Dams

Struggles against the modern dinosaurs

World Rainforest Movement

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CONTENTS

ABOUT THIS BOOK

This book gathers a selection of articles published in the monthly electronic bulletin of the World Rainforest Movement (WRM), addressing the issue of the impacts of large dams on forests and local communities, as well as the struggles developed at the local and global levels against them.

The level of detail and analysis in the articles varies greatly, as a consequence of the nature of the bulletin, which is intended to serve as a tool, both for individuals and organizations acting on a local level and for those working on an international scale. However we have included most of the articles, as we consider that in some way they can all serve to generate resistance and solidarity movements regarding a subject such as this, of vital importance for the survival of local communities that live in the areas where large dams are planned or already exist.

Most of the articles are the result of a collaborative effort between the WRM bulletin's editorial team and people and organizations working at the local and global level against large dams. The numerous sources of information on which the articles were based are detailed – by article – at the end of this book. The articles have been organized in different sections and within each section by date, in chronological order of publication, except for the section Dams: An Overview, where the articles appear by order of relevance.

Responsibility for this publication is shared between the WRM editorial team and the numerous individuals and organisations who contributed articles or relevant information for the preparation of articles. Errors that may have been made are the exclusive responsibility of WRM.

But what matters most is that beyond the authorship of the different articles, the true protagonists of this work are the numerous local communities in the tropics and subtropics who protect their forests and livelihoods and firmly resist the massive destruction caused by large dams. The articles attempt to reflect the struggles of these protagonists, with the central aim of supporting them. To all of them, we pay our most sincere homage.

INTRODUCTION

Large hydroelectric dams: dinosaurs on their way out

The story of large hydroelectric dams is the story of the violation of basic rights of the people who live in the area flooded for each of the tens of thousands of dams that today obstruct innumerable watercourses throughout the planet. It is also the story of the disappearance of many ecosystems and the dramatic modification of others. Millions of hectares of forests have been covered by reservoirs, thus affecting the local fauna and flora and depriving the local inhabitants of their lands and means of livelihood.

However, the impact of dams is not just limited to the area of their reservoirs, but goes much beyond it. On the one hand because the changes generated by the dam on the water regime cause the disappearance of aquatic fauna – that cannot overcome the enormous barrier implied by the reservoir in itself – generating serious impacts on other species linked to the same food chain, which also disappear or whose populations are considerably reduced. The entire human population depending on these species along the river find their possibility of survival seriously affected. Dams also have an impact on other forest areas because of the forced migration of the affected population, which is usually "resettled" in other forest areas. Deprived of their traditional means of living, these populations are obliged to fell forest areas to use them for their agricultural crops. Therefore, the loss of forest is doubled.

None of this is a recent discovery, but has been known for many years. So much so, that in some countries of the North this type of dam is no longer built and some have even started to be dismantled to allow the normal river flow to be restored.

To these considerations is added the detailed study carried out by the World Commission on Dams, the results of which were published in the year 2000. Among other things, it states that large dams "have fragmented and transformed the world's rivers, while global estimates suggest that 40-80 million people have been displaced by reservoirs. As the basis for decision-making has become more open, inclusive and transparent in many countries, the decision to build a large dam has been increasingly contested, to the point where the future of large dam-building in many countries is in question."

However, ignoring the experience of the accumulated impacts and pain, year after year new projects for dams are submitted in many countries of the world and in particular in the South. Has nothing been learnt? Are the technicians ignorant? Not at all. The answer is very simple: they continue to be submitted because large dams mean big business for big companies (and for their local partners). The only reason that prevents some of them from being implemented or not even submitted is the increasing organized opposition. If this were not the case, there would certainly be a lot more of them.

It is therefore important to know who benefits and how they achieve their objectives. Given the enormous size of this type of dam, substantial investment is required that is usually beyond the scope of companies and national States in the South. Thus, those who finally have access to contracts for studies, construction and implementation of these large dams are the consortia of major transnational companies. Among them are the consulting and construction companies and the suppliers of machinery for dams, in their great majority located in the North (Austria, Belgium, Canada, Finland, France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States, among others).

However, the profit-making is not only based on participation in the construction of the dam, but also in the different kinds of support that the companies receive from the governments of their own countries or from multilateral financial agencies. This is where the bilateral agencies play an important role. While sheltering behind the label of agencies “assisting” the countries of the South, they are in fact assisting, with their contributions of money, the companies involved in the dams. A similar role is played by Northern export-credit agencies, which provide soft loans for the export of dam-related machinery. In turn, the World Bank, just like the multilateral regional banks (African, Asian and Inter-American Development Banks) has been and continues to be an essential body in the funding of large hydroelectric dams.

In all this, the national governments of the countries where the dams are constructed also play an important role. The State acts as a project promoter, contributing with the necessary technical, economic and social arguments to achieve majority support from the population that is not affected by the dam (in particular the urban population). Government officials publicize the allegedly “clean and renewable” nature of this type of energy. They argue

that the country's population needs electric energy from dams to improve their quality of life. They even bring in the issue of climate change.

Of course nothing is said about the large economic benefits that the local companies linked to the government receive through their association with the transnational actors involved. No mention is made either of the environmental impacts that end up making this energy dirty and non-renewable and that contribute to climate change through the release of large amounts of carbon dioxide and methane gas, two of the main greenhouse gases. Still less do they mention that the energy produced rarely reaches the homes of the poor and in fact serves to ensure transnational companies have cheap and abundant energy available in order that their investments are profitable.

In turn, large dams are presented as the only possible option. The alternatives are made invisible and therefore are unfeasible. Energy from the sun, the wind or from biomass does not even enter the equation and still less do issues such as decentralization of production and distribution of energy or its efficient use and conservation. The alternative becomes hydroelectric energy or nothing.

However, the State plays another important role in making large dams possible: to repress local opposition any time it considers it necessary. In this, it appeals to various mechanisms. On the one hand it seeks to isolate the opposition from the rest of the national population, contrasting general interest with the interest of local populations. Given that generally the areas to be flooded are inhabited by indigenous peoples or by poor peasants, these are described as "backwards" and "opposed to progress," in many cases exploiting and exacerbating the racist feelings of the country's majority population. Furthermore, governments often resort to totally manipulated "consultation" processes, with the objective of dividing the affected communities and obtaining some kind of "support" for the undertaking. However, finally they resort, openly or underhandedly, to their capacity for physical repression to oblige the local populations to abandon the area. The State then becomes the visible face of the violation of the local populations' human rights, but it is important to point out that this responsibility is shared by all the actors mentioned earlier on, who are concealed behind it.

The great paradox is that large hydroelectric dams are actually the symbol of an already outdated paradigm of the domination of nature by human beings. At one time they were the object of admiration and the bigger the dam,

the greater the pride of the country hosting it. Those who opposed them were classed as old-fashioned and opposed to progress, which was used as a justification for ignoring their rights.

However, over ten years ago a fundamental change took place, when at the Earth Summit meeting in 1992 the governments formally adopted a new paradigm of sustainable development, highlighting the importance of environmental conservation and social equity. In this context, large dams are like a dinosaur which is becoming extinct, but which refuse to disappear completely. How much more suffering will be imposed on the local people before this happens? How many more species and environments will have to disappear before governments – of the North and the South – decide once and for all to abandon an unsustainable development model of which this type of dams is a necessity?

At this point, it is very clear that the dams will not disappear on their own, but because of organized opposition to them, from local level to national and international level. The first step is obviously to generate awareness of the problem. Much has already been done in this respect – thanks to the untiring work of many people and organizations – but it is still not enough. This book hopes to join in this effort through the presentation of the many cases that we have documented on struggles and concrete examples of the impact of dams. We hope that it will serve to make more people understand and more people join in the struggle against them. Only then will the day come when large dams finally receive the death certificate they so deserve.

Ricardo Carrere
WRM International Coordinator

WRM BULLETIN EDITORIAL ON DAMS

Dams, forests and people

When asked to name different causes of deforestation, few people will mention hydroelectric dams as being one of them. Even fewer will include them as a cause of human rights violations. However, dams constitute a major direct and indirect cause of forest loss and most of them have resulted in widespread human rights abuses.

This lack of awareness can be explained by the fact that for many years large hydroelectric dams have been portrayed as synonymous with development. Another reason can be that most users of hydro-electricity live far away from the impacted areas and that the sites selected for dam building have been often those inhabited by indigenous peoples, ethnic minorities and poor communities having little capacity of being heard by the wider national community.

The fact is that more than 40,000 large dams – those that measure more than 15 metres in height – are currently obstructing the world's rivers, whose reservoirs cover more than 400,000 square kilometres of land – an area larger than the combined surfaces of the United Kingdom, Belgium, The Netherlands and Austria.

These reservoirs have inundated millions of hectares of forests – particularly in the tropics – many of which were not even logged and trees were left to slowly rot. They have also resulted in deforestation elsewhere, as farmers displaced by the dams have had to clear forests in other areas in order to grow their crops and build their homes. Additionally, dams imply road building, thus allowing access to previously remote areas by loggers and "developers", resulting in further deforestation processes.

However, the dams' effects have included much more than forest loss and the major environmental changes have impacted on local people, at both the dam site and in the entire river basin. Not only are the best agricultural soils flooded by the reservoir, but major changes occur in the environment, where the river's flora and fauna begins to disappear, with strong impacts on people dependent on those resources. At the same time, dams imply a number of health hazards, starting with diseases introduced by the thousands of workers that are brought in to build the dam (including AIDS, syphilis, tuberculosis, measles and others) and ending with diseases related to the reservoir itself (malaria, schistosomiasis, river blindness, etc.).

In far too many cases, dam-building has resulted in widespread human rights violations. As most of us would, local peoples have persistently resisted the destruction of their homelands and their forced "resettlement." As a result, they have had to face different types of repression, ranging from physical and legal threats to mass murders, such as in the case of the Chixoy dam in Guatemala (see article "A dam and the massacre of 400 people").

But resistance, consciousness and solidarity have grown. Local people have increasingly been able to organize themselves and to establish local, national and international alliances with other concerned organizations. Major examples are the Narmada Bachao Andolan movement in India, the Bio Bio Action Group in Chile, the Coalition of Concerned NGOs on Bakun in Malaysia, the People Affected by Dams movement in Brazil among many others. It has now become possible to stop large hydro dams. They are definitely not a symbol of development but one of economic and political power resulting in social and environmental degradation. (WRM Bulletin Nº 42, January 2001).

DAMS: AN OVERVIEW

Hydroelectric dams are no solution to climate change

The international and national dam lobbyists have been fast to adapt their discourse to the changing world situation. Given the widespread concern over climate change related to greenhouse gas emissions, dam promoters are now stressing that hydroelectricity is a clean source of energy, thus being the best candidate to substitute fossil fuel-based energy sources. But: is it really clean?

The existing research shows that hydropower is not only socially and environmentally destructive, but that it can also make a significant contribution to global warming, particularly in the tropics.

Through the processes of growth and decay, soils, forests and wetlands continuously consume and emit large amounts of carbon dioxide and methane, the two most important greenhouse gases. When those ecosystems are flooded by the dams' reservoirs, the pattern of fluxes of CO_2 and methane with the atmosphere is totally altered. Plants and soils decompose when flooded and will eventually release almost all their stored carbon. Permanently flooding tropical wetlands will tend to increase their methane emissions as well as making them a net source of CO_2.

Researcher Philip Fearnside carried out studies in 1995 on two dams in Brazil: Balbina and Tucuruí. He calculated their impact on global warming by assessing the amount of forest they flooded and the rate at which vege-

tation would decay at different depths of their reservoirs. His findings were that in 1990 (6 years after Tucuruí started to fill and 3 years after the gates were closed at Balbina), the Tucuruí reservoir had emitted 9,450,000 tonnes of CO_2 and 90,000 tons of methane, while Balbina had emitted 23,750,000 tonnes of CO_2 and 140,000 tons of methane. His conclusion was that Tucuruí had 60 per cent as much impact on global warming as a coal-fired plant generating the same amount of electricity, while Balbina had 26 times more impact on global warming than the emissions from an equivalent coal-fired power station.

The above should suffice to show that hydropower is not clean regarding climate change. But there's even more. A comprehensive accounting of a dam's contribution to global warming should also include the emissions from the fossil fuels used during dam construction, those from the production of the cement, steel and other materials used in the dam, as well as the changes in greenhouse gas fluxes due to the land use and other changes which the dam encourages, such as deforestation, the conversion of floodplain wetlands to intensive agriculture, the adoption of irrigation on once rainfed lands, and the increased use of fossil-fuel-based artificial fertilizers.

In sum, large hydroelectric dams are not only no solution to climate change but, on the contrary, are part of the problem. (WRM Bulletin Nº 42, January 2001).

New World Bank Resettlement Policy Is Flawed

The World Bank has been drafting a new resettlement policy for the past three years. After a long period of external consultation, a revised policy has now finally been submitted to the Bank's 'Committee on Development Effectiveness', but it was not accepted and is now to be reconsidered internally. A leaked copy of the draft policy shows that it retains serious deficiencies:

- it makes less secure provisions for people who lack recognised rights to land than the previous policy
- it falls far below the proposed standards of the World Commission on Dams
- it makes a questionable distinction between voluntary and involuntary resettlement
- it does not require improvements to the livelihoods or standards of living of those displaced

NGOs are also indignant that the Bank has gone back on its promises to make public a 'matrix' which was to set out the reasons why the Bank has rejected civil society recommendations for strengthening the policy. The policy also has very serious implications for forest-dwelling peoples, particularly those affected by protected areas.

The draft policy proposes a different process for those people whose livelihoods are adversely impacted by World Bank projects in conservation areas (para 3 b). In such cases, the communities are not to be consulted until project implementation instead of during the project preparation phase (para 7). Likewise provisions for those who are involuntary resettled (under para 3 a), such as being informed about their options and rights, being consulted about alternatives, provided with prompt compensation, ensured the timely sharing of information, infrastructural support, provisions of alternative livelihoods, and (where possible) replacement land for land lost, are *not* assured for those (under para 3b) whose livelihoods are restricted by protected areas (paras. 6, 10 and 12). Instead these people are only offered assurances that the borrower, without any obligation to consult with the affected peoples, will provide a 'draft process framework' during project appraisal and during implementation will provide a plan, 'acceptable to the Bank' (but not necessarily to the peoples themselves) (para 30) aimed at 'at least' restoring their livelihoods 'in real terms' (whatever that means) (para 7). Whereas those involuntarily resettled by other development schemes are assured that the borrower is obliged to develop one of three kinds of resettlement plan or framework, the details of which are set out in an Annex on 'Involuntary Resettlement Instruments', no such details are provided for those for whom the borrower only has to develop a 'draft process framework'.

This kind of discrimination is unacceptable on both moral and legal grounds. Experience shows that the distinction that the policy seeks to draw between forced displacement and involuntarily 'restricted access' is both unfair and unfounded. Detailed studies of peoples affected by protected areas show how imposed restrictions on their livelihoods and effective loss of their lands may inevitably force people to relocate because their lives become inviable. Frequently, peoples whose lands are designated as protected areas are indigenous peoples, ethnic minorities, pastoral 'nomads' and marginalised forest-dwelling groups, whose traditional extensive systems of land use depend on their mobility over, and access to, large areas. Very often these peoples' rights to their territories are not recognised in national laws. These peoples deserve the same consideration and concern as those whose lands and livelihoods are expropriated by any other imposed developments.

It is patently evident that the artificial distinction being drawn by the World Bank in paragraphs 3a) and 3b) is intended to 'panel proof' the World Bank against further complaints to the Inspection Panel such as that made about the 'Ecodevelopment' project in India. These kinds of manipulations benefit no one in the long term and will do lasting harm to the credibility of the World Bank. (By: Marcus Colchester, WRM Bulletin Nº 43, February 2001).

Skanska pulls out of dam-building . . . or does it?

The environment department at Skanska, one of the world's largest construction firms, has announced that it is to pull out of dam-building. On 4 February 2003, Skanska's vice President Sustainability, Axel Wenblad revealed that after a strategic review at the company, "We will not be involved in new hydropower projects in the future."

Wenblad said that the review was carried out at the request of the company's new CEO, Stuart Graham. In January, a Skanska press release stated that during 2003 to 2004 Skanska would, "Exit Business Unit Skanska International Projects, a project export ... The nine on-going projects will be completed–but no new business will be entered."

However, Skanska's Press Officer Peter Gimbe denied that this means Skanska will pull out of dam-building. "No, that isn't true," he said. "The decision is really that we will only work from home markets, we will only work with projects in markets where we have a local presence. For example, in South America we have a local presence in several countries. Of course we can take part in building hydropower plants if there is any project coming up in the countries we are working in. No decision has been made to exit the hydropower market."

On 3 February 2003, the day before Wenblad made his statement, Business News Americas reported that Skanska is in negotiations over the price and terms of an engineering, procurement and construction contract for the 270 MW La Higuera dam in Chile. Skanska's international projects manager Lars-Erik Alm said, "This is a good project because it's a run-of-the-river project with minimum environmental impact, and those are the kind of plants we prefer to pursue."

Although Skanska may prefer to pursue projects with "minimal environmental impact", the company has also been involved in several highly controver-

sial dam projects. For example, in 1993, Skanska started construction of the Urra 1 dam in Colombia. Skanska's share of the project was 80 per cent and Skanska's contract was worth US$320 million. More than 7,000 hectares of old-growth forest was flooded and 12,000 people, including members of the Embera Katio indigenous group, were evicted to make way for the dam's reservoir.

In 1996, the Embera Katio launched a resistance campaign against the dam, occupying the Swedish embassy in Bogota. Since then, at least four Embera-Katio have been killed for leading opposition to the dam. In June 2001, Kimy Pernia Domico was forced at gunpoint onto a motorcycle outside his people's headquarters. He is still missing.

In Malaysia, Skanska was a specialist contractor on the 600 MW Pergau dam which was built with £234 million of British overseas aid. Documentary evidence subsequently revealed that the aid package was linked in writing to a reciprocal arms deal whereby the Malaysian government agreed to buy over £1,000 million worth of British military equipment in return for the UK funding Pergau. A judicial review brought by a British NGO, the World Development Movement, against the Foreign Office led to a High Court ruling that aid for Pergau was in violation of the 1966 Overseas Aid Act, which forbids British aid money being used for the purchase of arms.

According to project officials, the Pergau dam can only be used at peak energy hours because the volume of water allows the dam to operate for only a few hours. Even the World Bank criticised the project, arguing that it would be more cost effective to build gas fired power stations.

In Sri Lanka, Skanska built the 204 MW Kotmale dam, part of the massive Mahaweli Project. Sweden's aid agency, SIDA, handed out grants totalling SEK1.5 billion for Kotmale. The contract was awarded without any competitive bidding and construction began in 1979. However, after limestone caverns were discovered beneath the dam, the entire project had to be moved 200 metres downstream. Construction engineers admitted that geological surveys had revealed the original site to be flawed but that "no-one had coordinated the results or drawn the appropriate conclusions". After the dam was commissioned, it was shut-down for 18 months because of a leak in the high-pressure shaft and its associated tunnel. Skanska won another contract to repair the leak. Even after this repair, only one of the three turbines installed in the power house could be used as the reservoir did not hold as much water as had been predicted.

The dam required the relocation of 15,000 people and flooded 1,410 acres of paddy fields. A further 905 families were affected by landslides which were a result of the project.

In May 1997, the Sweden's Sida awarded a US$3.2 million contract to Skanska to provide training in tunnel-building for hydropower projects in Vietnam. The contract included on-the-job training at the 720 MW Yali dam construction site. The Yali dam resulted in serious problems for people evicted to make way for the reservoir and for communities living downstream of the dam in both Vietnam and Cambodia. Tens of thousands of villagers living downstream of Yali have been affected by the changes in water flow and the poor water quality in the river since the dam has been built.

One of Skanska International's "ongoing projects" is the Bujagali dam in Uganda. In November 2000, Anders Bergfors told Swedish newspaper Svenska Dagblat that Skanska's role in the construction of the dam will be "traditional dam construction work".

Until August 2002, Skanska International and Veidekke (Norway) were part of the Bujagali consortium hoping to build the 200 MW Bujagali dam in Uganda. Veidekke withdrew following allegations that Veidekke's UK-based subsidiary, Noricil, had bribed Richard Kaijuka, Uganda's then Executive Director at the World Bank.

The Bujagali dam would submerge highly productive agricultural land; destroy the Bujagali Falls; possibly lead to the extinction of rare fish in the Nile; cause thousand of people to lose their land and access to river resources; and lead to significant increases in Ugandans' electricity bills, 95% of whom are in any case not connected to the national grid.

In July 2001, Ugandan citizens and NGOs filed a complaint with the World Bank's Inspection Panel about the project. The Inspection Panel's report found the environmental studies on the project to be insufficient or lacking, the resettlement action plan to be incomplete and the community development action plan to be inadequate. The report found the economic and financial analysis of the project to be seriously deficient and that the project was in breach of several of the World Bank's Operational Policies.

Despite the corruption allegations, deficient financial analysis and insufficient environmental studies, Skanska remains involved in the Bujagali project.

Skanska should do what Wenblad says it already has done: pull out of dam-building, now. (By: Chris Lang, WRM Bulletin Nº 67, February 2003).

International Day of Action Against Dams and for Rivers, Water and Life

Here follows a Call to Action by the International Rivers Network:

"We invite you to participate in the 6th Annual International Day of Action Against Dams and for Rivers, Water and Life on March 14th, 2003. This is a time to act in solidarity to celebrate our rivers, protest destructive development, and enjoy the successes of last year.

