dams and promotes equitable and sustainable solutions for meeting the world's needs. The kit was created for the Third World Water Forum in Kyoto, Japan by Friends of the Earth Japan and International Rivers Network. It includes papers on the problems with large dams, real solutions to the world's water and energy needs, how hydropower threatens efforts to curb climate change, and the growing success of Japan's anti-dam movement.

Turkey continued from page 7

During the recent NGO fact-finding mission, the mayor of Hakkari suggested that an "economic blockade" of the town was in place, aimed at impoverishing the region. The companies involved in the dam project have made no contact with local authorities, nor have they undertaken environmental impact or social assessments required prior to such projects. Although the Zap River flows into Iraqi Kurdistan, no consultation has been undertaken with communities or coun-

tries downstream who may be affected. Again, this violates both the World Bank policies and WCD guidelines on multiple counts.

Conclusion

The supposed energy generation rationale for the construction of the Hakkari and Munzur dams is patently transparent. In reality, strategic control of the region and the acceleration of Kurdish displacement are

the primary motivations behind the projects. On top of the severe damage they will wreak on the fabric of local Kurdish society and the environment, the dams have at best negligible economic benefits. ■

The author works with the Kurdish Human Rights Project in London. His new report, "This Is the Only Valley Where We Live: Turkish Dams, Displacement and the Fate of the Munzur Valley," is available at www.khrp.org.

since added the recovery of air conditioner condensate water and water pumped from French drain systems around buildings on campus. The recovered water has been used in the campus cooling towers as makeup water. To date, they estimate that they have saved over one billion gallons of water.

- Two local concrete ready-mix facilities collect at least half of their annual operational water needs for making concrete and washing trucks from stormwater collection systems. The companies installed catch basins to retain rainwater runoff from their facilities to meet the EPA and City Watershed Protection regulations. "These activities have reduced water use by several million gallons a year," Hoffman says.

- The City of Austin itself has been a champion water saver, Hoffman reports. In 2000, the City reused an average of 2.6 million gallons per day (MGD) for irrigation, 4.6 MGD at wastewater treatment plants and 2.5 MGD at water treatment plants for a total of 9.7 MGD.

- Four years ago, Austin began offering rebates of up to \$500 for residential rainwater collection systems. Some 4,000 homeowners have now installed rain barrels, and 29 homes inside the city limits have installed larger rainwater collection systems, with many more planned. The residential systems save 200,000 gallons a day. "This isn't a lot of water – we use 135 million gallons a day here," says Hoffman. "But the way we look at it, we need a whole lot of 1-2% solutions to avoid having serious water problems in the future."

Roll Out the Barrels

According to the American Rainwater Collection Systems Association (ARCSA), more than 250,000 rainwater collection systems exist today in the United States. While most of those are on farms, urban residential rain barrel programs like Austin's are growing in popularity – and not just in the dryer parts of the continent. Planners appreciate rain barrel programs as much for their educational value as for the water-storage benefits. Says Dick Lilly of Seattle Public Utilities, "Customers want to be able to do their part. The hope is we'll see people begin to change their watering habits, that they'll use water more judiciously." Seattle hopes to have 1% of its single-family accounts using its 50 and 60 gallon rain barrels in the near future.

On a slightly bigger scale, Seattle's new City Hall will have a massive 270,000 gallon cistern built into its basement. "This system will lead to nearly zero runoff for one city block," says Paul Fleming, also with Seattle

Public Utilities. The water will be used to flush toilets in the building and for landscape irrigation. A similar system was installed in the county's Department of Natural Resources building a few blocks away.

Seattle also will soon launch a pilot project to test the effectiveness of alternative methods for handling peak storm flows that severely impact drainage and sewer systems. A 24-home pilot project will include the installation of rainwater harvesting systems, with cisterns ranging in size from 300 to 1,200 gallons, at the participants' homes. The cisterns will capture a portion of the rain that typically runs off a parcel during a storm, which will then be used for non-potable uses such as irrigation or flushing toilets. Not only will the retrofitted houses stop flushing expensive clean drinking water down the toilet, but such programs can help postpone the need to expand costly sewage facilities.

"Our preliminary economic models show that rainwater options like this could cost half as much as new centralized storage approaches. They can help us resolve situations where sewers overflow into water bodies when peak storm flows overwhelm the system," says Steve Moddemeyer, with Seattle Public Utilities. But distributed systems such as these shift investment from traditional public works to dispersed facilities, raising new issues. "To be effective, this program requires high levels of public participation, which poses an opportunity as well as a potential stumbling block," notes Moddemeyer. "This is more of a social marketing challenge than an engineering one."

Seattle, like LA's TreePeople, is working to encourage traditional city water agencies form new alliances and find new ways of solving water problems together. "We have an opportunity to integrate the water cycle across our utilities, rather than segmenting it," says Paul Fleming.

Water-Wiser in the Desert

Dry Albuquerque, New Mexico has undergone an awakening in recent years. For years its residents acted like the city had access to virtually limitless water, planting thirsty gardens and using more water per capita than any of its desert Southwest neighbors (residents used on average about 250 gallons per person per day through the mid-1990s, versus 155 gallons for residents of Tucson, Arizona). But Albuquerque receives only seven inches of rain a year, and has very high rates of evaporation during hot, windy months. And in 1993, it was discovered that the large aquifer under the city was not nearly as large

as planners had thought – it had declined 180 feet since 1960.

The city is now in full conservation mode, and has developed a number of programs to reduce use, and reuse water. Its goal is to cut water use by at least 30% by 2005. Rainwater collection will be part of the picture; subsidized rain barrels in four sizes (up to 360 gallons) will be available for landscape use this spring. A detailed booklet on installing more elaborate rainwater systems is available from the city.

Albuquerque has an extensive program of rebates and programs to reduce demand on its limited water supply. Incentives are available for installing low-flow toilets, washing machines, and water-conserving irrigation systems. Another program, "No Spray in the Day," restricts the use of spray irrigation systems to evenings and mornings (drip systems can be used any time). Repeat offenders can be fined. "We can save up to a billion gallons per summer by not watering in the hottest, windiest part of the day," a program brochure notes.

The city has also teamed up with industrial partners to treat and reuse industrial wastewater, to be used to irrigate city parks. It is the first public-private industrial wastewater recycling effort in the US.

The Forecast

These are not the only hopeful examples to be found: a number of cities in the US now approach water issues more creatively, and more holistically. For those who tend to see the glass as "half empty," however, there appear to be many things that could derail the watershed-protection train: the most obvious examples include the budget crisis affecting so many local and state governments today, the growing trend to privatize water supply systems in the US, and the Bush administration's continued push for the elimination of clean water protections.

But for those who believe the nation's water glass is half full and getting fuller, there is much to celebrate in this growing trend. Says TreePeople's Lipkis, "There's lots of money in this country to be spent on new water supply, flood control, storm-water quality, wastewater, and even on seemingly unrelated projects like schoolyard repair. All these things can support each other – we can get so much more 'bang for the buck'. Everyone says they want more efficient government these days. Having agencies cooperate in these ways is an important way to do that." ■

The author grew up in the Los Angeles River watershed.

Day of Action continued from page 12

changes that Brazil needs, without favoring those companies who only want to exploit our natural wealth and the Brazilian people."

Elsewhere in Latin America and Mesoamerica, citizens also made their voices heard. Asprociq, an organization of Colombian fishers and indigenous people, protested the devastating ecological and social impacts of the Urrá Dam on the Sinu River, and called for the dam to be dismantled. Demonstrators also memorialized Kimy Perina Domico, the Embera-Katio indigenous organizer who was killed two years ago while working to oppose the Urrá dam.

In Mexico, Costa Rica, El Salvador, Honduras and Guatemala, those opposed to the proposed Plan Puebla Panama (PPP), which would develop southern Mexico and neighboring nations with major infrastructure projects such as dams, demonstrated in places that would be affected by PPP projects that would damage natural resources without delivering benefits to local people. On the Usumacinta River a team of activists,

Lands Alliance of Washington state circulated a sign-on letter against Chile's Alumysa Project. Canadian giant Noranda proposes to build a huge aluminum smelter in the heart of Chile's temperate evergreen rainforest. The \$2.75 billion smelter would use ore shipped in from Australia, Jamaica and Brazil, drown 10,200 hectares of pristine forest, rivers and lakes with six dams, then ship the finished product to its markets in North America.