Join the movement for healthy rivers and communities by planning an event or attending an action near you. From campaigning for thriving fisheries and clean water to taking down bad dams, we continue to push our causes forward. Join us on March 14th to show the world that we are standing together in the fight for living rivers and the rights of communities over their natural resources.

We have many successes to celebrate from 2002. In spite of the Bush administration's opposition to dam removal, a record 63 US dams were scheduled for decommissioning in 2002. After years of negotiations, parties agreed to remove two dams on the Little Sandy River in Oregon. This will create a new recreation and wildlife area, protect remnants of old-growth forest, and restore fish habitat and scenic deep river gorges.

For the first time an operating dam in Japan has been slated for removal. Citizens have long complained the nation's rivers are vastly over-dammed, and a decision to remove the Arase Dam on the Kumagawa River is the first crack in the usual cover-it-in-concrete waterway policy.

Activists working to save the spectacular Bujagali Falls on Uganda's Victoria Nile scored a victory by halting the controversial 200MW Bujagali Dam. In June 2002, the World Bank's Inspection Panel found that the Bujagali project violated five Bank operational policies. Due to allegations of corruption, all funding for the dam was suspended in July. Clearly, the momentum to secure communities' rights over water and their natural resources is growing. The International Civil Society Water Statement from the World Summit on Sustainable Development declared, "Water is life. As a result the right to water is not negotiable." The UN stated in 2002 that,

"The human right to water is indispensable for leading a healthy life in human dignity. It is a pre-requisite to the realization of all other human rights." International bodies are finally recognizing this right that civil society has been demanding for years.

We are excited about using this Day of Action to remind the world that we are not only fighting against dams, but for healthy rivers and people. We can all strengthen the movement through demonstrations and protests, information sharing, discussions and education. Let's stand together in solidarity for our rivers, communities and rights on March 14th! "

The Day of Action was inspired by participants at the First International Meeting of People Affected by Dams held in Curitiba, Brazil in 1997. They declared, "We are strong, diverse, and united and our cause is just. To symbolize our growing unity, we declare that March 14th – the Brazilian Day of Struggles Against Dams – will from now on become the International Day of Action Against Dams and for Rivers, Water and Life." (WRM Bulletin Nº 67, February 2003).

Urgent action against the World Bank's proposed resettlement policy!

The World Bank forwarded in 2001 its revised draft resettlement policy to the full Board of Executive Directors for discussion and approval. Starting August 20th, Executive Directors will be returning to their offices from a two week recess, and it is crucial to capture their attention immediately about the resettlement policy. We believe that it will be placed on their agenda shortly after the recess.

Thanks to the strong public mobilization on earlier drafts of this policy, the Bank has responded to some concerns by defining more terms and removing some offensive language of its previous document.

In this "revised" policy there are still many fundamental problems that will violate the rights of indigenous peoples and other vulnerable groups. Most alarming is the fact that the proposed policy will still permit the forcible relocation of indigenous peoples even where it may result in "significant adverse impacts on their identity and cultural survival". A complete study of these two key substantive areas – indigenous peoples and "voluntary" resettlement – was carried out by the Forest Peoples Programme (FPP) and the Center for International Environmental Law (CIEL).

There is one last chance to demand substantive changes in the resettlement policy before it is approved. The Executive Directors of the Bank in each country should be contacted, and concerns about this policy should be expressed. It is urgent to persuade them to make amendments to the policy and to adopt a clear presumption against any forced relocation of indigenous peoples. (WRM Bulletin Nº 49, August 2001).

International forum against dams

From March 21 to 23, men and women from 98 organizations and communities in 21 countries of the world gathered in Guatemala to express the general concern caused by the plans of construction of dams for various purposes in different regions.

During the meeting, called "Foro Mesoamericano Por la Vida" (Meso-American Forum For Life) the participants shared information and experiences, and analized the negative environmental, cultural and socio-economic impacts already caused by these projects and the potential damages they entail.

In their final statement, the participants agreed to oppose the construction of dams, since these alter and deviate the natural course of rivers, resulting in flooding and affecting and displacing people from their communities around their influence area; they destroy sacred and historical places and kill ecosystems and their bio-diversity. Furthermore, dam construction represents a flagrant violation of peoples' right to self-determination, affecting the heritage and cosmovision of the indigenous peoples. The statement also identifies those institutions and people responsible for the projects and establishes several claims of the populations affected. (WRM Bulletin Nº 57, April 2002).

DAMS: THE STRUGGLES

AFRICA

Ghana: What's hidden behind the Bui Dam Project?

Dams constitute a major direct and indirect cause of nature destruction and disruption of local population's lives worldwide. Even though international concern on this issue is on the rise, national governments, together with

transnational consulting and construction firms and with the aid of international financial institutions continue going ahead with this kind of megaprojects. They are usually surrounded by corruption and almost always result in widespread human rights violations against local communities.

The African continent is not an exception to the rule. The same as in the cases of Kenya, Namibia and Uganda, dam megaprojects in Ghana have caused and are about to provoke severe impacts on people and the environment. In 1965, 80,000 farmers of the Volta River valley were forced to move from their lands because of the construction of the Akosombo Hydropower Dam, which flooded more land than any other dam in the world: 8,500 km2, almost 4% of the entire area of the country. The dam also set in motion waterborne diseases, especially bilharzia and malaria. Later on, between 1978 and 1981, the Kpong Dam in Ghana displaced 6,000 people and despite assurances that the mistakes of Akosombo would not be repeated, the resettlement programme actually caused problems worse than those of Akosombo.

Nevertheless, the Ghanian government pretends to ignore reality. Presenting the country's annual budget to Parliament on March 9, 2001, the country's Finance Minister, Mr. Yaw Safo-Marfo reiterated his government's commitment to construct a new dam on the Black Volta River, at the present site of the Bui National Park, "to further augment power generation capacity in the country and in line with the pledge contained in the government's agenda for positive change". The 400Mw Bui Dam hydroelectric project is scheduled to start producing hydroelectric energy in 2006. The construction of the dam by a consortium led by Kellogg Brown and Root of the United Kingdom-KBR, (subsidiary of Halliburton, which was headed by US vice-president Dick Cheney from 1995 to 2000) is supposed to start in 2002 at a cost of US$ 900 million. The 660 km2 reservoir would flood all the riverine forests of the Bui National Park, considered the last pristine wilderness in the entire Volta System. The park is home to the largest of two groups of hippos left in Ghana, and of a variety of primates, leopards, ungulates, lizards, butterflies, birds, fish, fruitbat, rodent, dragonflies and other fauna.

A recent decision by the country's authorities concerning this polemic issue has given place to harsh critics: the British zoologist Daniel Bennett, who had been conducting biological research in the Park since 1996, has been banned from it. Nick Ankudey, director of the Wildlife Division of Ghana's Forestry Commission, said that the area is now politically sensitive and that

his studies are no longer in the national interest. His decision was backed by the Ministry of Lands, Forestry and Mining. The argument for such an arbitrary decision is that the country's authorities had found "unacceptable" the conclusions that Dr. Bennett published in his web site (see http://hippo.50megs.com). The British zoologist had stated that were the dam built, the rich flora and fauna of the Park would disappear, and the feeding grounds of the hippos would be destroyed, thus forcing the hungry hippos to move north of the park into inhabited areas. In such situation, Dr. Bennett stated that there might be "no choice but to destroy the vast majority of them in the interests of people's safety."

"The intention seems to be to ensure that nothing challenges the results of the recently commissioned environmental impact assessment of the Bui Dam Project, to be conducted by the Canadian company ACRES under contract from the Volta River Authority. An assessment paid for by the organization constructing the dam does not constitute an acceptable level of research if the area is to be destroyed," said Bennett.

Members of the local and international environmental community reacted denouncing the Wildlife Division's decision as "arbitrary, capricious, excessive and unnecessary". For them, the "decision is utterly illogical and an insult to democracy and justice". In the same line Mr. Joshua Awuku Apau of the Green Earth Organisation in Ghana said the decision could taint the image of the country.

Many questions remain to be answered. Why have independent scientific activities regarding the conservation of a wilderness area to be affected by a dam megaproject been banned? Why has this decision been taken just before ACRES, a firm contracted by the dam developers presents an Environmental Impact Assessment of the project? Is this not contradictory with the declared intention of the Ghanaian government to combine development with the protection of the environment? What's really hidden behind the Bui Dam Project? (WRM Bulletin Nº 46, May 2001).

Kenya: Resistance to the Sondu Miriu Dam project

The Sondu Miriu River is one of the six major rivers in the Lake Victoria basin, which drains 3,470 square kilometres in the western part of Kenya. The company responsible for managing all public power generation facilities in Kenya – KenGen – is planning a dam project to be located about 400

kilometres from Nairobi. Water from the river will be diverted through a 7.2 kilometre long tunnel into a one million cubic meter reservoir and a 60 megawatt hydro power station.

This megaproject is being financed by the Japan Bank for International Cooperation together with KenGen. Kenya is the largest recipient in Africa of Japanese official "aid": in 1999 Japan devoted more than US$ 57 million under the form of grants and loans to this aim. The civil works are being carried out by Konoike Construction JV, Viedekke Heavy Construction Company of Norway and Murray & Roberts Contractors International of South Africa.

Even though the power station is scheduled to be operational in 2003, some of the works – like the construction of camp sites, roads, a bridge, and communication facilities – have already started, and together with them the fears over the environmental and social impacts of the project.

According to the NGO coalition Africa Water Network, the diversion of the river will cause the disruption of the whole hydrological basin, with negative consequences on wildlife. Colobus monkeys and hippopotamus, for example, which are dependent on the river will be forced to seek a source of water at the lower populous Nyakwere plains disturbing their habitat. KenGen is not taking responsibility on the issue, arguing that this is the competence of governmental agencies. The company even claims that a part of the river's flow will keep on running on the original channel. Nevertheless, similar river diversion projects for the Turkwel Gorge and Masinga hydropower dams resulted in the permanent or seasonal drying up of the courses. The blasting needed to build the tunnel will alter the geomorphology of the area, and the entire water table may be also affected by the construction.

Social impacts are already taking place. Since health precaution measures have not been put in place to handle the effects of the great dust clouds that come off the construction project, most members of the community are already suffering from eye and respiratory problems. The diversion of the river will provoke a shortage in the supply of water, which is a vital element for domestic and agricultural use by 1,500 local households. Additionally local communities have denounced that KenGen has not kept its promise of providing them electricity and irrigation facilities, as stated in the initial project documents. Now the company says that such activities are beyond its mandate. Last but not least the project has so far displaced 1,000 households through forced resettlement. In

March 2000 KenGen admitted lacking plans to relocate people who will be affected by power transmission lines from the dam.

Resistance to the project is on the rise and so is repression by Kenyan authorities. Last December Argwings Odera – an activist of the Africa Water Network who works with dam affected people – was arrested, beaten and shot in an arm by the police. He is now facing criminal charges for holding meetings and trying to share information and raise awareness about the project. (WRM Bulletin Nº 42, January 2001).

Namibia: Uncertainty on the future of Epupa Dam

For over five years plans have been discussed by the Namibian and Angolan governments to dam the Kunene river, which runs through both countries, and construct a hydroelectric power station somewhere south of the Angolan border. The proposals have been dogged by controversy and delays from the outset and have developed into a saga, which has rumbled on and on without ever seeming to reach closer to a conclusion.

The controversy has centred on the impact of the dam on the indigenous tribal group of the Kunene region, the Ovahimba, who have successfully lived as nomad pastoralists in the area for the past five-hundred years. Of the two potential sites for the dam the most economically viable, at Epupa, is the least environmentally and socially attractive; a dam wall 163 metres high would create a reservoir covering up to 380 square kilometres. This would displace 1,100 Himba and affect 5,000 occasional users of the excellent grazing areas on the river bank. In addition, 95 archaeological sites and 160 Himba graves sites would be permanently lost.

The Namibian government has often come under criticism for excluding the interests of its many minorities, including the San Bushmen and Rehoboth Basters, and it can be of little surprise that it has always favoured the Epupa option, yet has made minimal efforts to consult the local population about the consequences for them of such a project and how they might be mitigated. In fact, a feasibility study commissioned by the respective governments carried out in 1999 concluded that “there has not been sufficient dissemination of information concerning the scheme, or local community consultation, participation and … development of an acceptable social mitigation programme.” Fears that the disruption to the Himba and their grazing areas could lead to their urban migration and the demise of their way of life brought

the response from the Namibian authorities that the project would bring much-needed jobs to the Kunene region – so in tune with the feelings of the local population was the government that it forgot that the Himba are nomadic farmers who neither need nor want jobs.

The second possible site, at Baynes, some 40 km south of Epupa, would cover just 57 square kilometres of land, drowning 15 grave and 45 archaeological sites, displacing one-hundred permanent users and about 2,000 occasional ones. However, this site is far and away the least economically viable and could only work with the benefit of the war-damaged Gove dam inside Angola. The Angolan government, which would like an excuse and funding to rejunenate Gove, favours this option.

However, there are good reasons to question both sites. Apart from the serious disruption to the Himba population, creating a reservoir which would evaporate twice as much water as the country uses in a year seems to make little sense, especially in the desert and semi-desert landscapes of Namibia. In addition, in times of drought the power station could expect to see its output fall dramatically from 360 megawatts to 200 megawatts. The Himba themselves have suggested looking into solar and wind energy as alternatives, but have received short shrift from a government with an antipathy to any form of opposition and who is also "obsessed with building the dam, despite the fact that both the EU and the World bank have expressed strong reservations about its viability." (Stephen Corry, Director of Survival International, a group that campaigns for the rights of minority tribes).

Finally, will it ever happen? Sources close to the Namibian government have suggested that the plan has been shelved, partly due to adverse publicity and a resultant lack of investor interest. Certainly little progress has been made in the past few years and no decision has been made on which site, if either, would get the nod. Only last year in a July visit to Namibia, Luis da Silva, the Angolan energy and water affairs minister, declared that his government's priority was to rehabilitate Gove dam, suggesting that bilateral agreement is as far off as ever. Given that the Gove/Baynes option is contingent on the Angolan government securing the Gove area from UNITA rebels, if the two governments do agree on this plan it could not go ahead for the foreseeable future. However, this is largely immaterial as Namibia would agree to Epupa or nothing, which makes it difficult to believe that the plan will now go ahead at all. (By: Henry Dummett, WRM Bulletin Nº 42, January 2001).

Uganda: The same old story about dams

The story is not new. Dam megaprojects, presented to Southern governments and local communities as a token of prosperity and progress, bring disaster with them. The promotion of foreign investments disregarding the protection of the environment and the peoples' claims is now menacing the survival of Bujagali Falls in Uganda. The government is promoting the construction of a huge dam which, if realized, will destroy the scenic virgin beauty of the Bujagali falls, and the living space of thousands of people.

A report issued last February by the National Association of Professional Environmentalists (NAPE, NGO based in Kampala) after a delegation of the Association visited the area confirms these fears. If the dam is constructed at Bujagali the falls, as well as the nearby islands will be submerged, and people will be deprived of their farmland where many of them obtain their livelihood. The crabs, the birds the plants and other species of trees which are peculiar to such a place will be lost for ever. With the degradation of the landscape, tourism related with rafting will also disappear.

The project will not bring any advantages from a socioeconomic point of view either. "Why build another dam when there is already one nearby at Owen Falls and yet we don't have electricity! Is there any guarantee that we will get electricity from the new dam at an affordable price? We hear that even those people who are richer than we, are finding it difficult to pay for electricity. How sure are you that we poor people will be able to pay for the electricity once a new dam is built?" said one of the local dwellers interviewed by the NEPA delegation. And another one wondered: "The Company A.E.S (Nile Independent Power) promised us jobs, but are those jobs going to be there forever? Are the jobs going to benefit our children and grand children? Are those jobs empowering us to do better or to enslave us forever and ever and ever?" Local communities are also being menaced with displacement with a mere compensation to give place to the dam.

Concerned citizens in Uganda have been trying to bring pressure to bear on the leadership in Kampala to stop this cultural and environmental disaster. (WRM Bulletin Nº 36, July 2000).

Uganda: The Bujagali Dam, A useless giant

The Ugandan government – backed by the International Finance Corporation, the World Bank, the US agency Overseas Private Investment Corpora-

tion (OPIC), and a number of European export credit agencies (ECAs) – is promoting the construction of a huge dam which, if implemented, will destroy the living space of thousands of local dwellers together with the scenic beauty and historical sites at the Bujagali falls region on the Upper Nile River. Responsible for the construction of this US$ 530 million hydroelectric dam is US-based AES corporation.

The main argument of the promoters of the project is that it will be useful to alleviate poverty and reduce the use of fuelwood and charcoal in a country with one of the lowest per capita income in the world, and where about 95% of the population does not have access to electricity. This argument clearly confuses causes and consequences. As Martin Musumba of "Save Bujagali" Campaign says, "the real issue in Uganda is not electricity but poverty. Currently the majority of Ugandans have no money for electricity, for they are below the poverty line. Production of more electricity will not reduce use of fuelwood and charcoal until deliberate programs are evolved to reduce poverty and the cost of power."

The megaproject would completely alter the landscape, since it would flood the Nile all the way to the base of the Owens Falls Dam. As well as in the case of the Owens Falls Dam, located just 10 miles below the projected site of the Bujagali Dam, no independent environmental impact assessment (EIA) has been performed. According to Dr John Baliwa of the Fisheries Research Programme, the sources of the Nile, an extensive fishery resource with an estimated potential of 10,000 metric tons of fish per year, are menaced by the accumulation of water hyacinth behind the several dams existing in the region. Cumulative impacts including the desiccation of wetlands and the destruction of forests along the river are also feared.

From the socioeconomic point of view, consequences are equally negative. An EIA performed by AES itself considers that the dam would permanently displace 820 people, and affect an additional 6,000 by submerging communal lands and sacred burial sites. Replacement land for those who would lose homes or crops is not planned. In addition, the reservoir is expected to increase serious water-borne diseases like schistosomiasis and malaria, being the latter already the most important cause of death in Uganda. Sustainable tourism activities especially by foreign visitors who like to enjoy rafting in the spectacular series of cascading rapids of the Bujagali Falls will disappear, which will mean a significative decrease in the incomes of local communities. Jobs for local people promised by the company during the works have never turned into reality.

Ugandan and international concerned organizations are putting forward alternatives to this useless giant. They are promoting the use of true renewables like solar and wind, which constitute realistic and viable possibilities in order to stop the pressure on native forests for fuelwood and charcoal. “Future economic prosperity and sustainable water resource management in Uganda will not lie in huge dams. The way forward is the wise use of river-based environmental goods and services; not their extinction through the pursuit of hydropower lunacy,” says the National Association of Professional Environmentalists, which carried out a study of the area in February 2000. (WRM Bulletin Nº 42, January 2001).

Uganda: Bujagali dam project questioned by World Bank’s Inspection Panel

In July 2001, Ugandan civil society groups had filed a complaint with the World Bank’s Inspection Panel, claiming that the Bujagali dam project violated several World Bank policies and that it would cause social, economic, and environmental harm to the local people. As a result, the Panel took up the case and on May 30 submitted a confidential report to the Executive Board, which concludes that the planned Bujagali dam – detailed in WRM bulletin 42 – violates five key World Bank policies. The Panel report suggests a series of corrective measures to rectify the project’s problems.

According to the Inspection Panel – the World Bank’s independent investigative body – the planned dam violates the Bank’s policies on involuntary resettlement, environmental assessment, natural habitats, disclosure of information, and the economic evaluation of investment operations.

The Panel report finds the economic analysis for Bujagali to be seriously deficient. It reveals that a mild depreciation of Uganda’s currency would drive power tariffs up to 20 cents per kilowatt hour, which the report calls “surely unaffordable”. The report says that the fundamental project contract, the Power Purchase Agreement, is unfavorable to Uganda, and not always up to International Best Practice. It also reveals that the World Bank has neglected to assess potential alternatives, particularly geothermal energy, in the preparation of the project.

The report also finds that important measures to analyse or mitigate the social and environmental impacts of the Bujagali dam were either missing or seriously deficient. These measures include an assessment of the cumu-

lative environmental impacts of dams in Uganda, a resettlement and a community development action plan for the affected people.

The Panel report suggests corrective action for rectifying the problems of Bujagali. The suggestions include various measures to properly assess the project's economic viability and risks, and changes to the unfavourable Power Purchase Agreement (PPA). The report says that a publication of the PPA would be "vital" for a public debate and understanding of the project's impacts.

It is obvious that the corrective measures suggested by the Inspection Panel, as well as an adequate analysis of its economic viability, must be completed before the project is approved by the World Bank's Executive Board. The bank's managers have now six weeks to reply to the independent Inspection Panel's report.

The World Bank appears to have not yet learnt the lesson regarding the unsustainability of large scale hydroelectric dams. More importantly, it is not only ignoring the research findings and recommendations of the World Commission on Dams – made public on November 2000 – but is also violating its own internal policies and rules. Within this background, the question now is: will the Bank comply with the its own Panel's recommendations or will it ignore them and go ahead with this dam? (WRM Bulletin Nº 59, June 2002).

Uganda: Bujagali dam project comes back under a new disguise

As we have already informed in previous bulletins, the US$550 million Bujagali hydroelectric dam project on the Victoria Nile proposed by the US-based AES Corporation – counting on loans from the International Finance Corporation (IFC) – has encountered strong opposition by local groups supported by international action. The detrimental impact of the project has been acknowledged by the Inspection Panel, the World Bank's independent investigative body.

The construction of the 200-megawatt dam was due to start early this year. However, the World Bank has postponed a decision on whether to approve a US$215 million guarantee to fill the funding shortfall left by the withdrawal of skeptical Swedish, Norwegian and Finnish export credit agencies, apparently worried that the Ugandan government would not be able to repay the project costs.

Now, a new thrust to build the dam has come up as a Clean Development Mechanism (CDM) project which would be considered by Price Waterhouse Coopers for its validation. The Clean Development Mechanism is one of the so-called flexible mechanisms of the Climate Change Convention's Kyoto Protocol and allows industrial countries to "compensate for" their greenhouse gas (GHG) emissions by implementing emission reduction projects in other countries.

CDM Watch, an Indonesian-based NGO which seeks to monitor CDM projects and to provide a clearinghouse for information on CDM projects and CDM related issues and developments, has argued that the Bujagali project fails to meet key validation requirements relating to baselines, additionality, and stakeholder consultation under the following grounds:

* Bujagali is not an additional project
The project is additional only if the emission reductions achieved by the project will not occur if it is not registered as a CDM project. In this case, for example, in the absence of Bujagali being registered as a CDM project, will the dam still be built and the reductions occur? Bujagali was first proposed in 1991, with a Memorandum of Understanding between AES and the Ugandan Government being signed in 1994, three years before the Kyoto Protocol was agreed. Subsequently, these parties signed an Implementation Agreement and a Power Purchase Agreement in which they committed themselves to developing the project. Furthermore, a number of export credit agencies have approved funding for Bujagali, while a MIGA guarantee is being considered. There is overwhelming evidence that the project proponents have every intention of completing Bujagali whether it is registered as a CDM project or not.

* Stakeholder consultation is inadequate
The Bujagali project fails to meet one of the key validation requirements of the CDM, since it has been notable for its lack of transparency and persistent allegations of corruption during its development. For years now, civil society representatives in Uganda and internationally have unsuccessfully sought access to crucial project documents. This failing was echoed in criticisms made by the World Bank's own Inspection Panel, which noted that by refusing to release the Economic Review of the Bujagali project, the World Bank was violating its own Policy on Disclosure of Operational Information.

* Bujagali's baseline lacks credibility
Bujagali relies on a study by Acres International (which was found guilty of bribing a Lesotho government officer in order to win contracts of the Lesotho Highlands Water Project, a large dam that will pump water from Lesotho to South Africa) that examines the different options for expanding Uganda's power sector. The study's conclusions, based on the cost data it presents, are that in the absence of Bujagali, the replacement technologies are most likely geothermal and/or additional hydro units. In its baseline scenario, however, AES claims that if Bujagali is not completed it will be replaced by thermal units. There is nothing in the Acres study to support this, and no additional information provided. It is hard to escape the conclusion that this scenario was chosen for the simple reason that it yielded the most carbon credits.

The WRM has been denouncing that the CDM is just a trick of the Northern polluting countries to avoid commitments of cutting emissions at the source, making it easier and cheaper for them to meet the GHG emission reduction targets by implementing projects such as this in Southern countries. Once again, international agents – from consultancy firms to constructing companies and CO2 emitters – take profit of the urgent needs of impoverished countries whose governments are easy prey to their commercial goals. (WRM Bulletin Nº 64, November 2002).

ASIA

Burma: A dam megaproject for the benefit of the people?

Massive protests against dam megaprojects have taken place in Thailand due to their negative social and environmental impacts. The cases of Pak Mun Dam and Rasi Salai Dam are perhaps the most notorious even if not the only ones. Now Thailand is trying to export this destructive model to neighbouring Myanmar (formerly Burma).

In fact a Thai dam-building company – GMS Power – is proposing the construction of a big hydroelectric dam on the Salween River in northeastern Myanmar. At the same time, the Thai government has made a commitment in the sense that the Electricity Generating Authority of Thailand (EGAT) or other national agencies will buy up part of the electricity generated from projects in Myanmar by the year 2010.

With a proposed dam height of 188 metres, Ta Sarng would be the highest dam in mainland Southeast Asia, and the first dam to be built on the 2,400 kilometre-long mainstream of the Salween River. This is the only remaining free-flowing major river in the region. The 320,000 km2 Salween River Basin is also the least dammed of the region's major river basins. Menace is pending on this river since the beginnings of the 70s, since Australian and Japanese consulting companies, together with Myanmar's and Thai state agencies, have produced seven major studies examining the possibility of constructing large dams there.

GMS Power is a subsidiary of Thailand's MDX Group of companies. Through GMS, MDX is involved in dam projects in Cambodia, Laos and China. Lahmeyer International, a German consulting firm, coordinated the pre-feasibility study for the Ta Sarng project, and the Electric Power Corporation of Japan was contracted to oversee the project's feasibility study. According to it, the project's reservoir would flood an area of at least 640 square kilometres.

The Thai-Myanmar Memorandum of Understanding signed in 1997 tries to justify the construction of large hydroelectric dams and other large-scale projects for electricity generation "for the mutual benefits of the peoples of the Kingdom of Thailand and the Union of Myanmar". Nothing could be more far away from reality. Large-scale energy sector-related infrastructure in both countries – for example the polemic Yadana gas pipeline project – imply forest destruction, corruption, forced labour, and other violations to environmental and human rights. The vast majority of the population is never reached by the supposed benefits such megaprojects generate. In this specific case, a vast area of forests and fertile lands along the Salween River and in the tributary valleys would be permanently submerged by the reservoir. Many of these areas are used for seasonal cultivation of crops which serve the needs of local communities. Additionally, the reservoir will destroy the aquatic and terrestrial animal habitat of the river and its valley, and radically alter habitats downstream of the dam. Additionally, as usually happens in these cases, thousands of local people have already been forcibly relocated from the site of the proposed dam and its reservoir, by order of Myanmar's military dictatorship.

"I can't express what I feel. It would be worse than the death of my mother and father" answered a villager who was asked about his opinion on the flooding of his village due to the dam works. Is this the kind of "mutual ben-

efits of the peoples" that the governments of Thailand and Myanmar are providing? (WRM Bulletin Nº 33, April 2000).

Burma: Human rights abuses linked to foreign investment in "development"

Foreign investment in mining, gas exploitation and dam megaprojects – identified with "development" – in fact constitute a direct cause for human rights abuses and a threat to environmental sustainability in Burma. The country is governed by a military dictatorship since 1962, which has imposed a regime characterised by state terrorism.

A dam project led by the Thai dam-building company GMS Power and the Electricity Generating Authority of Thailand (EGAT), which aims to build a huge dam at the Salween River, the only remaining free-flowing major river in the region, has recently also given place to human rights abuses in Burma. Since 1997 villages in Kunhing Township, along the banks of the Salween and its tributary Nampang have been relocated. Altogether 175 villages, 4,018 houreholds and more than 1,400 hectares of fields would be flooded when the dam is completed. But since last May the situation got even worse. Villagers in southern Shan State have denounced that the Burmese Army had begun an operation of extermination of the population located in the areas to be flooded by the dam's reservoir.

Likewise, the social and environmental damage mining operations have brought to Burma are analysed in the recently released report "Grave Diggers" written by Roger Moody and disseminated by a group of Canadian environmental NGOs. The report highlights the activities of Robert Friedland and his mining and financial empire Ivanhoe Capital Corporation (ICC). Friedland is notorious for the environmental disasters caused by mining operations he owned in the United States and Guyana, and his corporate links to mercenary armies in Sierra Leone. In 1994 ICC reached an agreement with the Burmese military regime to exploit the Monywa copper mine. These operations have caused water pollution and skin problems to local residents while safety measures were completely absent. Additionally, local dwellers were threatened by the use of explosives for mining. It is astonishing that even though the financing for this operation is handled through a firm registered in Canada (Friedland's Ivanhoe Mines Ltd.) and human rights organizations worldwide have condemned corporations for doing business in connection with the brutal Burmese regime, the Canadian government has completely overlooked Ivanhoe's investment in that country.

The Yadana gas pipeline is another case where the performance of foreign companies in collusion with the government has been severely questioned due to its environmental impacts and to the violation of human rights to the detriment of the local villagers. On September 7 2000 a Federal judge of Los Angeles cleared Unocal Corp – one of the largest remaining U.S. investors in Burma – of responsibility for alleged human rights abuses during the construction of the Yadana pipeline. Unocal holds 28.6 % of the shares of the consortium in charge of the works, which ended in 1998. Lawyers representing Burmese villagers that presented the demand in 1996, who claim that they were either forced by the military to work on the project or were terrorised for not doing so, said they would appeal the decision. Unocal did not dispute the assertion that it was aware that human rights abuses were being committed by the host government during the pipeline project. Nevertheless, according to the judge, it was not proven that the oil company had conspired with the military to force the villagers to work. The question is whether justice can accept the "omission" of a powerful transnational in a case regarding human rights abuses, especially when its activities are favoured by those directly responsible for them. (WRM Bulletin Nº 39, October 2000).

Burma: Revival of the Weigyi dam

First commissioned in 1964, the World-Bank funded Bhumiphol dam in Tak province, north west Thailand, has never operated to its full capacity. In March 1994, the reservoirs behind the Bhumiphol and Sirikit dams (both World Bank-funded) contained only 7 per cent of their total usable volume. The Thai government's answer is to propose yet more dams on the Salween River, on the Thai-Burma border in order to divert water into the Bhumiphol reservoir.

The Salween river runs along the edge of Thailand for several dozen kilometres. It passes through mountains and rainforests, until recently the scene of armed insurrection. Thailand plans to deprive the Salween – as well as other rivers running along the border – of some of the plentiful monsoon rainfall diverting it towards the reservoirs of its own dams and using also the natural resource as a source of electrical power.

Recently, plans by the Electricity Generating Authority of Thailand (EGAT) to build the Weigyi dam between Thailand's Maehongson Province and Burma's Karen State, have been revived. The dam will have a back flood

that will go as far as 380-400 km to the north. Weigyi "Great Whirlpool", after completion, will be 168 meters high, with a generating capacity of 4,540 MW at an estimated cost of US$ 6 billion.

The Thailand-based environmental NGO TERRA (Towards Ecological Recovery and Regional Alliance) says the reservoir, with a normal high water level of 220 meters will be inundating 15,000 - 20,000 acres of land that will displace thousands of Karenni people in Burmese Kayah State. The extent of the damage, however, remains to be investigated, though an EGAT reporting to the Senate Foreign Relations Committee promises probable destruction of thousands of acres of forest areas on both sides of the Salween River.

The Weigyi dam nonetheless still requires official approval from Rangoon, that had already signed an agreement with Thai-based MDX Group last December to construct a 3,300 megawatt dam at Shan State's Tasarng, 400 km upstream.

The Burmese Aung San Suu Kyi's National League for Democracy has already confirmed since Burma's Independence Day, 4 January, that it is firmly against foreign investments until substantive talks between the Opposition and military rulers are in place. Shans, Karens and Karennis have also voiced their condemnations on the dam projects since 1993. "This is a life and death issue," says a Karenni representative. "The Weigyi Dam would split the Karenni in two. It would be the final nail in our coffin. Damming the Salween affects us in so many ways: economically, socially, culturally, environmentally. It will break the Karennis' rice pot." (By: James Fahn, WRM Bulletin Nº 67, February 2003).

China: The Mekong Dam Strangles the Life-source of Millions

Nobody knows exactly how many people have been evicted from their homes and land to make way for China's 22,000 large dams. Official Chinese government statistics give a figure of 10 million people, but Dai Qing, the Chinese hydropower critic, estimates that the true figure is somewhere between 40 and 60 million people. Another 280 dams are currently under construction in China, and state policy is to increase the proportion of electricity generated by hydropower plants from 19 per cent to 40 per cent, by 2015.

Until 1995, there were no dams on the mainstream of the Mekong river. The Mekong, which is known as the Lancang Jiang in its upstream section in

China, flows south from China through Burma, Laos, Cambodia and Vietnam. With the completion of the 1500 megawatt (MW) Manwan dam, China realised the first step of an eight-dam cascade dreamed up in the 1970s for the Lancang. If completed, the dams would result in the eviction of more than 68,000 people, and flood 6,500 hectares of farmland.

In 1996, work started on the 1350 MW Dachaosan dam and construction of the 4200 MW Xiaowan dam is due to start later this year. The Xiaowan dam will be one of the highest in the world, at 292 metres, and will retain a reservoir 169 kilometres long. The 1500 MW Jinghong dam is also under construction as a Chinese-Thai joint venture, with the first power due to be supplied to Thailand in 2014.

The dams will have a major effect on the downstream Mekong. Fish feeding and spawning conditions will be disrupted, leaving river fisheries devastated along with the communities that depend on them. The dams will stop silt and nutrients which are vital to downstream agriculture. Increased water in the dry season will result in the loss of riverbank vegetable gardens, which hundreds of thousands of downstream communities currently use. The quality of the water will be changed as the free flowing river is converted to a series of vast, sluggish reservoirs.

The dams themselves are threatened by the rate of soil erosion along the Lancang river. The rate of sediment inflow into the reservoir behind the Manwan dam is double the anticipated rate. One of the justifications for building the Xiaowan dam is that the construction site lies upstream of the Manwan dam and will therefore limit the amount of sediment flowing into the Manwan reservoir. However, the Xiaowan reservoir will also fill with silt, and within a few decades the Lancang river will be blocked by a series of massive lumps of concrete and vast volumes of polluted mud.

China has launched a project aimed at limiting the soil erosion in the Lancang River drainage area. Largely focussed on “afforestation”, more than 30,000 hectares of plantations have already been established under a US$24 million project. The target is 630,000 hectares by the year 2020.

The Asian Development Bank has funded another tree planting project, the Simao Forestation and Sustainable Wood Utilization project, which includes the 51,000 ton capacity Simao pulp mill, built on the banks of the Lancang. Many of China’s rivers are badly polluted. The Yellow River, for example, is

biologically dead for much of the 1,000 kilometres of its middle and lower flow due to agricultural chemicals runoff and effluent from the paper and petrochemical industries along the river. The same fate could await the Mekong.

Economically, hydropower often does not make sense. China's most recently completed mega-dam, the US$3 billion, 3,300 MW Ertan Dam on a tributary of the Yangtze River, resulted in massive debts for the dam's developers. In September 1998, Liu Junfeng, the general manager of the Ertan Hydropower Development Corporation, admitted that he could only sell 60 per cent of the electricity generated by the dam, due to a glut of electricity in Sichuan province. A second, more serious problem, is that electricity generated by smaller power plants is cheaper.

China is carrying out the projects to dam the Mekong in almost total secrecy. No independent environmental impact assessments have been published. Consultants working on an Asian Development Bank report complained that they did not have access to data on the proposed dams. When the World Commission on Dams (WCD) regional hearing took place in Hanoi in February 2000, China's decision to build the Xiaowan dam was not even mentioned.

The WCD final report, which was published in November 2000, produced overwhelming evidence that many large dams failed to achieve their intended goals and benefits, and "in too many cases an unacceptable and often unnecessary price has been paid ... especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment". China's Commission of Large Dams dismissed the WCD's findings, stating "the principles of WCD would stop any dam construction in the future. ... It is not reasonable to force developing countries to accept all the guidelines proposed by WCD." (By: Chris Lang, WRM Bulletin Nº 46, May 2001).

India: The Dandeli dam project scandal

Dam megaprojects worldwide have proved detrimental to the environment and to local communities, who directly bear the brunt of their consequences. Frequently corrupt practices are adopted by governments, consulting firms and companies – all interested in the realization of such projects – to go ahead with them. This is what happened with the Dandeli dam project in India.

During August-September 2000 the Indian NGO Environment Support Group denounced the "worst case of fraud in environmental decision making history in India". The international consulting firm Ernst and Young and Murdeshwar Power Corporation (MPC) – responsible for the Dandeli dam project across the Kali River in Uttara Kannada District – were directly involved in the scandal. The consulting firm plagiarised the Environmental Impact Assessment used for a previous dam project – that of the Tattihalla Augmentation Scheme prepared by the Institute for Catchment Studies and Environmental Management – and used it for the Dandeli dam case.

In spite of the fraud, the State environmental authority proceeded to hold the Environmental Public Hearing on 21 August 2000 on the basis of this plagiarised report. During the Hearing even hired thugs representing the developer threatened those who questioned the validity of the process. During a whole month the government of Karnataka refused to accept the facts, but coverly advised MPC to present another EIA for the project to avoid further controversy. Nonetheless this was not the last chapter of the thriller ...

From September to October 2000 Tata Energy Research Institute – a well known private Indian research agency – produced what it claimed to be an Environment Impact Assessment, but which in reality was but another farce. It is not believable that the preparation for the field study and the evaluation in the field of a vast area of bio-diversity-rich forest, in a region of difficult access because of its topography and during the rainy season can be performed in just a month time. In a letter addressed in December 5th 2000 to Dr. R. K. Pachauri, President of TERI, the Environment Support Group expressed: "Shockingly the study done by TERI is of appalling standards, that do not meet even the poor EIA standards of India. Further, it arrives at conclusions that the dam will not have significant impact on the Dandeli forests without producing any supportive evidence whatsoever. Even the ecological information produced has been found to be 'secondary and spurious' by Dr. Ranjit Daniels, an authority on the bio-diversity of the region, who reviewed the EIA on our request.

Implications have been denounced in this shady business. The environmental authorities of Karnataka, and the State's Industries Minister, Mr. R. V. Deshpande, who represents the Dandeli constituency, and is politically close to the project developer Mr. R.N. Shetty, are in an awkward situation. Indian civil society is claiming that the case needs to be brought to court. (WRM Bulletin Nº 43, February 2001).

India: Rainwater harvesters and forest protectors of the Aravalli hills

During a recent visit to Rajasthan state in India, Patrick McCully from International Rivers Network, had the opportunity to see first hand just how profoundly the work of a local organization called "Tarun Bharat Sangh" (TBS) has improved the lives of hundreds of thousands of people. He was astounded to learn that this social and environmental transformation has been achieved at a tiny fraction of the economic – not to mention human and ecological – cost of providing water services with big dams. Below some fragments of his experience:

"Generations before us never had the good fortune we have," Lachmabai, an elderly woman from Mandalwas village, told me as we sat on the edge of a large pond created by a newly built earth embankment. "Because of the water we are happy, our cattle are happy, and the wildlife is happy. Our crop yields have gone up, our forest is green, we have firewood, fodder for our cattle, and we have water in our wells."

The people of Mandalwas have built 45 water harvesting structures in the past 15 years, and more are planned. Whereas before farmers had only enough water for grains, now people can grow water-thirsty vegetables and cash crops. Villagers who were forced to survive on one meal a day now eat two to three times a day, and have a greater variety of more nutritious food. Women's chores of fetching water, firewood and fodder, and grazing and watering cattle have become much less time-consuming. The increased availability of fuelwood and tree leaves for fodder are key benefits of forest regeneration.

The water benefits I was witnessing came despite the region suffering one of its driest years in living memory, with some villages getting only a tenth of "normal" rainfall – and this on top of three previous years of drought. According to the Indian People's Union for Civil Liberties, drought contributed to at least 40 starvation deaths in southeast Rajasthan in November. Many people are reported to be surviving by eating grass. The contrast between TBS-improved areas and other regions of Rajasthan is to say the least striking.

Mandalwas is just one of more than 1,000 villages where Tarun Bharat Sangh ("Young India Association") is working. Since 1986, TBS has helped villagers build or restore nearly 10,000 water harvesting structures in Alwar and neighboring districts in the hardscrabble Aravalli hills of northeastern Rajas-

than, a few hours south of Delhi. Many additional structures have been built by villagers without TBS involvement. Villagers have also dug more than 1,000 wells to take advantage of the resulting rise in groundwater levels.

While water harvesting is central to TBS's success, it is only part of the reason why the organization has had such far-reaching impacts. By bringing villagers together to solve their severe water problems, TBS has empowered them to take control of other aspects of their lives. The results are seen in village rules to protect forests, in villagers uniting to force the government to provide teachers for their schools and to resist officials' demands for bribes, and in the widespread uptake of organic farming and improvements in traditional and modern health care practices.

The water harvesting structures are mainly crescent-shaped earthen embankments (known as johads), or low, straight, concrete-and-rubble "check dams" built across seasonally flooded gullies (nalas). Johads have been built in Rajasthan for hundreds of years but many fell into disrepair during the 20th century due to the increasing role of the state in water management (and its fixation on large-scale projects) and the consequent weakening of village-level water management institutions and practices.

Monsoon rains fill ponds behind the structures. Only the largest structures hold water year round; most dry up six months or less after the monsoon. Their main purpose, however, is not to hold surface water but to recharge the groundwater beneath. Water stored in the ground does not evaporate or provide mosquito-breeding habitat, is protected from contamination by human and animal waste, and spreads out to recharge wells and provide moisture for vegetation over a wide area.

Several watercourses that had in recent decades held water only after monsoon storms now flow year-round due to the recharged groundwater (although parts of the rivers are drying up again due to severe, extended drought). Forests have regenerated because of the raised water table and because the need to protect forests is a key part of TBS's message. A recognition that good water management requires good land management is one reason for TBS's amazing success: among the benefits of regenerating forests on the rocky slopes of the Aravalli hills is that vegetation slows down run-off and reduces erosion, thus improving groundwater recharge and decreasing sedimentation of the villagers' ponds.

The beneficiary villagers contribute a quarter to a third of the cost of water harvesting structures in both cash and kind. In-kind contributions are normally in the form of free labor but they also can include construction materials and the value of land taken up by the structure and its pond. TBS contributes the remainder of the cost. All the labor on the water harvesting structures is provided by local villagers. Apart from their in-kind contribution, they are paid for this work, meaning that construction brings cash into the villages.