River Celebrations

With revelers wearing Mardi Gras beads, bearing protest signs and dancing through the streets in high spirits, the Sierra foothills town of Auburn resembled New Orleans' French Quarter for a short time. But it wasn't a Mardi Gras celebration. It was a funeral for the long-proposed, and repeatedly defeated, Auburn dam.

Participants opposed to the Auburn dam wound their way through the mountain town in a festive New Orleans-style funeral procession, complete with coffins to represent five "dead" dams removed from US rivers in 2002.

Nearly 150 protesters gathered at the Auburn Dam Overlook to rally before the parade. Supporters passed out fish-shaped bead necklaces as speakers motivated the crowd with inspirational messages and updates on other protests around the world. IRN and the Sacramento-based Friends of the River sponsored the event. Other California river groups in atten-

dance included Restore Hetch Hetchy and Protect American River Canyon.

"People around the world are celebrating the work to oppose dams that are outmoded, dangerous and destructive," said Betsy Reifsnieder, Executive Director of Friends of the River. "So often on environmental issues we're dour. To be able to sing, dance, march and dress up in Mardi Gras clothes is fun. The energy here is great."

Daniel Ribeiro of Mozambique, currently interning at International Rivers Network, offered the crowd an international perspective. "We need awareness," he said. "Then at least we'll know what risks we're accepting with projects like this. This march is a good way to get people to think about those conflicts." Ribeiro's own group in Mozambique, Livaningo, marked the day of action by post-

ing dam campaign pamphlets about Mphanda Nkuwa Dam (proposed for the Zambezi River) at traffic intersections throughout that nation's capital city.

Elsewhere in the US, activists celebrated rivers and educated the public about the threats to them. Utah-based Living Rivers kicked off a new campaign to bring Mill Creek in Utah back to life. The festivities included a noon rally and picnic on the lawn at the County Courthouse with music and information about the importance of restoring nearby Mill Creek. The group also presented a set of recommendations for the County Council for improving the creek's health.

Education about Rivers & Dams

Educational seminars were held in a number of communities affected by dams. In Thailand, to honor the day of action, Assembly of the Poor and Mae Moon Man Yuen villagers, and Southeast Asia Rivers Network (SEARIN) hosted many activities from March 8-17. The 10-day event included a variety of workshops and seminars sponsored by different organizations, including a seminar by Assembly of the Poor on the case of the Pak Mun Dam. Participants explored the lessons of large-scale development projects, joined a public panel on the people's movement in Thailand and went on a study tour on the human and ecological impacts in the area affected by Pak Mun Dam.

In India, the group Citizens Concern for Dams and Development held a seminar and protest about a proposed large dam at Tipaimukh. The signing of a Memorandum of Understanding between the Manipur government and the North Eastern Electric Power Corporation Ltd. early in January has paved the way for the project to proceed. The indigenous people of Manipur have consistently opposed this dam, particularly those in the districts where the proposed dam and associated facilities would have the greatest impact. The day's events included a forum for public discussion, speakers and workshops.

Educational events were also held in New York and Texas. Students at Ossining High School in New York displayed educational posters and research projects about dams and related causes to honor the Day of Action. The Association for India's Development in Austin, Texas held an awareness day at the University of Texas in Austin. Lectures and a teach-in on water privatization issues commemorated the day. ■

For more information about the Day of Action, see www.irn.org/dayofaction.



Photo: K. Bertilson/Sierra Digital Services

Protestors in California urged a final end for the Auburn Dam.

filmmakers, doctors, and nurses took a six-day trip down the Usumacinta River, on the border between the Mexican state of Chiapas and Guatemala, to celebrate the Day of Action. The Usumacinta, one of the last major free-flowing rivers in Central America, faces its third major dam threat in 20 years.

In Guatemala, 25 groups, including the Peten Front Against Dams, demonstrated their opposition to dam projects throughout the region by hanging banners, marching through the streets and blockading traffic. Thirty-six communities of the Palenque region of Mexico organized actions that included marches in the streets with people chanting and hold signs saying "no dams" to show their support for the Day of Action.

Latin American rivers received support from outside the region as well, as American