Alwar is home to one of India's best known wildlife reserves, the Sariska Tiger Sanctuary. TBS has built numerous structures in the "buffer zone" around the sanctuary as well as inside the reserve itself. At first, sanctuary officials were hostile to TBS. But now they encourage TBS's work, realizing that the group has not only provided water sources for wildlife and helped regenerate the forest, but has also persuaded villagers to stop poaching. Furthermore, after a hard-fought struggle, including a case in the Supreme Court, TBS forced the closure of stone quarries that were causing considerable environmental damage inside the park (including lowering the water table and so diminishing the benefits of water harvesting). Thanks to reduced poaching and increased prey animals, the number of Tigers has increased in recent years from 18 to around 25.

The most remarkable illustration of the Alwar villagers' enjoyment of the ecological benefits of water harvesting is the "People and Wildlife Sanctuary" created by the people of the twin villages of Bhaonta and Koylala.

The rules for the protected area are painted on the face of the stone-and-concrete buttress arch dam. Among the rules are "no hunting in this forest created by god," "without permission of the gram sabha (village council) and sarpanch (headman) no tree may be cut because there is god in trees," "do not allow cattle, goats or your camels to destroy the forest," and "every drop of water in the watershed of this village should be made available to the wildlife and cattle of the village."

I sat on top of this dam and listened to the elders talk excitedly about the animals they've seen in the sanctuary – including wild boar, hyena, monkeys, jackal, numerous types of deer and leopard. And although none of them have seen one, they told me with great pride that they'd found the tracks of a tiger beside the pond and that these had been officially noted by the state wildlife department. The villagers say that none of these animals were seen near the village before they started water harvesting and forest protection.

The people of Bhaonta have played a key role in an exciting local initiative in participatory river management. The Arvari River has become perennial in all but the driest years because of water harvesting. Villagers living in the Arvari watershed decided that they should draw up rules to ensure that the newly flowing river did not become over-exploited and to encourage forest protection. In 1999 representatives of village councils from 34 villages met and formally declared the creation of the Arvari Parliament.

Seventy-two villages now send representatives to the parliament. Besides dealing with forest and water use issues it has also forced the state government to rescind a license it had given to an outside contractor for fishing rights in the Arvari. While it has no legal authority, the parliament has the moral authority to be able to impose fines on rule-breakers and to resolve resource-use disputes between villages.

Despite only minimal government support – and often in the face of outright official hostility – TBS's structures have provided irrigation water to an estimated 140,000 hectares. TBS calculates that around 700,000 people in Alwar and the neighboring districts benefit from improved access to water for household use, farm animals and crops. Each structure is small-scale, but the total benefits of TBS's work are most certainly large-scale.

Not a single family has been displaced to achieve these impressive benefits. Unlike big dams, the johads and check dams have not destroyed any rivers or submerged huge areas of forests and farmland: on the contrary, TBS's work has actually created rivers and forests.

TBS has contributed around 70 million rupees (US$1.4 million) in outside funding to the cost of the water harvesting structures. This works out to a cost of 500 rupees per hectare irrigated and 100 rupees (US$2!) per person supplied with drinking water. An admittedly back-of-the-envelope comparison of these costs with those of the notorious Sardar Sarovar dam project (SSP) in Gujarat state gives startling results. Taking a conservative estimate of the total cost of SSP of 300 billion rupees (US$6bn) gives a per-person cost of 10,000 rupees for drinking water supplied – 100 times more than in Alwar. The cost of supplying one hectare with irrigation water from SSP works out to be 170,000 rupees – 340 times more than in Alwar.

Theoretically, if the budget for SSP was available to TBS-type water harvesters, they could provide drinking water to three billion people (half the

world's population) while irrigating 600 million hectares (more than twice the world's irrigated area).

More than a billion people are estimated to lack decent access to drinking water. The World Bank and other dam builders and water privatizers use this shocking statistic to build up the case that $180 billion a year must be invested in the water sector and that multinational corporations are key in mobilizing this huge amount of money. But at Alwar costs, US$180 billion would be enough to supply water to 15 times the world's current population. The needs of the one billion who lack water could be met for about the cost of a single major dam.

The draft of the new World Bank water resources strategy argues for new megaprojects by claiming that "easy and cheap" options have mainly been exploited. In reality, easy and cheap options such as rainwater harvesting have hardly even been looked at by the water Establishment.

Alwar is no utopia. It is a desperately poor region with deplorable government services and infrastructure, high levels of illiteracy and an appalling level of oppression for the majority of women. But if there is to be an answer to the acute water problems of India – and the world – I am convinced it lies with the rainwater harvesters and forest protectors of the Aravalli hills. (By: Patrick McCully, WRM Bulletin Nº 66, January 2003).

Indonesia: Mamberamo dam threatens nomadic tribes

Hydroelectric dams have always enormous social and environmental impacts. The construction of these megaprojects is a major cause of forest loss, as well as resulting in widespread human rights violation. As stated in the World Commission on Dams' report, the construction of dams has caused the displacement of 40-80 million people worldwide. More than 40,000 dams have already been built and the Mamberamo dam in West Papua is in the process of becoming one more.

In the 1990s the area of Mamberamo was declared as an industrial and agricultural development area. The energy needed for the envisaged activities was going to be supplied by hydroelectric dams, being one of them the planned dam on the Mamberamo River. If implemented, this project would cost 6 billion dollars and would flood one of the richest biological areas of the world. Not only would this project devastate an incredible environment,

but will also impact dramatically on the lives of 35 nomadic tribes who live in the area.

The construction of the dam has already started. In the year 1997 the government officials arrived to a village called Lau – over the river Mamberamo – and gave a clear message to the local residents: everyone in the village would have to move to the surrounding mountains because their land was going to be flooded by a huge dam. According to an article published in the English newspaper *The Guardian*, a Lau village chief told the coordinator of the WWF during his visit to the place: "I would rather be shot in the head than be resettled."

The first stage of the "development" plan was completed in 1999 when a South Korean firm, PT Kodeco Mamberamo Plywood, opened a sawmill and established an oil palm plantation. Extensive industrial logging of primary rainforests in the 691,700-hectare concession is already threatening populations of endangered green turtles and birds of paradise. Land that has been cleared by PT Kodeco will serve as a site for a major industrial estate with metal smelting works, sawmills, agribusiness plantations, and petrochemical processing factories – to be powered by the dam.

The plan has prompted a barrage of protests from local inhabitants, particularly through the Greater Mamberamo tribal institution. According to its chief, Wimpie Dilasi, the project, especially the dam, will only create widespread misery.

According to a report in the Indonesian language newspaper, Kompas, West Papua's governor JP Salossa, said that loans from the World Bank and the Asian Development Bank (ADB) would fund the US$ 6 billion hydro-electric project, whose 3 units would generate 10,000 Megawatts. The organization Down to Earth sent a letter to the World Bank's Environment and Social Development Co-ordinator, Tom Walton, who replied that the Bank "is not funding and has no plans to fund the Mamberamo megaproject." Mr Walton believes that "a correctly-done social, environmental and economic assessment would show it to be a bad idea, no matter what the funding source." However, it is still unknown if the ADB shares the same views and if it will or will not fund the project.

The Indonesian government is clearly ignoring the findings and recommendations produced by the World Commission on Dams, among which the

need to gain public acceptance. In this respect, the report says: “Acceptance emerges from recognising rights, addressing risks, and safeguarding the entitlements of all groups of affected people, particularly indigenous and tribal peoples, women and other vulnerable groups. Decision making processes and mechanisms are used that enable informed participation by all groups of people, and result in the demonstrable acceptance of key decisions. Where projects affect indigenous and tribal peoples, such processes are guided by their free, prior and informed consent.” None of these recommendations have in this case been met. (WRM Bulletin Nº 49, August 2001).

Indonesia: ADB will not fund Mamberamo dam

In response to the article on Indonesia published in the previous issue of the WRM bulletin, we received the following message from Bartlet W. Edes, External Relations Officer & NGO Liaison of the Asian Development Bank:

“Dear Mr. Carrere,

I am a regular reader of your informative electronic newsletter. I noticed that WRM Bulletin No. 49 contains a story about the Mamberamo Dam in Indonesia. The story reports that the World Bank will not be funding the project, but that “it is still unknown if the ADB shares the same views and if it will or will not fund the project.”

Please note that Asian Development Bank is not financing the construction of this dam and has no intention of doing so. I would be most grateful if you shared this information with your readers, who might otherwise be left with the mistaken impression that ADB is weighing the possibility of funding this project.

In the future, please do not hesitate to contact me with any questions about ADB projects and policies.

Sincerely,
Bart W. Édes”, e-mail: bedes@adb.org

(WRM Bulletin Nº 50, September 2001).

Laos: Dams, Conservation and People

To the oil and mining companies, repressive governments and banks we list among the world's exploiters, we must add another sector – conservationists. Unaccountable, opaque and pursuing a model of protection that is both repressive and outmoded, some of the world's biggest conservation organisations are becoming indistinguishable from other neo-colonial corsairs. Unwilling to contemplate the wider consequences of their actions, they have ensured that conservation is now one of the greatest threats to the global environment.

This month, the World Bank will decide whether or not to support the construction of the Nam Theun 2 dam in Laos. One of the most destructive hydroelectric schemes on earth, it will drown 470 square kilometres of the remarkable forests and grasslands of the Nakai Plateau. Several rare animal species will disappear. The fisheries which help feed the catchment's thousands of indigenous people will be wiped out: mysteriously, this doesn't feature in the dam's environmental assessment.

On the face of it there is nothing astonishing about this project: the World Bank, institutionally corrupt and apparently incapable of genuine reform, has been funding devastating dams for years. What is surprising is that two of the most active supporters of the dam, who have done more than any others to lend it credibility, are major conservation groups.

The International Union for the Conservation of Nature (IUCN) and the Wildlife Conservation Society (WCS) recognise the destructive potential of Nam Theun 2. But it is, they argue, the only means by which sufficient money will be released by international donors to finance their plans for the remainder of the Nakai Plateau.

Both organisations claim that the forests and wildlife of the plateau are being gradually degraded by the shifting cultivation and hunting and gathering of the region's indigenous people. The WCS appears to want local people to leave the Nakai-Nam Theun Conservation Area altogether. The IUCN will let them stay, but wants them to stop their traditional farming and adopt the "alternative livelihoods" it prescribes. The dam project will give these organisations the money they need for "proper management" – the IUCN has asked the Bank for US$65 million. Moreover, by increasing state involvement in the region the dam will ensure that local people's activities are properly policed.

Moreover, neither the IUCN nor the WCS has demonstrated satisfactorily that local people are a substantial threat to the ecosystem. Indeed it is arguable that conservation groups are only interested in the area because indigenous people have looked after it so well. Experience elsewhere in the world suggests that a strengthening, rather than a reduction, of local people's land rights is the only sustainable means of managing an ecosystem: they are the ones with a long-term interest in the health of their environment.

Excluding people from their own resources while forcing them – as the IUCN advocates – to grow cash crops, could scarcely do more to set them against wildlife.

But neither human rights nor wider environmental impacts seem to matter much to organisations like the Wildlife Conservation Society. Alongside the equally prestigious Smithsonian Institute, the WCS is also working with the Burmese regime. Earlier this year, the government forcibly relocated 30,000 people from an area it wanted for a nature reserve. Two thousand of them were murdered. Survival International has shown how the Worldwide Fund for Nature's intervention in the Philippines has helped reduce indigenous people to dependency and destitution. In East Africa, tens of thousands of nomads who have been excluded by conservationists from their best grazing lands now find themselves forced to over-exploit the rest of the savannah.

The problem is as old as the conservation movement itself. Professor Grzimek, Hitler's curator of Frankfurt Zoo and the champion of the Serengeti National Park, claimed: "A National Park must remain a primordial wilderness to be effective. No men, not even native ones, should live inside its borders." Yet, beyond Antarctica, wilderness does not exist on earth: all land is affected by and reflective of human activities. Grzimek's preservationist model was never either a humane or realistic means of conservation. Yet the policy has become both too lucrative and too politically convenient to be changed. Big conservation groups, like anyone else attempting the sequestration of resources, align themselves with power against the powerless.

Conservation organisations like the IUCN and the WCS are not the friends but the enemies of the environment. We must fight them as we fight the governments and corporations with which they so gleefully collaborate. (WRM Bulletin Nº 3, August 1997).

Laos: Dams generate environmental and social destruction

Hydropower megaprojects in several Southeast Asian countries are frequently preceded by devastating logging operations in prospective inundation zones. This kind of practices cause an extensive negative environmental impact and damage indigenous communities, that are forced to abandon their lands and are resettled somewhere else. In Laos current and pending dam projects are being used as cover to evict village people from intended reservoir areas and from upland watersheds.

A report recently issued by International Rivers Network demands an urgent rethink of the "one-sided" policies of the Laotian Government and its United Nations, World Bank and Asian Development Bank supporters. According to the report, there are "fundamental problems" at all six projects visited, including doubtful financial viability, uncontrolled logging and growing mortality among ethnic minorities forced to resettle, often with little or no compensation. Possible starvation of fish ponds is feared. Social problems, as prostitution of displaced indigenous women, have also been reported. "It is irresponsible of the Asian Development Bank and the World Bank to be pushing ahead with the funding of individual hydroelectric power projects as 'aid'" states the report.

The Laosian government intends to sell much of the power generated by the Nam Leuk project to Thailand and possibly Vietnam. However, the collapse of the Thai economy has forced the Electricity Generating Authority of that country to reassess future demand estimates and such sale is nowadays doubtful. The report warns that the region's largest planned dam, the controversial Nam Theun Two project on the Nakai Plateau in central Khammouane province, may not even go ahead – despite the already widespread destruction of its catchment area. The viability of the four other projects studied remains also in doubt due to the economic crash, a fact that can be considered positive since it can allow crucial room to manoeuvre in carving out new more sustainable policies for the energy sector, the people and the environment. (WRM Bulletin Nº 22, April 1999).

Laos: Planned Nam Theun 2 dam leads to increased logging

The World Bank is edging towards making a decision on whether to award a US$100 million loan guarantee for the proposed Nam Theun 2 hydropower dam in Laos. Without the World Bank's guarantee commercial investors

will not risk lending money to a joint venture project with the "formerly communist" regime in Laos.

Four years ago, the World Bank established an International Advisory Group (IAG) "to provide independent evaluation of the World Bank Group's handling of environmental and social issues related to the proposed Nam Theun 2 hydropower project."

However, instead of providing "independent evaluation", the IAG has become an enthusiastic promoter of the project. Instead of examining whether the project is in accord with World Bank guidelines, the IAG recommends that the "project should proceed to appraisal (by the World Bank), and to fruition."

In fact, the project is in breach of several of the Bank's guidelines. The Bank's guidelines on forestry, for example, state that "Bank involvement in the forestry sector aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development." In the case of the Nam Theun 2 project, a Lao military-run logging company has logged much of the proposed 470 square kilometre reservoir area and at the same time has logged in forest areas outside the reservoir. The project has already led to increased poverty, as villager's lose their forests to loggers, and are excluded from remaining areas of forest to preserve bio-diversity.

In May 2000, the World Bank produced a "Logging Survey Mission: Technical Report" which documented examples of logging outside the reservoir area. The Mission described the logging in various areas supposedly off-limits to loggers as "systematic", "extensive" "widespread", and "large scale". The Mission reported "systematic, large scale (hundreds of stumps), recent logging" inside the National Bio-diversity Conservation Area. The hydropower dam project proponents argue the NBCA will be conserved through funding from the project developers.

The Mission also found "systematic, large scale logging" in the areas planned for resettlement of villagers to be evicted to make way for the reservoir. Rather than pointing out that this logging was project related, and clearly in breach of World Bank guidelines on forestry and involuntary resettlement, the IAG reported in March 2001, that it "was encouraged by several developments on the forestry front" and that "the great majority of the illegalities"

had been stopped. The IAG report simply ignores the damage the logging has already caused.

The project-related logging has led to the development of a considerable timber industry in the area. The IAG report discusses the “pressures to log” and mentions a Taiwanese company, Chang Lin, which has build a “very large timber processing complex outside Laksao” which is processing Fokienia trees for export. One of the factory’s products is veneer for export to Europe and Australia. The World Bank Mission notes that Fokienia is relatively rare and that the only sources near to the factory are inside the National Bio-diversity Conservation Area and in the Northern Extension area which the IAG has “strongly and repeatedly” recommended be protected “for its unique bio-diversity”.

The Chang Lin factory is only part of the over-capacity in wood processing in this area of Laos – part of an industry that has grown as a direct result of the logging of the proposed Nam Theun 2 reservoir.

In 1996, Margules Groome Poyry an Australian subsidiary of Jaakko Poyry, the world’s largest forestry consulting firm, produced a “Forestry Report” on the Nam Theun 2 project. According to the consultants, the demands of an expanding forestry industry are to be met through a plantation programme. The consultants add, “The use of resettled village labour, combined with appropriate training and management programs could provide important wood fibre in the future.” In other words, villagers evicted to make way for the reservoir are to be employed as labourers on tree plantations supplying wood fibre to a global market. Villagers knowledge of the forests, their livelihoods and their culture, are simply to be swept away.

When the World Bank’s International Advisory Group visited Ban Sailom, one of the villages where people have already been moved to make way for the dam project, villagers welcomed them with presents of orchid plants from the forest. The IAG report comments, “Generosity to visitors is a cultural feature of the people, but nature conservation is not.” The IAG recommends “nature conservation education” including videos, slides and posters for the villagers evicted to make way for the reservoir.

This incident reveals the inherent bias of the IAG. Rather than focussing on the environmental and social problems associated with a massively destructive hydropower project, the IAG seems determined to portray villagers as a threat to the forests.

Instead of sliding ever further into a disastrous project, the World Bank should reject the Nam Theun 2 hydropower project and begin a process of compensating villagers who have seen their forests and their livelihoods damaged as a result of the project. (By: Chris Lang, WRM Bulletin Nº 50, September 2001).

Laos: IUCN's controversial role in the Nam Theun 2 dam

Imagine the following situation: a company gives money to an environmental organisation. The company plans an enormous, massively environmentally damaging project in the tropics but agrees to provide funding to protect a nearby area of forest. Rather than opposing the project, the environmental organisation conducts studies on managing the protected area and recommends that the project goes ahead.

Unfortunately, this imaginary scenario is not imaginary at all. The company is Electricite de France (EDF), one of the world's largest electricity utilities. The environmental organisation is the World Conservation Union (IUCN), and the massively environmentally damaging project is the proposed Nam Theun 2 hydropower project in Laos. In February, the Thai government signed a "preliminary power purchase agreement" to buy power from the 1,000 MW hydropower dam once it is built.

According to IUCN's web-site, EDF was, until recently, one of IUCN's "Partners in Conservation". Sebastian Winkler, IUCN's Donor and Multilateral Policy Relations Officer, explained that "Most of the corporate sponsors listed on our website have provided funds to IUCN for the celebration of our 50th Anniversary (1998)." "We were exploring an avenue of entering into dialogue with EDF," Winkler added. He also pointed out that "IUCN is part of the E7 Group which includes the largest energy corporations." EDF is also a member of the E7 Group – a group formed in 1992 which consists of electricity companies from the G7 countries.

As well as having built 58 nuclear power stations in France and currently exporting nuclear technology to Eastern Europe, EDF is attempting to export another out-dated, expensive, socially and environmentally destructive technology to Laos. EDF owns 35% of the Nam Theun 2 Electricity Corporation (NTEC), the developers behind the US$1.5 billion Nam Theun 2 dam proposed for the Theun river, a tributary of the Mekong river. The other members of the consortium are the Lao government (25%), Italian-Thai

Development (15%) and Electricity Generating Plc, part of the Electricity Generating Authority of Thailand (25%).

If built, the Nam Theun 2 dam would flood 450 square kilometres of the Nakai Plateau and displace 5,000 people, belonging to 28 distinct ethnic groups, from their homes. To make way for the reservoir, forests on the plateau and in surrounding areas have already been clearcut. Water from the reservoir would be diverted via a powerhouse into the Xe Bang Fai, another Mekong tributary. Independent research shows that at least 120,000 people living along the Xe Bang Fai would face serious losses and threats to their livelihood due to damage to fisheries and flooding of riverbank gardens as a result of the project. The project developers have not studied the impacts of the project on the Xe Bang Fai.

The project developer, NTEC, claims that it will give the Lao government US$1 million a year for 30 years to protect the water catchment area, including the Nakai-Nam Theun Conservation Area. IUCN argues that the dam project is the only way of funding the conservation area. IUCN has produced several studies of the proposed conservation area, including an Environmental and Social Management Plan for the Nakai-Nam Theun Catchment and Corridor Areas. IUCN is also advising the Lao government on the project.

IUCN became further entangled in the proposed dam project in 1997, when the World Bank (which, it seems, is never far away when it comes to dam-disasters in the making) appointed the then-Director General of IUCN, David McDowell, to its International Advisory Group. The Bank set up the International Advisory Group to “provide independent evaluation of the World Bank Group’s handling of environmental and social issues” on the Nam Theun 2 project. However, in addition to evaluating the Bank’s role in the project, the International Advisory Group soon became a strong advocate of the project.

McDowell wrote in a 1997 letter to Patrick McCully of the International Rivers Network, “on balance the social and environmental benefits of the proposals outweigh the negative aspects (...) the Group’s view was that the globally important bio-diversity hotspot which is the Nam Theun watershed will be more surely protected if the dam is built in association with the Bank then by unregulated, unmonitored private sector consortium.” As Patrick McCully pointed out in his reply, there is no private sector consortium wait-

ing in the wings to fund the project. Without the World Bank's "partial risk guarantee" commercial funders simply will not run the risk of investing in the project. Jack Cizain, who was then president of EDF International, told the Bangkok Post in 1997 that without the Bank guarantee it would be difficult for NTEC to continue with the project.

According to NTEC, "Nam Theun 2 is being used by the IAG (International Advisory Group) and WB (World Bank) as a prototype for similar advice on other major infrastructure projects". If that is the case, the World Bank would do well to check beforehand whether its "independent advisors" work for organisations that accept money from the project developers. A further check could perhaps involve investigating whether the advisor's organisations stand to gain (through future contracts funded by the project developers) if the project goes ahead.

Meanwhile, IUCN urgently needs to question whether it can afford to continue to accept funding from companies involved in such environmentally destructive projects as the Nam Theun 2 dam. Particularly when IUCN's "dialogue" with the company appears to involve supporting the company's project. (By: Chris Lang, WRM Bulletin Nº 56, March 2002).

Laos: The impact of the Nam Theun 2 dam on indigenous peoples

In July 2002, the World Bank released a "decision framework" on its involvement in the proposed Nam Theun 2 dam. The paper explains how the Bank intends to make a decision on whether or not to give a US$100 million loan for a political risk guarantee on the proposed 1,000 MW dam.

The US$1.5 billion dam has been studied for more than a decade. The project developer, the Nam Theun 2 Electricity Company (NTEC), is a consortium of Electricité de France with Harza Engineering, the Electricity Generating Company of Thailand, Ital-Thai and the Lao government. Without the World Bank's guarantee, commercial financiers will not risk getting involved.

If built, the dam would result in the forced resettlement of about 5,000 indigenous people. Water from the 450 square kilometre reservoir would be diverted via a powerhouse to the Xe Bang Fai, another Mekong tributary. A recent independent study found that 130,000 people, many of whom are indigenous, derive "important livelihood benefits" from the Xe Bang Fai and

its tributaries. In May 2002, Bruce Shoemaker, one of the authors of the study, explained to a US Congressional Hearing that if the dam is built, "The flow of the river will be radically altered, flood cycles changed, and rapids (the best fishing areas) submerged."

In its decision framework paper, the World Bank states that "Project preparation has focused on mitigating these negative impacts by ensuring that the design and implementation of plans pertaining to all of the Bank's safeguard policies are carried out so as to meet or exceed Bank standards."

What the Bank does not mention in its paper is that the project has already had a major impact on indigenous communities living in the proposed reservoir area. For at least ten years, a Lao military-run logging company, Bholisat Pattana Khed Poudoi (BPKP), has been clearcutting the reservoir area on the Nakai Plateau. In 2000, a World Bank survey found that BPKP was also running large-scale logging operations around the reservoir, in forests that were supposed to be protected.

The International Advisory Group (IAG), which was appointed by the World Bank to monitor the project, confirms that logging is affecting indigenous communities. In April 2001, the IAG reported that "the progressive clearance of forest and other vegetation from the plateau in anticipation of inundation has resulted in the diminution of areas for food and other NTFP (non timber forest product) gathering including house building materials." In a letter to the World Bank's vice-president, the IAG wrote, "In villages we visited, the people have if possible sunk to a lower level of poverty than they were experiencing five or more years ago."

The indigenous people living on the Nakai Plateau and the surrounding forests belong to 28 distinct ethnic groups, according to anthropologist James Chamberlain, who was hired by the World Bank in 1996. Chamberlain noted that among these people are "Vietic ethnolinguistic groups (which) have not been well classified, and several, the Atel, the Malang, the Arao, and the Salang-X, were hitherto completely unknown."

However, NTEC hired another consultant, Stephen Sparkes, who worked for Norplan, a Norwegian consulting firm. Sparkes wrote that "After conducting fieldwork in the area, I have referred to the Plateau as a 'melting pot culture' since it is becoming more and more difficult to distinguish one group from another."

Sparkes' work found the approval of NTEC and the developers subsequently described the people living on the Nakai Plateau as "'indigenous peoples' as a whole since the distinctions between groups are not significant."

Although the people living on the plateau were not consulted before BPKP clearcut their forests, NTEC claims on its web-site that "there have been more than 242 public consultation and participation briefings and meetings which have already taken place at the local, regional, national and international levels for the Nam Theun 2 project." More than 200 of these "consultations" took place between February and June 1997 in villages on the Nakai Plateau and along the Xe Bang Fai. BPKP was already logging in the reservoir area at this time.

Barbara Franklin, a consultant hired by the World Bank to monitor consultation on the project was extremely critical of NTEC's consultation process.

After the NTEC consultation team's presentations, Franklin asked randomly selected villagers what changes the dam would bring to their villages. She noted that "many of the villagers painted rosy pictures, saying things like, 'Everything will be better, because these people will come to help us'."

Franklin produced more evidence that the information that NTEC's consultants gave during their presentations was overoptimistic and biased. In villages along the Xe Bang Fai, which would not be resettled under the project, some villagers told her that they hoped they would also be resettled.

In fact, many villagers simply did not understand NTEC's presentations, which were in the Lao language. Franklin pointed out that in some of the villages on the Xe Bang Fai, many of the villagers do not speak Lao fluently. The result, according to Franklin, was that "many participants understood little or nothing of the meeting".

NTEC's consultants faired no better with their visual presentations. During presentations in villages on the Xe Bang Fai, the consulting team showed villagers a cross section of the proposed channel which would take water from the power station to the Xe Bang Fai river. The channel would destroy 60 hectares of villagers' rice paddy land. Based on her conversations with villagers after the meeting, Franklin commented that "Most villagers thought they were looking at a picture of a well." Franklin concluded that it was "unclear whether or not women and non-Lao speaking ethnic minorities have

been consulted in a meaningful way as required by World Bank Operational Directives." The examples from her own report, however, make it crystal clear that villagers have not been consulted in a meaningful way.

NTEC states on its web-site that it is "committed to assisting affected households to make an informed choice about resettlement and compensation". In other words the informed choice offered by NTEC is not about whether indigenous peoples want their lands flooded, their rivers destroyed, their forests logged or placed out-of-bounds in the name of conservation, or even whether they want an enormous hydropower project on their land. Instead, NTEC is presenting the indigenous peoples of the Nakai Plateau with a simple choice: either move or drown. (By: Chris Lang, WRM Bulletin Nº 62, September 2002).

Laos: Nam Theun 2 dam - Fighting corruption World Bank style

In 2001, presumably in an attempt to clean up its tarnished image, the World Bank produced a glossy brochure: "10 things you never knew about the World Bank". Number seven on the list is the claim, "The World Bank is a leader in the fight against corruption worldwide." The brochure adds, "The World Bank is working to fully integrate governance and anticorruption measures into its planning and operational work. The Bank is also committed to ensuring that the projects it finances are free from corruption."

Unfortunately, in its involvement in the proposed 1,000 MW Nam Theun 2 dam, the Bank seems to have forgotten its fight against corruption. The Bank has funded a series of studies on the US$1.5 billion project and without a US$100 million partial risk guarantee from the World Bank, commercial financiers will not risk lending money on the Nam Theun 2 project. The Bank has postponed its decision on whether to give the guarantee for many years.

Despite the fact that the dam may never be built, the forests in the reservoir area have been clearcut. Since the early 1990s, the Lao military-run Bolisat Phathana Khet Phoudoi (BPKP - Mountainous Region Development Corporation) has benefited from the concession to log the project's 450 square kilometre reservoir area on the Nakai Plateau.

With the forests gone, the Lao government revoked BPKP's logging concession and the company crashed. On 14 January 2003, the government

appointed a new acting director of BPKP, Sisaleuay Khounbathao, who was previously the Deputy Head of Business Improvement at the Prime Minister's Office. Sisaleuay replaced Bounmy Chithphanya, BPKP's director for the last five years. Although the company faces huge debts, Bounmy told the Vientiane Times, "It is not bankrupt yet because we have the Party and State supporting us."

The forests of the Nakai Plateau have been sold off to the highest bidder and the company that sold the logs is heavily in debt and can only survive through government support.

BPKP's collapse, however, should not come as a surprise to anyone in the World Bank.

In 1997, International Rivers Network (IRN) wrote to the World Bank questioning the Bank's involvement in the Nam Theun 2 project. In the letter, IRN quoted from a World Bank-funded Economic Impact Study by the consulting firm Louis Berger. The report pointed out that BPKP operates largely outside of the control of the central government and recommended, "As an autonomous state enterprise, BPKP should have a Board of Directors and fiduciary accountability to the Ministry of Finance to facilitate oversight of its activities."

None of Louis Berger's recommendations were acted on, until this year. Under Sisaleuay Khounbathao, the newly appointed director, plans are afoot for BPKP to establish a council board, a board of directors, departments, and BPKP company groups and branches.

Louis Berger's 1997 report also stated, "BPKP's commercial interests will continue to lie in the direction of maintaining higher logging quotas than are commensurate with a sustainable harvesting regime, and of opening access to previously untouched areas."

This is precisely what BPKP has done. A 2001 report on forestry in Laos by the World Bank, Sweden and Finland stated, "Recent World Bank missions have assessed the extent of unauthorized, illegal, unplanned and illicit logging in selected NBCAs (National Bio-diversity Conservation Areas) and in the Nam Theun 2 watershed area where logging is prohibited." The report also noted, "serious logging infractions in the Nakai Nam Theun NBCA, and other areas which the GOL (government of Laos) had designated as off limits to logging."

In addition to logging the reservoir area, BPKP has carried out resettlement related to the project and built houses for resettled villagers.

Louis Berger's 1997 report noted that BPKP was bidding for contracts relating to the dam project, while it was also a member of the Lao government's committee that decides on those bids. In November 1997, the Bank's then country director for Laos, Ngo Zi Okanjo Iwella told Power in Asia, "BPKP will have to compete with other private companies in public bids associated with the project." The question of BPKP's conflict of interest remained unaddressed.

Iwella confirmed to Power in Asia that she was aware of "governance issues" relating to the Nam Theun 2 project. However, regarding BPKP Iwella said, "From past experience in regional rural activities, we have had a constructive engagement with BPKP. But we also know there are issues associated with BPKP in the past and we have to make sure they will not be repeated in the future."

The Bank's "constructive engagement" with BPKP has done little to prevent BPKP from running up huge debts while clearcutting a vast area of forest. A detailed and public audit of BPKP's operations, focussing especially its operations related to the World Bank and the Nam Theun 2 project, is long overdue.

The state-run Vientiane Times reported recently, "The World Bank and the Government of the Lao PDR are working hand in hand to establish that the Project revenues to the Government of the Lao PDR will effectively serve the long-term development of the country."

The income from logging the reservoir area is project revenue. If the plans for the Nam Theun 2 dam did not exist, neither would BPKP's concession to clearcut the forests on the Nakai Plateau. The people living on the Nakai Plateau who have seen BPKP steal their forests have a right to know where the money went. (By: Chris Lang, WRM Bulletin Nº 67, February 2003).

Laos: The Nam Theun 2 Dam - WWF Thailand's position

The planned Nam Theun 2 (NT2) dam on the Nakai Plateau in central Lao People's Democratic Republic would be 48 m high and 320 m long, with a capacity of about 1000 megawatts. It would create a 450 km2 reservoir with

volume of 3 billion cubic meters. Water from the reservoir would be driven through 40 km long tunnels to a powerhouse located at the base of the Nakai plateau on the Xe Ban Fai River. The size of the project and its location will have a substantial impact on regional bio-diversity and people. This short paper summarizes some of these likely impacts and explains the position of WWF-Thailand on the dam.

Over the past decade, perceptions of biological diversity have expanded to encompass the distribution patterns of biota, associated ecological processes, and the (often large) regional landscapes over which these interactions occur. Long-term conservation of bio-diversity, and the security of local human livelihoods, requires a shift in focus to large spatial scales and, within these, a proactive identification of conservation opportunities. The Nam Theun 2 dam violates these emerging principles by treating parts of a broader ecosystem in isolation.

The Nakai Plateau consists of a gently undulating 1200 km2 basin at an elevation of about 600m, and is part of the ecological system of the Annamite Mountains. About one third of the Plateau is within the Nakai-Nam Theun National Protected Area, a globally significant protected area for the future of rare and endemic fauna such as the Large-antlered Muntjac and Saola. The Nakai Plateau is not pristine. As in most significant conservation areas in the world, people have altered its landscapes for subsistence agriculture, fished its waters and hunted its forests over thousands of years. This does not detract from the conservation significance of the area, however, either for bio-diversity or local livelihoods. About one third of the Nakai Plateau would be flooded by the reservoir of the NT2 dam, securing the destruction of habitats and wildlife populations that presently maintain a significant role in the ecological functioning of the region.

From the traditional perspective of species richness, the Nakai-Nam Theun protected area ranks among the most important in the world. Over 400 species of birds occur there, one of the highest totals for any protected area in mainland SE Asia. These include over 50 species of birds that are threatened with extinction. As part of the Nakai-Nam Theun protected area, the Nakai Plateau has a special role for these threatened species: 35% occur only there, including globally important populations of white-winged ducks and fish eagles.

Until recent dam-related logging began, the Nakai Plateau supported the most extensive stands of old-growth pine forest in the region, with unique

variations in tree species composition. One of the most endangered habitats in SE Asia is lowland slow flowing rivers with adjacent forest. The Nakai Plateau, despite habitat degradation, still represents one of the best examples of such habitat in Lao PDR; almost all (180 km) would be lost after inundation if the dam were constructed.

The diversity of habitats on the Nakai Plateau also includes deciduous forest, semi-evergreen forest, secondary forest, seasonal wetlands and permanent streams, which, together with the gentle terrain they rest on, provides excellent physical conditions for high densities of large mammals – a situation that is becoming increasingly rare elsewhere in Lao PDR and the region. Though these densities have been markedly reduced through hunting, they remain significant relative to other forested areas in Lao PDR . More importantly, the Plateau's large mammals reside within one of the largest and least fragmented expanses of forest in the region, which increases their chances of persistence and recovery. Gaur and Elephants for example, are central to, and interact with larger regional populations through intact links to forested areas that surround them. The central role of the Plateau in ecological functioning is exemplified by this intact large mammal community, whose members are able to maintain widespread seasonal movements on a landscape scale.

A relatively abundant prey base of Sambar, Wild Pigs and Indian Muntjacs on the Plateau supports endangered Tigers. The Nam Theun river supports at least 80 fish species, 16 of which are endemic to it. The dam would disrupt hydrological functioning and fish migrations, causing many of these species to disappear. The water diversion scheme of the dam means that, in addition, another water basin would also be disrupted (the Xe Bang Fai).

Every international NGO that has worked on the Plateau recognizes the outstanding conservation significance of the area. Opportunities to care for extant bio-diversity and local livelihoods on the Nakai Plateau exist, but need to be developed through collaboration of local people with their government, protected area staff and conservation organizations. This has not happened. Activities such as logging and infrastructure development over the past decade in anticipation of a dam that may never be built, have already had far-reaching and negative ecological and economic consequences. To invoke the very source of so much disruption to the Nakai Plateau as the solution to these problems is clearly invalid. What stands to be lost, both in ecological and cultural terms, can not be mitigated. The Nam Theun 2 Dam is not

inevitable. Lao people and the conservation community need not accept a hydropower fate that leaves them with ecological scraps to make the best of – there are positive opportunities on the Nakai Plateau that are much more attractive.

WWF also notes that the case underpinning Nam Theun 2 is unclear. The economic viability of the project is dubious and the demand for the dam's power is also highly questionable, given Thailand's declining projected power demand (the market to which NT2 will export). In addition, there are significant alternative energy options available both in Thailand and Laos, including renewable energy and energy conservation. These have been ignored and insufficiently evaluated.

In short the deleterious impacts of the project on local ecosystems are clear; the justification for the dam and its superiority to available alternatives is not. WWF Thailand is therefore opposed to its construction. (WRM Bulletin No.68, March 2003).

Laos: Asian Development Bank to support proposed Nam Theun 2 dam

The Asian Development Bank (ADB) is funding a US$1.4 million evaluation and due diligence study of the proposed Nam Theun 2 hydropower dam in Laos. Despite the project's massive impacts on forests, under the terms of the Bank's proposed new forestry policy the ADB has no obligation to consider whether the Nam Theun 2 dam project complies with its forestry policy.

Earlier this year, the ADB announced via its web-site that it would be funding a "Power Sector Development" technical assistance project in Laos. According to Bank's information, the project is "to assist the Government of Lao PDR in undertaking the preparatory work for the development of a hydropower project in the country."

In response to a request for further information, the ADB's Sadiq Zaidi confirmed that the ADB will be carrying out an "evaluation and due diligence of NT2 (Nam Theun 2) to assess the social and the environmental impacts and to ensure that appropriate mitigatory and compensatory measures are included in the project design that complies with ADB's policies and guidelines."

Although the dam may never be built, the Nam Theun 2 project has already had a major impact on the forests of the area. Yet, the ADB's technocrats

will not need to evaluate whether the project complies with the Bank's proposed new forestry policy. The policy is currently in draft form and due to be completed in June or July according to the Bank's Javed Hussain Mir. In the strange world of the ADB, just because a project affects forests, it does not mean that it has to comply with the Bank's policy on forests.

In 1995, the ADB launched a new forestry policy and optimistically claimed that it would, in future, "refuse to finance any rural infrastructure or public investment project that will, directly or indirectly, cause significant deforestation or forest degradation".

The ADB has failed to uphold this promise. In the Mekong Region, the ADB identified a series of major roads, railway lines, hydropower dams and electricity transmission projects, all of which if built, would have a major impact on the forests of the region. In 1996, the NGO Working Group on the ADB published a response to the ADB's forestry policy, which commented on the Banks' infrastructure plans for the Mekong Region: "There has been no analysis of whether and how this will contribute to forest destruction in the region. Similarly, the well-established link between construction of roads and increased commercial forestry has not been addressed by the Bank."

The major roads that the ADB is planning for the Mekong Region have little or nothing to do with helping farmers get their products to local markets; the roads are built to extract goods and in the case of Laos, timber in particular.

Route 9 cuts Laos in two and links Mukdahan in Thailand with the port of Dong Ha on the Vietnamese coast. The widening of the road will result in the forced eviction of more than 6,000 people currently living along the road. Route 9 is used by Vietnamese logging companies to export timber from Savannakhet to Vietnam and the road passes close to two National Biodiversity Conservation Areas. ADB project documents admit that "While the road rehabilitation will improve transport, this may also exacerbate illegal trade of wildlife and log export."

However, Route 9 forms part of the "East-West Corridor", one of the ADB's "flagship programs". Governments in the Mekong Region "must ensure that the national components of flagship programs get priority in their public investment programs," according to the ADB. "Flagship programs", it appears, are more important than the Bank's forestry policy and in December 1999, the Bank approved a US$32 million loan to Laos and a US$25 million loan

to Vietnam to rebuild the roads that are to form the East-West Corridor. Further funding has come from the Japanese government.

In June 2000, only five years after it launched its previous policy, the ADB started a review of its forestry policy. In the same year, a Bank official speaking on condition of anonymity told Walden Bello, “Almost all forestry projects have failed – that is well known within the Bank.”

This time around, the Bank is not falling into the trap of making promises it cannot keep. While the new draft version of the policy refers to the importance of participation, consultation, gender awareness, poverty reduction, capacity building and environmental security, what is missing from the draft policy is an analysis (or even an awareness) of the impacts that ADB-funded infrastructure projects have had on the people and forests of the region.

The new forestry policy, if passed by the Bank’s board in its current form, would allow the Bank to fund the Nam Theun 2 dam and other massively damaging infrastructure projects, without taking into account the direct and indirect impacts of these projects on forests. (By: Chris Lang, WRM Bulletin Nº 69, April 2003).

Malaysia: Defer Resettlement of Bakun residents in Sarawak

We have received the following statement from Sarawak with a request to circulate it as widely as possible:

“The Bakun Region People’s Committee (BRPC) urges the State government and the Bakun Resettlement Committee (BRC) to shelve the resettlement of the Bakun residents which is tentatively set for July this year, as announced recently by the Chairman of the BRC, YB Dr. James Masing.

The BRPC makes this urgent appeal for the deferment of the resettlement exercise based on the following:

1. The Federal government has repeatedly announced that the Bakun HEP is postponed indefinitely. The status of the Bakun HEP is now fraught with uncertainties. As such, there is no valid reason for the Sarawak government to compel us, the affected residents, to move out of our present area, our ancestral lands and our source of sustenance and livelihood.

2. The resettlement exercise is also untimely and unnecessary in view of the prevailing economic and currency crisis faced by our country. If our people are moved to the new area, we will be at the mercy of the market as it will take us some time to start a new life and re-establish new gardens and food crops. Every food item and all our daily necessities will have to be purchased. Where we now live, we can still depend on our farms, gardens, forests and rivers and supplement our daily needs from these.

3. If the government intends to proceed with the resettlement exercise, the Bakun residents must be given the choice or option, that is, those who are willing and ready to move, they can go, while those who chose to remain in the present area must be allowed to remain until the Bakun HEP is actually implemented and the area flooded. The government should not use force or intimidate our people to move because by doing so, it is not only unjust in a democratic and civil society that our government leaders proclaim ours to be all this while it also reflects insensitivity and total disregard of our people's choice of their way of life and determination of their own destiny. There are also a number of unresolved issues that have not been seriously and satisfactorily looked into. Some of the issues which have caused grievances and disappointment among our people are:

4. The house (bilek) built for resettlement is very costly, i.e. around RM50,000 per unit/bilek. (A unit of low-cost house in Malaysia costs around RM30,000 to RM35,000). There are many complaints about the quality of materials and standard of workmanship in the construction of the houses. Given the high price, what the government is doing, literally speaking, is to give something to our people with the right hand (the compensation money) but takes it back from the people with the left hand (making us pay dearly for the resettlement house).

5. The three acres of land to be given to each family in the resettlement area is inadequate to support the family and our present way of life. Even in the foreseeable future, a family of four or more children will end up with a very tiny piece of land or worse, landless! Is this the price of development and reward for our people's sacrifice?

Our people fought during the Japanese Occupation, the Communist Insurgency and during the Confrontation to defend our country but at the end of it, we are forcibly uprooted from the land we zealously guarded, the land upon which we shed our sweat and blood to nurture, the land upon which we lay

our hopes for our children and our future generations – all by a mere stroke of the pen and terse statements from high public officials.

We do not have to wait that long to see how crucial and important the land is to us. The present economic crisis gripping the nation is a very glaring example. How sure are we that there will be no more similar crisis in the future? To make it worse, each resettled family is required to pay around RM2,200 to RM2,500 for the land title. This is adding insult to injury; we did not ask for this land in the first place.

6. The State government has not fully paid the compensation money to the Bakun residents. So far, only 30% have been given out. Full compensation should be given to our people before the government can ask us to move out. The people do not want to be trapped in a situation where they are forced to move and not fully compensated.

The entire project has been riddled with problems and uncertainties right from the start. The people do not want to be dragged into such a situation not of their own doing.

7. There are still many parcels of lands and gardens which are under dispute and their status yet to be properly determined. Some parcels of lands and gardens have been arbitrarily classified as state lands although we have cultivated and continuously occupied these lands for decades. As long as these lands which are rightfully ours under native customary rights are not compensated for, we will not vacate them. We will assert and enforce our rights thereon.

Given the above reasons, the Bakun Region People's Committee strongly urges the State government to seriously and sincerely reconsider and review its decision and plan to proceed with the resettlement exercise.

To go ahead with the resettlement programme given the conjuncture of circumstances i. e. the national economic crisis and the indefinite postponement of the Bakun HEP does not make sense. We strongly feel that it is unjustified, unnecessary, untimely and shortsighted. This decision flies in the face of received logic and wisdom and it can only court disaster.

The government should fully realise that no amount of compensation is considered adequate for the losses and sufferings to be borne by our people

because they cannot be quantified. It will unleash untold economic and social costs in the long run. At this point in time, the government should seriously look into alternative models of development, including mini-hydros, and not focus on megaprojects because at the end of the day, it will also have MEGA implications and consequences and MEGA headaches!

Let us uphold the principles of democracy – From the people, of the people, by the people, with the people and for the people and not a few individuals!

Thank you,
"Bersatu Berusaha Berbakti" (Unite, Strive, Serve)
Yours sincerely, For and on behalf of BRPC,
(Signed by BATO BAGI, Chairman).

(WRM Bulletin Nº 9, February 1998).

Malaysia: Field trip to interview people resettled by dam in Sarawak

In October 1998, Sahabat Alam Malaysia (Friends of the Earth Malaysia) went on a field trip to Sarawak to interview Dayak Ibans that were affected by the Hydroelectric Batang Ai Dam and relocated in nearby districts during the past decade.

People interviewed expressed different opinions on whether their situation had improved or if they were now worse off than before. Among the positive aspects, the main one was the possibility of access to modern amenities such as electricity, road, school, clinic and water supply. However, money is needed to sustain all these and their sources of income come from tapping rubber and working in oil palm plantations, which means that incomes are meager. At the same time, the land allocated for every family is inadequate for their future survival and many don't have any land titles. People are therefore demanding that:

1. Padi farmland should be allocated immediately to all the respective settlers.
2. Land Tittles should be issued to all the respective families at the resettlement area.
3. The charge for electricity and water supply should be at a moderate price.
4. All the gravel road should be upgraded with tar within the Resettlement area.

(WRM Bulletin Nº 18, December 1998).

Malaysia: Opposition to dam megaproject

A big campaign is being pushed ahead to stop a dam project in Selangor, Malaysia, which will not only destroy rainforest but also evict indigenous people from their ancestral homelands. The campaign is aimed at protecting 600 hectares of rainforest from being devastated by this project.

The Sungai Selangor Dam, which is being projected to meet the expected water demand in the States of Selangor and Wilayah Persekutuan, will flood pristine forests, rubber plantations and orchards. It will also inundate lowland forest, two thriving Orang Asli villages, some private land, recreational and picnic spots along the Sungai Selangor, a section of the Kuala Kubu Baru-Fraser's Hill road, among other tracts of land. The area affected is the ancestral heartland of the Temuan indigenous people. Its loss means the disappearance of these people as a culture. According to a Temuan legend: "When the Orang Asli (Original People) are no longer visible, the world will end."

The residents of Kuala Kubu Baru remember the tragedy that occurred over a century ago in 1883, when a much smaller dam across the Selangor River burst and destroyed the entire town. Selangor is an area where flash floods and landslides have increased dramatically in recent years, due to irresponsible logging upstream. Local residents will never again be able to sleep peacefully during the rainy season, and property prices will plunge.

Not only local people will lose with the projected dam. With pollution and stress levels rising in the Klang Valley, more and more people have been seeking relief every weekend in the idyllic green sanctuary of Pertak, Ulu Selangor. Once the dam is constructed, the area will no longer be useful in this regard. Even if tasteful landscaping turns the area surrounding the man-made lake into a scenic park, it will no longer have the powerful healing effect that only raw nature can provide. And since the Selangor Dam will only supply the water needs of the Klang Valley for three to six years at most, it cannot be regarded as a viable long-term solution.

The disastrous environmental impact of large dams has drawn heavy criticism worldwide. Experts now admit that damming up rivers is extremely destructive to our fragile ecosystemic equilibrium. Tampering with the natural flow and topology of rivers is a very dangerous business. The negative impact is far-reaching, unpredictable, and usually irreversible. In the case of the proposed Selangor Dam, it is quite possible that the wetlands and fa-

mous firefly colony near Kuala Selangor will be adversely affected. The negative impact of inundating nearly a thousand hectares in montainous forest of Pertak cannot be adequately assessed or quantified.

The Selangor Dam will also have far reaching consequences on the geomorphology and the hydrology of the area. It will distort the geomagnetic field of the area, resulting in drastic long-term climatic and seismological changes – including the possibility of earth tremors in hitherto stable areas. Additionally the streams and tributaries feeding the Selangor River – already polluted by recent logging on the hillslopes – will pour so much debris into the reservoir that it will need to be distilled every two or three years, adding to the enormous cost of maintaining the dam. Furthermore, constructing a 5 km (3 mile) stretch of new road through hilly forest reserves to replace the inundated stretch will cause further environmental degradation, apart from greatly increasing the enormous cost of the dam project.

The Consumers' Association of Penang (CAP) has studied the Environmental Impact Assessment study (EIA) for the proposed development that was prepared by SMHB Sdn. Bhd for the project proponent, Konsortium TSWA-Gamuda-KDEB. According to CAP, there are serious questions that need to be addressed before one can accept the validity of the water demand projections, which is object to much criticism because of their fundamental assumptions and methodology. The project does not address at all the fundamental issue of long-term, integrated, sustainable water resources planning and management on a regional/national basis which has been identified as an urgent priority for the country already in the early 1980s. The EIA in particular has not addressed the capital issue of proposing alternatives to dam construction.

The NGO Magick River, responsible for the campaign, is not only strongly criticising the dam megaproject approach, but also putting forward sustainable alternative solutions to water supply. They are small scale, do not involve timber concessions or megaconstructions, and respect the environmental and cultural vision of the Temuan. (WRM Bulletin Nº 22, April 1999).

Malaysia: Conflict caused by Bakun dam continues in Sarawak

The Bakun Hydroelectric Dam Project has aroused widespread concern among environmental and social NGOs and indigenous peoples' organizations in Sarawak, which have been opposing this megaproject considered

unnecessary – since the present and future energy demand of the country are adequately covered with the electricity produced nowadays – and negative from an environmental and social point of view because one third of Sarawak's remaining primary forest lie in the area to be affected by the dam, thus forcing the migration of indigenous peoples from the catchment area. In May 1997 the Coalition of Concerned NGOs on Bakun (Gabungan) urged ABB, the main contractor involved in the project, to definitively abandon the project. In February 1998 the Bakun Region People's Committee (BRPC) urges the State government and the Bakun Resettlement Committee (BRC) to shelve the resettlement of the Bakun residents which is tentatively set for July that year.

In spite of these severe objections and the reduction of the scale of the originally planned dam, the project's implementation went on and the denounced problems persist. On June 10th Gabungan delivered the following press statement on this conflictive issue:

"On Reviving the Bakun Project

The announcement by the Prime Minister (June 8) that the Bakun dam will be scaled down to around 500 MW capacity, raises some vital questions:

1. With a downsized dam, why does the Sarawak government still want to resettle 10,000 indigenous peoples?

Initially, the Bakun dam was supposed to have a capacity of 2,400 MW and the size of the flooded area required the displacement of 10,000 indigenous peoples in 15 long houses. Now that the dam has been downsized, why should the same number of people be displaced? One would have thought that, if the Sarawak Government had followed the recommendations of its consultants in the Bakun Hydroelectric Project, the resettlement would have been put off as long as possible until just before the reservoir is flooded. Furthermore, now that the dam has been scaled down, that there is no longer a need to displace that many people.

What has been happening, from the study by the Fact Finding Mission sent by the Coalition of Concerned NGOs, is that the Sarawak authorities are rushing the resettlement. They want "Operation Exodus" to be completed by August 1999. Apart from the reason above, the Asap Resettlement Scheme is a gigantic failure in planning, the most serious problems being:

- There are no employment opportunities in Asap. The one oil palm company has just planted their seedlings, so the people will have to wait five years before the trees mature for harvesting. This is assuming plantation wage labour is suitable for the Bakun indigenous people, who have thrived on swidden farming, forest products in their traditional long house communities for centuries. The land they have been given (3 acres) is not what they had been promised (3 hectares) and certainly not enough to work on by each household, never mind their future generations.

- The house units at the Asap Resettlement Scheme – small, cheap wood, shoddy work and priced at RM52,000 – would be considered daylight robbery by West Malaysians. Despite the fact that this is the biggest resettlement scheme of indigenous peoples, the scandal is that it has still not been given a Certificate of Fitness by the Kapit Majlis. The reason given is that there are defects in the design of the houses and facilities around the long houses there.

The full report of the Fact Finding Mission to Bakun will be released by the end of June 1999 and submitted to the federal and state governments.

2. Dams cannot be considered renewable

Hydroelectric dams, together with nuclear and coal-fired power stations cannot be considered “renewable”. The world-wide experience with hydroelectric dams have shown that they are environmentally destructive and have a fixed life, after which they need to be decommissioned at great cost. That is why the World Bank does not finance hydroelectric dams anymore. Our hydroelectric dams in the Cameron Highlands are a poor advertisement. The Chenderoh Dam has had to be upgraded and new machines installed.

3. Alternatives to the Bakum Dam

Like the response to our water crisis, we have yet to see the Government implement energy saving measures and ensuring our power stations operate at full efficiency. Other countries which have done this have managed to reduce the consumption of fuel oils and the cost of generation almost a decade after the mid-seventies by energy saving alone! Our own Energy Minister has said that the industrial sector can save up to RM685 million in energy cost a year if it implements energy-saving measures.

We have pointed out that the country has to have an energy-needs inventory, not just electricity consumption projections. This means the collection of reli-

able data on types of energy produceable and the varying amounts used in the country, both domestic and industrial; optimising the match between energy sources and uses to avoid wastage, and tapping more renewable sources.

The country has not been given a total picture of our options. For example, we have been told that the Bakun project will be saving on consumption of our own gas supply, but the public has not been informed that we have been wantonly selling gas to Japan and other countries anyway all these years!

If we need hydroelectric dams at all, these should be very small dams built in situ to supply power to long houses and local industries without the need to displace any indigenous peoples.

4. Why do we want toxic and energy-hungry industries such as aluminium smelters?

The earliest justification for the Bakun dam during the Eighties was the need for energy to fuel an aluminium smelter in Bintulu. Aluminium smelting is one industry that the developed countries want to dump on gullible people like us because it is environmentally toxic and consumes voracious amounts of energy. It is unbelievable that after all these years, when we are supposed to be more environmentally conscious and wary of foreign countries dumping their toxic industries on South countries, the aluminium smelter is again proposed! Who will gain from this investment?

5. The right of information.

The Government must be transparent about the cost of the project, the tenders for the contracts, etc. Furthermore, the public has the right to know why Ekran Berhad and Bakun Hydroelectric Corporation will receive a scandalous RM 950 million for compensation. So far we have not been able to gauge such specific information. The Bakun dam project has been wrapped in controversy from the beginning because of secrecy over these details. We hope that this will change for the Malaysian people are entitled to information which affect their lives and taxes.

Released by:
Dr. Kua Kia Soong
On behalf of Coalition of Concerned NGOs on Bakun"

(WRM Bulletin Nº 24, June 1999).

Malaysia: The "progress" brought by the Bakun dam in Sarawak

For years the Bakun Dam Project has aroused great concern among environmental and social NGOs and indigenous peoples' organizations in Sarawak and worldwide, which have opposed this megaproject since it is detrimental to Sarawak's remaining primary forests that lie in the catchment area and to the indigenous people that inhabit .

The forced resettlement of the Bakun residents – which sum about 10,000 indigenous people belonging to 15 longhouses – is another negative consequence of this "development" project. Together with the extinction of their Native Customary Rights over their ancestral lands, thousands of indigenous peoples from the Kayan, Kenyah, Lahanan, Ukit and Penan ethnic groups have been uprooted from their homes and resettled in Asap, about 30 kilometres from the dam site.

Not only the traditional cultivation systems of the indigenous peoples have completely disappeared – since each family has been given just a small plot to work on – but also arbitrariness and irregularities reign regarding the government's promise of compensation for their lost lands. Many of them claim that they have been grossly undercompensated or of not having received any money at all. Moreover, most of the compensations did not even reach the price of the new modest houses they are now obliged to live in. Even low cost houses in other parts of the country are much cheaper and higher quality. Additionally, instead of involving the natives in the construction of the new homes, Bucknalls – a UK based multinational – was contracted to build the longhouses and infrastructures. Last but not least the "modern" village lacks completely adequate infrastructure regarding roads, waste disposal and schools.

With this resettlement the indigenous communities have lost their land and are in a rapid process of aculturisation produced by the conversion of their self-sustainable economy into a full cash economy. At the same time their land and forests – which have been their home for centuries – will end by being submerged by the Bakun megaproject. Can we call this "progress"? (WRM Bulletin Nº 29, December 1999).

Malaysia: Why the Selangor Dam?

The Selangor dam project is being strongly resisted by local communities, indigenous peoples and environmental NGOs, since it means the destruc-

tion of 600 hectares of rainforest, the eviction of the native Temuan from their ancestral homelands, and the destruction of the green sanctuary of Pertak in Ulu Selangor. It is also feared that the wetlands near Kuala Selangor, as well as the montainous forest of Pertak will be adversely affected. Additionally, safety matters regarding the dam structure have not been adequately addressed. With well founded arguments the Consumers' Association of Penang (CAP) has severely questioned the Environmental Impact Assessment study (EIA) prepared by SMHB Sdn. Bhd for the project proponent, Konsortium TSWA-Gamuda-KDEB.

The opposition to the project is increasing. SOS Selangor (Save Sungai Selangor), a group of concerned citizens whose aim is to protect the environment in the region, has denounced that the EIA contract was given to a component of the consortium involved in the building of the dam, without an open competitive tender. This document contradicts itself in a number of topics and does not even follow the guidelines set by the Department of the Environment (DOE) on information that the assessment should contain. Considering that the EIA has been conditionally accepted by the environmental authority, SOS Selangor is claiming that the conditions placed on the dam consortium as a result of the EIA are made public. This means that the DOE must ensure that the monitoring and enforcement of the project is completely credible by informing about important issues related to it, for example how many qualified personnel will be dispatched to the site, how the environmental authority is going to enforce the EIA conditions that logging must be confined within the 600 hectare reservoir area, if this area will be thoroughly cleared before flooding, if wildlife must be given adequate berth to escape from the area before flooding, etc. According to precedents that have ended in environmental disaster, monitoring and enforcement of EIA conditions by the DOE and municipal authorities do not really take place in Malaysia.

As an immediate measure, SOS Selangor is demanding that the illegal logging activities performed by Gamuda in the catchment area of the Selangor River be immediately stopped, since no permits or contracts have yet been signed. In the meantime, a capital question remains with no answer: why going ahead with the Selangor dam project in a country where three dam projects – Bakun, Sabah and Kelantan – have recently failed, and where forests are quickly being destroyed? (WRM Bulletin Nº 30, January 2000).

Malaysia: Bakun Dam project once again relaunched

The Bakun Dam project – the largest in Southeast Asia – was originally planned by the Malaysian authorities in the early 1980s, abandoned in 1990, revived in 1993 and reshaped in 1997. The Bakun Hydroelectric Corporation is the owner and future operator of the dam. Lahmeyer International from Germany, Harza from the US and Dohg-Ah Construction and Industrial Co. from South Korea have been involved in the supervising of the works and the construction of the tunnel for the diversion of the waters. The main construction package of this multimillion dollar initiative was first granted to the Swiss-Swedish multinational ABB and the Companhia Brasileira de Projectos e Obras (CBPO), but in late 1997 problems arose and ABB was sacked from the project. The expected and real impacts of the projected dam on the environment and local communities, and the controversy that such mega-project has brought with it, are in line with its gigantic scale.

According to the original plan of the dam, about 69,000 hectares of primary rainforest – which represents one third of Sarawak's remaining pristine forests – were to be logged. Clearcutting could have catastrophic effects on the dam itself, increasing the chance of sediment build up, flood and slope failure. Fish stocks would be dramatically reduced following the loss of mobility and deoxygenation of river water in the flooded area, while 43 protected species of fauna and 67 protected species of flora could disappear because of flooding. The project's environmental impact assessment was never released to the public, although this is a legal requirement.

Local villagers, indigenous peoples, and human rights and environmental groups in Malaysia and abroad have repeatedly denounced the lack of transparency surrounding the project from the very beginning. The infrastructure needed for the works has facilitated the encroachment on Native Customary Rights lands. The forced resettlement of the Bakun residents – which sum about 10,000 indigenous people belonging to 15 longhouses – is a major impact caused by the project. Indigenous communities of the Kayan, Kenyah, Lahanan, Ukit and Penan ethnic groups have definitely lost their lands and crops – including traditional rice varieties – and were resettled in a location called Asap. The government promised to compensate them, as though the loss of their homeland and culture could be somehow repaired. But in fact they were only provided with modest houses in a new "modern" village lacking completely adequate infrastructure regarding roads, waste disposal and schools and where no job opportunities exist.

Because of the Asian economic crisis in 1997 the Malaysian government had to halt the project, as well as several other major infrastructure initiatives, in order to reduce public spending. However, Bakun's long and tortuous story is not over yet, since two years later the authorities raised the proposal of restarting the project, presenting a downsized plan according to which the original generation power of the dam of 2,300 megawatts was reduced to 500 megawatts. The Coalition of Concerned NGOs on Bakun (Gabungan), the Bakun Region People's Committee (BRPC), Sahabat Alam Malaysia (Friends of the Earth) and other representatives of Malaysian civil society and academic circles consider nonetheless that the only real solution to the conflict is to definitely shelve the project. They advocate for a more realistic, sustainable, transparent and democratic approach to the issue of energy needs and supply in Malaysia. (WRM Bulletin Nº 42, January 2001).

Philippines: Dam megaproject resisted

The Ibaloi indigenous people, that inhabit the area to be affected by the San Roque dam project in The Philippines, have started – with the support of Friends of the Earth-Japan, International Rivers Network and the Cordillera People's Alliance – a campaign to stop this destructive project, since the works would destroy the indigenous peoples community and livelihoods and additionally negatively affect the life of more than 20,000 people. An independent review of the project's environmental impact assessment, co-ordinated by the above named organisations, found that there were serious deficiencies in the quality of the studies and that many important environmental questions were not addressed. In addition, a recent fact-finding mission to the existing resettlement sites concluded that the resettlement is poor and people were dissatisfied since in the resettlement areas there is no source of long-term livelihood or income.

More than 44 social and environmental organisations worldwide – among which the WRM – addressed a sign-on letter to the authorities of the Export-Import bank of Japan (JEXIM) which intended to give financial support to the project, asking them not to approve such loan. Unfortunately on September 22 JEXIM approved the loan.

However, the organisers of the protest consider that the campaign was able to put the issue firmly on the public agenda in Japan, which means that the authorities and public opinion have the possibility to monitor the evolution of the questioned project. (WRM Bulletin Nº 27, September / October 1999).

Philippines: Local people against the San Roque dam

The San Roque Dam is to be located on the lower Agno River of Pangasinan Province, in the Cordillera region of Luzon island in the Philippines. If built, San Roque would be the tallest dam – at 200 meters – and largest private hydropower project in Asia, generating 345 megawatts of power. Electricity generated by the dam would be primarily used to power industrial activity and the burgeoning mining industry in northern Luzon. Preparation of the site began in 1998, and construction is slated for completion in 2004. San Roque is the third dam to be constructed on the Agno river: the first two, Binga and Ambuklao, were built in the 1950s.

The San Roque Power Corporation (SRPC) is owned by a Japanese trading company, Marubeni (41%); a subsidiary of US energy company Sithe Energies Inc. (51%), which is 29% owned by Marubeni; and a Japanese utility company, Kansai Electric (7.5%). In 1997, the Philippines National Power Corporation (NPC) gave the SRPC the rights to build, operate and maintain the project for a period of 25 years. In return, the NPC has agreed to buy power for a price of P2.98 per kilowatt-hour. In April 1998, US-based Raytheon company won a $700 million sub-contract to design and build the facility.

The project cost is estimated at US$1.19 billion. In October 1998, JEXIM (the Export-Import Bank of Japan) approved a US$302 million loan to the private sector developers, and is considering an additional US$400 million loan to finance the Philippines National Power Corporation's contribution to the project. Other financing is expected to come from a consortium of Japanese commercial banks and equity provided by the project sponsors.

Project benefits are said to include irrigation of 87,000 hectares, water quality improvements due to reduced downstream siltation, and 50 percent reduction of floods which destroy crops during the rainy season. However, the two upstream dams, Binga and Ambuklao, have been plagued by excessive sedimentation due to logging and gold mining operations in the Agno watershed, resulting in more severe floods at the upper end of the reservoirs. There is no reason to believe that the situation will be any different at San Roque.

Over 160 families at the dam site in Pangasinan were forcibly displaced in early 1998 and for almost a year were living in desperate conditions at a temporary site. They were promised land, houses, alternative livelihood sources and social services, but instead the NPC distributed $10,000 (Philippine

currency) per family as supposed compensation. Only in late January 1999 were 147 houses in the new resettlement site handed over to the displaced families. Another 402 families in Pangasinan will be required to relocate before the project is completed.

The project is fiercely opposed by thousands of indigenous Ibaloi peoples upstream of the dam site. NGOs in the region estimate that if the dam is built, more than 2,000 Ibaloi families in Itogon, Benguet will be adversely affected by the project. Many of the people facing resettlement were forced to move once before to make way for the Binga and Ambuklao dams upstream. The livelihoods of tens of thousands of downstream residents will be affected due to erosion and destruction of fisheries.

It is important to underscore that JEXIM's environmental guidelines state that people resettled by projects it funds must have given their consent. Given the strident opposition of the populations slated for resettlement, it appears that JEXIM's support for this project violates its own guidelines. Affected peoples have written to JEXIM in protest, to no avail.

Approximately 4,000 residents, municipal and barangay officials including the mayor of San Nicholas, Bagong Alyansang Makabayan-Central Luzon (BAYAN-CL) and the Cordillera Peoples Alliance (CPA) trooped to the municipal plaza and held a rally calling for the stoppage of the San Roque Dam project last September 30th, 2000 in San Nicholas, Pangasinan. The rally highlighted the failure of the Marubeni Company to meet the peoples' demands and conditions attached to the dam construction.

Local organizations have been campaigning for the total stoppage of the dam project because of its adverse social and environmental effects on the host community. Furthermore, they believe that the project will not benefit the Filipino people. Besides being a burden to the Filipino taxpayers, the $1.2 billion dam will only serve the energy needs of the foreign mining companies who are out to exploit their natural resources. The project also violates the indigenous peoples and farmers rights over their lands. (WRM Bulletin Nº 42, January 2001).

Thailand: Local people resist dams

Dams are one of the most important causes for forest and agricultural land destruction, which usually goes together with the loss of their land by local

communities caused by forced displacement. This unsustainable model is applied worldwide, from South America to Asia. Thailand is not an exception.

On March 23, five thousand people from eight different groups affected by existing dams, planned dams, and land rights issues united in a struggle for justice by seizing the Pak Mun Dam in Ubon Ratchathani Province. This dam was chosen because it has provoked and continues to provoke serious negative environmental impacts on the people of Isarn in North-East Thailand. For a long time villagers have been suffering fresh drinking water shortage. They set up a temporary village on the left bank of the Mun River and decided to remain in the place until their demands have been met. The activists are part of the Assembly of the Poor, a coalition of Thai peoples' movements to fight for the rights of the people to participate in the country's environmental and development policies.

Their most urgent demands are focusing on the solution to two specific problems: the drastic reduction in the number of fish in the Mun River, which affect the livelihoods of 3080 families since dam construction, and health problems such as a 50% increase in the incidence of intestinal fluke, an unknown increase in the incidence of liver fluke, and a potential spread of schistosomiasis from snail vectors inhabiting the reservoir. Demonstrators also demand land compensation of 15 Rai (2.4 acres) per family for the lost fisheries income.

Dams are nowadays a widespread problem all over the country. Sirindhorn Dam, also situated in Ubon Ratchathani Province, is damaging 2526 families, which have received no compensation since the dam was built in 1969. Lam Can Chu Dam, in Chayapum Province, is responsible for the loss of natural forest areas, which provided the villagers with food and income, for water shortages downstream due to the storage of water in the reservoir and river canalization, and for the lack of an irrigation system in the downstream areas. Additionally, the Royal Irrigation Department has never paid compensation to the peasants for the loss of their land, fruit orchards which resulted from the building of the dam. At the same time villagers in Amnat Charoen Province are demanding land compensation for the resettlement that followed the flooding of their lands by Huai Pai Dam. In relation to the projected dams of Phrong Khun Phet in Chayaphum Province, and Lam Dom Yai in Ubon Ratchathani Province, root based organizations are demanding that they are definitively shelved. (WRM Bulletin Nº 22, April 1999).

Thailand: Peoples' demonstrations

After the seizure of the Pak Mun Dam in Ubon Ratchathani Province that occured on March 23th to the hands of five thousand people from eight different groups affected by existing or planned dams, false charges have been made against the demonstrators. The Government has alleged that opposition parties are supporting the demonstration, with the ultimate aim of bringing the government down. While local officials state that they don't have the ability to address the problems, the Electricity Generating Authority of Thailand (EGAT), which administrates the dam, has requested that the demonstrators be arrested for unauthorized access to the dam site. Because of these reactions, the Assembly of the Poor (AOP) has thus far refused to negotiate with either the government or EGAT. We are including below a statement of the demonstrators explaining their arguments and rejecting the government's accusations.

Another major issue in Thailand nowadays is the demonstration of the Northern Farmer Network (NFN), the Assembly of Tribal Ethnic Minorities (ATEM) and the Assembly of the Poor (AOP) in Chiang Mai, that started on April 25th. There were registered 40,000 lowlanders and highlanders who participated in the demonstration. One of the demands made by NFN, ATEM and AOP is that the four forest laws and regulations as well as forest-related cabinet resolutions must be changed or revised in accordance with the new Constitution which recognizes the right to participate in resource management and protection and community rights in conserving and managing culture and environment. Besides the legal reform, NFN, ATEM and AOP also demand the government to reconsider the draft "Community Forest Act" which does not allow community forest in the protected forest area.

Afters several days of negotiations not only no concrete solutions were reached, but also the authorities took intimidatory and violent actions against the demonstrators, who on the contrary had been acting in a completely peaceful way. See below Joint Declaration Number Two.

"The statement of Assembly of the Poor (AOP). Demonstration Pak Mun Dam site in Ubon Ratchathani Province.

- Why do we have to demonstrate?

Because our livelihoods and communities have been destroyed by the failed development policies of the government, we, Assembly of the Poor (AOP),

can no longer survive in our land. A good example of this is Pak Mun dam, which has blocked fish migrations from the Mekong River. The resulting decline in fish catches has had serious consequences for the people of this area.

The government not only ignores the impacts that it has caused, but continues to make more problems for the affected people. For example, this government cancelled the compensation approved by the Cabinet of Banhan and Gen. Chawaliti's Government for villagers affected by the completed dam.

- Why have we not demonstrated before?

Actually, the AOP, environmentalists and academics have protested against the Pak Mun Dam Project by urging the government to at least establish a committee to review and assess costs and benefits, economic impact and changes to the ecology of the Mun River system, but the government refused to do so. It is clear that there are many negative impacts existing, such as extinction of some fish, declines in fish catches and the spread of schistosomiasis. These impacts are the main causes that livelihoods of people along the Mun River have been ruined after the dam was completed in 1994.

The AOP has given the government more than enough time to initiate measures of resolution, but it still ignores the necessity of applying adequate resources to the problems of these poor.

- Are the demonstrators actually the affected people in this case?

It is stated by the AOP that the demonstrators have been shown to be the same affected people by two clear and transparent verification measures.

Firstly, the established demonstrators will verify the participants before accompanying the demonstration.

Secondly, the demonstrators will again be verified by the formal resolution committees who would be established by the government after negotiation with demonstrators.

- Since we have received some compensation to date, some may wonder if we are now merely trying to get as much as we can.

The poor have been calling for justice over and over without any sincere resolution from the government.

The mitigation and compensation given by the government to affected people during dam construction has been grossly inadequate, especially when compared to the negative impacts that have resulted. This so-called development effort has resulted in more sacrifices and costs than benefits for these people.

- Where do the demonstrators get financial support from?

The AOP holds demonstrations with internal funds. External funding comes from donations by demonstrators, as well as selling our products such as souvenirs, sweets, handicrafts, organic vegetables, etc.

Another form of financial support is the simple and economically efficient lifestyle of the group members. We help each other by bringing in food staples such as rice, and by co-operative collection of renewable food resources such as frogs, mushrooms, insects, wild vegetables, etc.

The AOP does not have any economic affiliations with political parties or foreign agencies. All transactions are transparent and easily viewed by the public.

- Are there any party hidden political agendas behind demonstration of the AOP?

The AOP has been urging every branch and government to resolve non violently the problems of all poor people who have sacrificed themselves for this so-called development. We have been calling for sustainable resolution from every government not specific to any government party; therefore, our demonstrations have no hidden political agenda.

(Written by Assembly of the Poor. Translated from the Thai by Teerapong Pomun)".

"Joint Declaration Number Two. The problems of the poor must be resolved by the government.

We, the Assembly of the Poor, the Assembly of People of the Mun river, the Assembly of the Northern Community Forest, the Northern Farmer Network

and the Assembly of the Hill Tribes of Thailand, have been demonstrating in order to demand that the government resolve the problems that have been caused by their traditional top-down style of development. Even though we have been demonstrating for almost two months, there seems to be no representative from the government willing to negotiate with the demonstrators. In a few cases, negotiations have been initiated, but there has been no attempts at sincere resolutions. The following are some examples of this trend.

The demonstration in Ubon Ratchathani province.- Even though thousands of people were affected by the four completed dams, the two planned dams, the land and forest management policy as well as the Dan Chong Mek Thai-Laos border Development Project; as indicated by their demonstrations from March 23 to the present, there has not been any representative from the government appearing to negotiate.

The demonstration in Si Sa Ket province.- Since April 20, 1999, 2300 village families affected by Rasi Salai dam and Hua-na dams' construction have been demonstrating at the Rasi Salai dam site. Again, no representatives from the government have appeared to negotiate.

The demonstration in Sakonnakorn province.- Thousands of villagers affected by the land and forest management policy of the government have been demonstrating since early April, without any response from government representatives.

The demonstration in Chiangmai province.- Thousands of families of villagers affected by forest management policies, Mekok dam construction, the public land issue and the government's lack of recognition of their citizenship have been demonstrating since April 25, 1998. The demonstrators had negotiated with a representative from the government on May 9, 1999, the representative then said those agreements would be taken to the meeting of the cabinet on May 11, 1999. However, there is nothing guaranteed that these agreements will be taken to the meeting of the cabinet due to the fact that there is now an official group which has formed and convinced some villagers to protest against taking the agreement to the meeting of the cabinet.

Moreover; there are some politicians and some groups of officers who have put a negative twist on the demonstrations. They have alleged that the demonstrators are paid to demonstrate, with the ultimate aim of ending the government currently in power. Another method they have used is to threaten

the families of the representatives who join the demonstrations. For example, national park officers threatened villagers in Kwang Pao village, Jom Thong district, Chiang Mai province on May 9.

We jointly declare that our demonstrations in Ubon Ratchathani, Sri sa gate, Chiang Mai and Sakonnakorn provinces, in the name of the Assembly of the Poor, the Assembly of the People of the Mun River, the Assembly of Northern Community Forest, the Northern Farmer Network and the Assembly of the Hill Tribe of Thailand have no hidden political agenda, but in fact aim to get the sincere resolutions from the government.

We declare that we have to demonstrate because the government always refuses to put an effort towards resolving our problems. We have been making this request to the last five governments in power. We see their accusations of political agendas on our part as an attempt to put a negative twist on our demonstrations, and thereby avoid the responsibility of negotiations.

We see it is urgent that:

a. The government must send powerful representatives to negotiate resolutions for problems of the poor who have been demonstrating at the Pak Mun dam site, Ubon Ratchathani province, Rasisalai, Si Sa Ket province, and in Sakonnakorn province.

b. The government must take the agreements that were negotiated in Chiang Mai on May 9 to the meeting of the cabinet on May 11 to be considered without condition.

c. The government and its officers must halt putting a negative twist on our demonstrations as well as all forms of violence and intimidation against us."

Declared at Chiang Mai City Hall.

May 10, 1999.

Assembly of the Poor / Assembly of People of the Mun River / Assembly of the Northern Community Forest / Northern Farmer Network / Assembly of the Hill tribes of Thailand". (WRM Bulletin Nº 23, May 1999).

Thailand: Authorities play "Ethnic" and "Nationalist" cards

Recent violent and unconstitutional actions on the part of the Thai Royal Forest Department, provincial authorities and the police against peaceful demonstrators are arousing strong concern both within the country and abroad.

The demonstration for land, forests and citizenship rights of the Northern Farmer Network (NFN), the Assembly of Tribal Ethnic Minorities (ATEM) and the Assembly of the Poor (AOP) in Chiang Mai, started on April 25th, in which 40,000 lowlanders and highlanders are participating, is shaking political and social reality of Thailand.

The police and forestry department officials reacted violently against the demonstrators just as they were about to be addressed by high-ranking ministry officials with whom they had been peacefully negotiating. The demonstrators, many of whom belonged to minority ethnic groups resident in Thailand's highlands, were slandered as "foreigners" and harassed by agents provocateurs before police forced them from their rally site in front of the Chiang Mai Provincial Hall. University faculty advising the demonstrators were pilloried a few days later by members of a conservation group who accused them of selling out the country.

The incidents reflect a growing trend throughout the country of official indifference toward the constitutional rights of ordinary villagers asking for land and forest rights, compensation for livelihoods lost as the result of dams or other development projects, or a representative voice in the future of their local areas. The facts registered in Chiang Mai are not isolated. Instances of repression have also occurred along the Mun river and in the Dong Larn forest area of Thailand's Northeast.

At present NGO workers and village leaders are working with villagers to help prepare them to register to obtain citizenship and to register their land. Leaders of NFN have given a press conference in Bangkok and discussed the possibility of taking legal action against the governor of Chiang Mai. Academics supporting the rally have confined themselves to providing more information to the public via the media, explaining the problems faced by NFN, ATEM and AOP and indigenous people in general.

It is important that the wider public know about the use of force to disperse the rally in Chiang Mai and ask for an explanation why Royal Forest Depart-

ment officials were involved. If the repressive collaboration between the Royal Forest Department and local authorities is allowed to continue during the registration of highlanders and their land use under the pretext that the latter are “threats to national security”, the result is likely to be further violations of rights such as those seen in Chiang Mai and in other places of Thailand. (WRM Bulletin Nº 24, June 1999).

Thailand: Local people’s resistance to dams

Dam megaprojects are being strongly resisted by local communities worldwide since they mean the loss of their lands and forests, and their forced displacement. In Thailand massive protests have been organized to halt this kind of projects undertaken in the name of “progress”.

A group of 500 villagers belonging to the Forum of the Poor has settled in the middle reservoir of Rasi Salai Dam to support the struggle of their relatives of the Moon Basin Forum for compensation since their lands will be flooded by the dam project. The works would affect more than 600 peasants’ lands. But the Department of Energy Development and Promotion is putting their lives at risk menacing to start operating the flood gates soon, by the end of the rainy season.

Prasittiporn Kan-Onsri, adviser to the Forum of the Poor, said villagers would not be moved by threat. “Whatever happens we will not move out from the reservoir. We will survive somehow,” he said.

The conflict between the authorities and local communities is due to an opposite point of view related to land and natural resources management: while the government considers that the forest and land along the river banks is public property, villagers claim that they have been using the wetland forest along the Moon river for generations because the land is rich with sediment from seasonal flooding. A recent study performed at the Khon Kaen University supports their viewpoint. Additionally, reality shows that land management performed by local dwellers generally assures sustainability. On the contrary, lands under public domain end up very often – by means of concessions – in the hands of logging, plantations or mining companies which destroy the forest. (WRM Bulletin Nº 27, September / October 1999).

Thailand: Letter to the Prime Minister on Rasi Salai dam

Inhabitants of Mae Mun Man Yuen Village #2 affected by Rasi Salai Dam are demanding that the government re-examines the impacts of the project and compensate 1800 families that are in danger of loosing their farmlands. The protesters, who belong to the Assembly of the Poor, are prepared to stay in their village until their demands are met. Dam megaprojects have provoked severe concern and led to directs actions in different regions of Thailand.

Following is the text of the letter addressed to the prime Minister of Thailand, Mr. Chuan Leekpai, dated October 1999, against the large dams projects:

"The Hon. Mr. Chuan Leekpai
Prime Minister of Thailand
Dear Mr. Chuan,

We write to express our support for the 1850 people currently facing submergence at the Rasi Salai dam on the Mun River in North-Eastern Thailand. These people intend to stay in their village, Mae Mun Man Yuen Village #2, and face the rising waters, until their demands are met.

The Department of Energy Development and Promotion (DEDP) is currently filling the reservoir and the water level is at 116.8 metres above sea level. Already four houses and 80 per cent of the village's rice fields and vegetable gardens have been flooded. If the level reaches 117.5 metres, the village will be entirely submerged and people will drown.

We are writing to urge you to direct the DEDP to immediately stop filling the reservoir, and to give due consideration to the people's demands. The villagers are demanding that the government re-examine the impacts of the project, drain the reservoir, determine the exact number of people affected by the dam, pay compensation to all affected peoples, and correct the environmental problems caused by the dam. If the government refuses to pay compensation, the villagers demand that the dam be removed.

These people have been demonstrating for over six years, yet the government has refused to listen. On April 20 of this year, more than 1000 villagers affected by Rasi Salai dam occupied the dam site. Still the government did

not listen. Now 1,850 people are prepared to die in order to get the attention of the government. They have lost everything and they feel they have nothing more to lose.

Rasi Salai has been plagued by problems and deceit ever since it was first conceived. DEDP failed to release any information to the public prior to construction, and stated that they would only build a small rubber weir 4.5 meters high, not a concrete dam 9 meters high. More than 100 square kilometers were inundated, yet no Environmental Impact Assessment was conducted, contrary to the Environment Act. Even though the dam was completed in 1994, and DEDP is currently filling the reservoir, the irrigation system is not operational, so the dam is effectively useless.

The dam destroyed the fresh water swamp forest along the banks of the Mun River and blocked the migration of fish. The reservoir has been plagued by salination problems because it is located on top of a big salt dome. More than 3000 families have lost their farmland to the reservoir, and compensation was paid for private property only, not for lost customary land rights. After a long struggle General Chawalit's government paid compensation to 1,154 families, yet more than 1,800 families remain uncompensated.

Please act now to protect the lives of these people and respect their demands. Thank you for your consideration of these important matters.

Yours sincerely,

(Signatures)".

(WRM Bulletin Nº 28, November 1999).

Thailand: Free the Moon River!

Pak Moon dam in the Ubon Ratchathani Province of North-East Thailand has been strongly resisted by local villagers, who are suffering its negative effects of drinking water shortage, reduction in the number of available fish, health hazards, flooding of their lands and compulsory relocation.

In spite of the powerful adversaries they have to face, and that already ten years have passed since the year when the dam was set up, their struggle continues. Now the Pak Moon dam villagers are employing local traditions and customs to make their voices heard.

At the beginning of April 2000, more than 3,000 people gathered in their boats at the Pak Moon dam to perform the Sueb Chata Maenam, and to lobby authorities to let the Moon River run free again. Sueb Chata Maenam means “extending a river’s life”, and it is a modern adaptation of an old ceremony which pays homage to rivers, which are considered the life blood of Thai traditional society. Banners were unfurled reading “We Want to Return Freedom to our River,” and “Rivers are life, not death”. During the gathering, environmentalists and academics expressed their solidarity to the displaced people and pointed out the adverse effects of the so called development projects on local populations in Thailand. A petition will be submitted to the Electricity Generating Authority next month to halt operations and open the gates to let the river run free. Villagers expect that once the obstruction to fish migration is eliminated fish would return to the Moon River.

Globalization advances as a powerful driving force eroding biological and cultural diversity worldwide. Dam megaprojects are but one token of this voracious development. Every expression of cultural resistance – as this one by the Moon river’s villagers – constitute a step towards an alternative, more humane and sustainable world. (WRM Bulletin Nº 33, April 2000).

Thailand: For the authorities, reality at the Pak Mun dam does not exist

Dam megaprojects have been and are being strongly resisted in Thailand due to their adverse effects on local villagers’ livelihoods and lands. One paradigmatic example is that of the Pak Mun Dam, which has negatively affected 3,080 families in the area, by causing a drastic reduction in the number of fish in the Mun River, fresh drinking water shortage, an increase in the incidence of intestinal fluke, and a potential spread of schistosomiasis from snail vectors inhabiting the reservoir.

On May 16 2000 more than 1,000 protesting villagers and environmentalists occupied a lot next to the power generation plant at Pak Mun dam in Khong Chiam district. While one part of the group established a symbolic siege of the dam, another one navigated through the Mun River below the dam in 50 boats, and symbolically released a young Mekong giant catfish into the water. The action – which is part of the campaign “Let the Mun River run free” started in February 1999 to demand the river’s rehabilitation – is aimed to force the dam authorities of the Electricity Generating Authority of Thailand (EGAT) to open all eight spillways to restore the river to its original level and allow fish from the Mekong River to travel up and spawn in the Mun River

once again, given that the fish ladder, which dam authorities built to allow fish to travel up the river, was a total failure. Even if the activists have emphasized that their action is non-violent, senior provincial officials have called them belligerent, and EGAT spokespersons have accused them of trespassing state's property. But in fact the action took place in complete calm and even the policemen located near the site remained at a distance.

A report by the World Commission on Dams released last March coincides with the villagers' arguments in relation to the loss of up to 80% of fish population in the river. Other negative environmental and social impacts are identified as well: the affected population has never been informed of the potential effects of the project; part of the peasants' lands was flooded by the reservoir waters; natural rapids in the Chi-Mun basin have disappeared, which has affected tourism activities. Dr Tyson R Robert, a researcher at the US based Smithsonian Tropical Research Institute even considers that opening the dam gates in the rainy season – as demanded by villagers – is only a halfway solution, and advocates for the removal of the dam as the only real solution to the problem.

Nevertheless, the authorities would not listen to any arguments or accept any criticism. EGAT assistant governor Supin Panyamak denied that construction of the Pak Mun dam has affected fisheries in the river, and an EGAT-hired biologist said the fish migration from Mekong to the Mun River is just a myth. How can they explain the decrease in fish stock and variety then? Regarding the other proven effects no comments have been formulated. A committee – appointed by the interior minister – to find a solution to the problem concluded last week that opening the dam's gates would help the Mun River's environment, seriously damaged by the dam construction, to return to its original state. Nevertheless, the authorities have been reluctant to follow the committee's advice, opting instead for the establishment of another committee as a way to buy time.

Definitively the motto of Thai authorities determined to defend the dam seems to be: "If you don't want to see it, reality does not exist!" (WRM Bulletin Nº 35, June 2000).

Turkey: The Ilisu Dam and export credit agencies

Over the past 30 years, activists have fought a long battle for institutions such as the World Bank to adopt social and environmental policies. Howev-

er, these institutions are no longer the main source of public finance for 'development' projects in the South. Export Credit Agencies (ECAs) are now the largest public funders of large-scale infrastructure projects in southern countries, exceeding by far the infrastructure investments of multilateral development banks and bilateral aid agencies. Yet the majority of ECAs – with rare exceptions such as the US Export-Import Bank and the US Overseas Private Investment Corporation – have no human rights, environmental and development standards. This allows them to support the type of projects that even multilateral developments banks find problematic, including logging, mining, nuclear plants and oil drilling, as well as dams.

The controversial Ilisu dam project, currently planned for the Tigris River in the Kurdish region of Turkey, is a case in point. The ECAs of nine countries are considering support for this dam which would enable their corporations to do business with a torturing state. The dam's construction consortium is seeking export credits and investment insurance guarantees from the ECAs of Austria, Germany, Italy, Japan, Portugal, Sweden, Switzerland, the UK and the US. Since 1984, an armed conflict between the Kurdistan Workers Party (PKK) and the Turkish State has devastated the region where the Ilisu dam is to be built. Around three million people have been displaced, 3,000 villages partially or totally destroyed, and over 30,000 people killed.

Despite 1999's PKK decision to pursue a peaceful political solution to the as yet unresolved Kurdish question, many parts of the region remain a war zone to this day. Human rights abuses ranging from extra-judicial killings to torture, rape and disappearances are still common.

According to the latest estimates, the dam will affect up to 78,000 people, the majority of them Kurdish. Many local people see the project as part of a wider strategy of ethnically cleansing the area of Kurds. The resettlement plan and environmental impact assessment for the dam have yet to be published and there has been minimal consultation with those who will be moved. Conditions in the region make it extremely unlikely that resettlement could be carried out according to international standards. "We don't want this dam ... This is where I belong," one of the Kurdish people to be affected by the dam told a human rights delegation which visited the Ilisu area.

The dam will also inundate the 10,000-year-old town of Hasankeyf, home to historical treasures including cave churches, ornate mosques and Islamic tombs. Over the course of millennia, layers of civilisation have been inter-

woven over each other in the valley bed and surrounding caves. Destroying the Kurdish people's most important cultural sites, such as Hasankeyf, is seen by local people as a yet another tactic to deny the Kurds their ethnic identity.

Apart from the dam's devastating local impacts – on the environment, the people and their culture – another ugly consequence rears its head: water wars. The Ilisu dam is to straddle the Tigris River 65 kilometres upstream of the border with Iraq and Syria and threatens to disrupt much-needed water supplies to those countries.

Plans to build the Ilisu Dam were first mooted in 1954. Although pre-feasibility studies were completed in 1971 and the final design for the dam was approved in 1982, the project remained on the drawing board until the late 1990s. One reason for the delay lay in a lack of finance. The armed conflict left the Turkish government unable to fund the project alone and led to the World Bank signalling that it would be unwilling to finance infrastructure in the region. In 1996, the Turkish government offered Ilisu to the private sector as a Build-Operate-Transfer project, but no bidder could be found. A year later, Turkey's State Hydraulic Works (DSI) selected Swiss company Sulzer Hydro as the main contractor for the project, which retained responsibility for the electromechanical works, with ABB of Switzerland. Civil engineering works were subcontracted to a consortium led by UK construction company Balfour Beatty. Other companies in the consortium included Impregilo of Italy, Skanska of Sweden and three Turkish construction companies, Nurol, Kiska and Tekfen. The engineering consultants to the project are Binnie and Partners (now Binnie, Black and Veatch). As yet, no contracts have been signed between the DSI and any of the companies in the consortium. ABB's involvement in the dam ceased in March 2000, when it sold out its hydropower business to Alstom of France. In September 2000, the Ilisu consortium lost another of its original members, when Skanska announced its withdrawal from the project. The financial package for Ilisu will be arranged by the Union Bank of Switzerland (UBS). With approximately half of the construction costs being made up of imports from Western Europe and the USA, the companies in the consortium sought export credit guarantees to back their contracts. In November 1998, the Swiss export credit agency, Exportrisikogarantie (ERG), approved provisional export credit support of 470 million Swiss francs for the Ilisu contracts of Sulzer Hydro and ABB. Conditional approval has also been granted by the UK's Export Credit Guarantee Department (ECGD) for a US$200 million credit

for Balfour Beatty, whose US subsidiary has also obtained provisional consent to a further credit from the US Exim Bank. Italy's export credit agency SACE has similarly given approval for a US$152 million guarantee to Impregilo, although this has still to be confirmed by the Inter ministerial Committee on Economic Planning.

While Ilisu is an important issue on many grounds in its own right, it is also a rallying point for international campaigners, who see Ilisu as a test case for ECA reform. This is a critical year for the Ilisu dam project. The ECAs' decision is expected within the next few months. Without export credit support, it is unlikely that the dam could be built. (By: Kate Geary, WRM Bulletin Nº 42, January 2001).

Vietnam: Dam in Vietnam hits Cambodians

Vietnam's US$1 billion Yali Falls 720-megawatt hydroelectric dam, under construction for the past seven years – with funding from the governments of Russia and Ukraine – drains into the Se San river which runs through Cambodia to the Mekong. Before the dam-building began, no study was done of its environmental effect on Cambodia. A study carried out by the Fisheries Office, Ratanakiri Province, in co-operation with the Non-Timber Forest Products (NTFP) Project, an NGO working in Ratanakiri Province, shows that the dam is bringing death, disease and environmental devastation to Cambodia even before it is fully working.

Earlier last year the first reports began to emerge from Ratanakkiri that problems had developed with the Se San river, and that the source of these problems was upstream at Vietnam's new Yali Falls dam.

Cambodians along the Se San river told of sudden surges of water drowning 32 people, mostly children. In the single worst case three teenage girls were drowned trying to cross the river. Villagers spoke of their fishing boats and nets being swept away, livestock being drowned and crops inundated.

In addition, locals reported 952 deaths from disease since they perceived a change in water quality over the past four years. Stock losses have been reported in the thousands as well as significant numbers of wild animals dying after drinking water from the river.

According to the study carried out by the Fisheries Office and the NTFP Project, the water quality has deteriorated greatly since 1996. Surges of

water coming downstream are reddish in colour, muddy and have the foul odour of stagnant water.

The report could not quantify the health effects of the water quality, but noted that people living along the river reported a rapid decline in health once the changes became apparent. Locals complain of intense itchiness, lumps and infections on their skin, and eye irritation. They have also reported other health problems that have coincided with the sudden rises in water levels. These included stomach aches, diarrhea, respiratory problems, throat and nose irritation, dizziness, vomiting and coughing. Many reported family members dying one to five days after becoming ill.

Ratanakkiri province has some of the richest areas of wildlife in Cambodia, but these animals too have been seriously affected by the hydrological changes in the Se San as well as suffering from the effects of the water quality changes.

In Virachey National Park, on the northern side of the Se San river in Ta Veng and Ven Say districts, reptiles, mammals and birds have died or become ill at a greater than usual rate. People from many communities along the Se San have reported finding dead wildlife near their villages over the past few years. Many villagers believe that the wild animals had gone down to the Se San river to drink and then died shortly afterwards.

The changing water quality is also believed to have harmed fish stocks and habitat. The number of fish has declined noticeably, with some villagers putting fish stocks down by as much as 30 percent.

Meanwhile four years of irregular flooding have caused major food shortages to people in the area. Dry season crops which are planted along the banks of the Se San have been swept away by the surges of water following discharges from the dam. Locals now rely on wild potatoes and other tubers to sustain them. In addition, about 14 types of river plants that villagers used to collect to eat have been in serious decline over the past few years.

A two-day workshop attended by representatives of ethnic minority groups living on the Tonle Se San, local and international NGOs, and provincial officials, was held at the end of May 2000 to discuss the effect of the dam. The call for changing the river back was far more dominant than any request for cash compensation.

"If they want to give us compensation will they be able to feed us all our lives? It seems impossible, and what about our children and grandchildren? How are they going to survive? We want the old Se San back so we can fish and do other activities the same as before", said Lamas Voen from Phi village. (WRM Bulletin Nº 42, January 2001).

Vietnam: Na Hang dam threatens forests, people and wildlife

The Tonkin snub-nosed monkey (*Rhinopitecus avunculus*) is endemic to northern Vietnam and is one of the world's most endangered mammal species. Before a group was spotted in Na Hang district in 1992, it was considered extinct. Today, 260 of the monkeys are known to be living in northern Vietnam. Half of the population lives in the Na Hang Nature Reserve, which was created in 1994 specifically to protect the snub-nosed monkey.

The Na Hang Nature Reserve is in an area of dramatic mountainous limestone scenery. Forest within the nature reserve is extraordinarily rich in biodiversity. As well as providing a habitat for the snub-nosed monkey, it is home to the Francois' leaf monkey (*Trachypithecus francoisi*), lesser slow loris (*Nycticebus pigmeo*), stump tailed macaque (*Macaca arctoides*), pig tailed macaque (*Macaca leonina*), dhole (*Cuon alpinus*), Owston's palm civet (*Chrotogale owstoni*), clouded leopard (*Neofelis nebulosa*), Asiatic black bear (*Ursus thibetanus*), serow (*Capricornis sumatraensis*), a series of endangered birds and butterflies, an endangered tortoise and thirteen species of threatened plants. Four endangered fish species live in the Gam river, which forms the western boundary of the nature reserve.

Scott Wilson Asia Pacific, a consulting company, is leading a consortium carrying out a Protected Area Resource Conservation (PARC) project in Na Hang with funding from the Global Environment Facility. In addition, Allwetter Zoo and the Zoological Society for the Conservation of Species and Populations (both of Germany) are running the Tonkin Snub-nosed Monkey Conservation Project.

Unfortunately, the same Vietnamese government that set up the Na Hang Nature Reserve now seems determined to go ahead with plans for a US$420 million, 300 MW hydropower dam on the Gam river. The dam would flood part of the Na Hang nature Reserve and have devastating, long-term impacts on the forests, people and wildlife in and adjacent to the reserve.

In 1997, Electricity of Vietnam (EVN), the state electricity utility, produced a pre-feasibility study for a dam on the Gam River. Two years later, EVN produced terms of reference for a feasibility study of the dam which was due to be completed at the end of last year. Scott Wilson Asia Pacific wrote, in the inception report for its conservation project in Na Hang, that it proposed to "assist the Government of Vietnam by carrying out a preliminary environmental assessment of the River Gam Dam." Scott Wilson's consultants completed their preliminary environmental assessment in 2000. According to Vietnam's Electricity Master Plan Number Five, released in 2001, the Na Hang dam is planned to be commissioned in 2006. So far, the Vietnamese government has not secured international funding for the dam.

If built, the Na Hang dam would create a reservoir stretching 30 kilometres up the Gam river and flooding 57 square kilometres, including 220 hectares of the Na Hang nature reserve. Forty five villages would be flooded, and more than 11,000 people would be evicted to make way for the reservoir. Ethnic groups living in the area include Dao, Tay, Hoa and H'mong, as well as Kinh, the Vietnamese majority group. One woman, who would be evicted by the dam, told Scott Wilson's consultants, "We may be poor, but this is our home".

Although the area of the nature reserve which would be flooded is small, the habitat of the snub-nosed monkey is less than 1,000 hectares. The reservoir would be in an area adjacent to where the monkey is known to live. The snub-nosed monkey is very sensitive to disturbance and tends to stay at least one kilometre from roads, trails or villages.

Before the dam is built, the reservoir area would be logged. At present there is no road access to the area. Building the dam would involve building a new road, a major construction site, traffic, construction noise, dust, pollution, explosions, and up to 10,000 workers.

Construction workers will increase local demand for wildlife and other forest products. The bones, hands and feet of Tonkin snub-nosed monkeys are made into traditional medicines. With a stream of construction trucks driving in and out of the area, it would be almost impossible to stop illegal trading.

In May 1999, a group of environmental organisations, including IUCN, Allwetter Zoo and Primate Conservation Inc., wrote to Prime Minister Phan Van Khai and other Vietnamese officials. Their letters requested that a thor-

ough environmental impact assessment of the proposed dam should be carried out, in accordance with Vietnam's Law on Environment Protection and the Convention on Bio-diversity (to which Vietnam is a signatory). To date, no such study has been done. The Vietnamese government did not reply to the letters. (By: Chris Lang, WRM Bulletin Nº 55, February 2002).

Vietnam: Swedish involvement in dam that will hit Cambodians

Despite the problems caused by dams on the Se San river, Vietnam is building another dam, the Se San 3, about 20 kilometres downstream of the Yali Falls dam. The Vietnam News Agency reported that construction work started at the dam site on 15 June 2002. Communities downstream in Cambodia were not consulted before the Yali Falls dam was built and have not been consulted about the Se San 3 dam.

Two years ago, the Asian Development Bank planned to give a US$80 million loan for the Se San 3 dam, and offered a further US$1.8 million loan to conduct downstream impact studies. In October 2000, however, the Vietnamese government "formally advised ADB that it no longer requires ADB's assistance to proceed", according to the ADB's website. The Se San 3 dam is to be funded through US$140 million of loans from four Vietnamese banks and US $100 million from Russia for supplies, equipment and goods manufactured in Russia.

The Swedish consulting firm, SWECO, has played a key role in promoting the Se San 3 dam and is currently employed by Electricity of Vietnam to produce the technical design of the dam.

In November 1997, SWECO (together with Statkraft, the Norwegian state-owned electricity utility) produced a review of the Vietnamese government's Master Plan for hydropower development of the Se San River with funding from Sweden's international co-operation agency Sida. In their report, SWECO and Statkraft's consultants admitted that, "No study has yet been realized on the impacts of hydropower development related to the changing flow conditions in the lower part of the Se San River in Cambodia." Despite this, they recommended that the Se San 3 dam should be built.

In February 1999, SWECO completed a feasibility study on the Se San 3 dam, again with funding from Sida. In a critique of the study, Wayne White of Foresight Associates, pointed out that SWECO had overstated the annu-

al power production of the dam by more than 350 per cent. White explained that in the dry season the reduced outflow from the Yali Falls dam may mean that electricity production at Se San 3 will be even lower. SWECO's river flow figures were based on records from before the construction of the Yali Falls dam, although construction was well underway by 1999 and the dam has completely changed the flow of the river.

SWECO also underestimated the potential cost of the project by as much as 50 per cent. SWECO's feasibility study did not examine the social and environmental problems caused by the Yali Falls dam but stated, "the Se San 3 Hydropower project will not introduce any new type of environmental impact but only extend the prevailing impact further downstream."

Based on his analysis of SWECO's study, White concluded that the dam is not economically viable, that the study does not consider the impacts on communities and their environment downstream of the dam in Cambodia, and that the feasibility study does not form the basis for sound investment decision making. Perhaps not surprisingly, given that the company stood to win further lucrative contracts if the dam went ahead, SWECO concluded that the project was feasible.

Sten Palmer, SWECO International's representative in Hanoi, is reluctant to discuss the apparent conflict of interest when a consulting firm gives advice when they may benefit if the project goes ahead. He said, "Our engineers (give) good advice in the best interest of our Client without reflection whether this is advantageous for SWECO or not."

In late 2001, SWECO submitted a proposal to Electricity of Vietnam (EVN) to carry out a study of the hydrological impacts of the Yali Falls dam. The proposed study was intended to model the flow of the river under normal operating conditions of the Yali Falls dam and to study the effects of sudden releases of water from the dam. EVN did not respond to this proposal, according to Palmer.

In January 2002, SWECO won a US$700,000 contract to produce the design, construction drawings and tender documents for the dam. Asked whether SWECO has attempted to apply the World Commission on Dams guidelines and recommendations to the Se San 3 dam, Palmer replied that it is "not at all applicable on the Se San 3 Project, since SWECO's assignment only includes advisory services as sub-consultant on details for the technological equipment".

Villagers in Cambodia are outraged that Vietnam is building another dam on the Se San. In June, Culture for Environment and Preservation Association, a Cambodian NGO, organised a meeting attended by representatives from 30 villages on the Se San River in Cambodia. The Phnom Penh Post reported that a local village woman said at the meeting, "What more can they do to us? Nearly everything has already been destroyed. If they build another dam there will be even more destruction. More people will die." (By: Chris Lang, WRM Bulletin Nº 60, July 2002).

Vietnam: Resettlement to make way for massive Son La dam

In Vietnam's mountainous north-west, the Son La People's Committee has moved the first 52 people of a total of 91,000 that will be forcibly evicted to make way for the massive Son La dam. In March 2003, the authorities moved eight families of indigenous White Thai people to a new site, 200 kilometres from their homes in Muong La district. At least 13 indigenous groups live in the 275 square kilometres that would be flooded by the reservoir behind the dam.

The National Assembly gave the go-ahead for the 2,400 MW Son La dam in December 2002. The dam, which is planned to be built 200 kilometres upstream of the existing Hoa Binh dam on the Da River, would be Vietnam's largest dam and would require the biggest eviction of people in the country's history.

The project's cost is estimated at US$2.5 billion, of which the Vietnamese government is looking for at least US$750 million from international sources. Electricity of Vietnam hopes to start construction in 2005 and to start generating electricity in 2012.

In addition to the 3,000 hectares of forest that the reservoir would drown, the dam would have a major impact on the forests of north-western Vietnam. Most of the rice paddies in Lau Chau province would be flooded by the reservoir. To provide land for farms and villages for the people evicted from the Da River valley, forest on the hillsides around the reservoir will have to be cleared. Building the dam will require a large amount of timber. During the construction of the downstream Hoa Binh dam, 70 per cent of state timber production from the River Da watershed went to the dam construction site.

The Son La project has been intensely debated in Vietnam's National Assembly. In May 2000, the National Assembly asked for more information on relocation and compensation plans and for feasibility studies for a scaled-down version of the dam.

However, project preparation continued. In August 2001, Vietnamese government officials approved US$660 million for resettlement. On a visit to Lai Chau province, Deputy Prime Minister Nguyen Cong Tan told the provincial authorities "to start resettling residents so as to finish relocation work by 2005."

In March 2002, the National Assembly postponed a decision on whether to go ahead with the dam until the end of the year. Mai Thuc Lan, the deputy chairman of the National Assembly, told Vietnamese newspaper Tuoi Tre, "The preparation for the Son La hydropower project has not been done carefully."

The proposed dam has been studied for more than 30 years. Several international consulting firms have benefited from contracts to produce studies of the Son La dam, including the Moscow Institute of Hydroelectric and Industry, Electricity and Power Distribution Company (Japan), Designing Research and Production Shareholding Company (Moscow) and SWECO (Sweden).

Although World Bank officials say that the Bank will not fund the Son La project, it has funded studies on the dam. A World Bank Staff Appraisal Report dated April 1995, states that the Bank funded "engineering studies for the Son La hydropower project". Four years later, a World Bank study on the energy sector in Vietnam argued that from an economic perspective, "The Son La hydro plant appears promising."

In 1999, a joint venture of SWECO and Harza, a US engineering firm, won a US$1.3 million contract from the Vietnamese government to upgrade the plans to build the Son La dam. Montgomery Watson Harza (as Harza is known since its merger in 2001 with water company Montgomery Watson) is reported to be chasing the project management contract for construction of the dam. Montgomery Watson Harza is also part of the joint venture with Electricité de France that is hoping to build the Nam Theun 2 dam in Laos.

In 2001, an executive at Montgomery Watson Harza, perhaps frustrated at the National Assembly's lengthy decision making process on Son La, told

Engineering News Record that Vietnam was “the worst of all worlds.” He added, “They’ll have to ease up in centralisation of control.”

One of the biggest concerns about the Son La dam is the fact that it would be located in an earthquake-prone zone. In February and March 2001, earthquakes rocked Lai Chau and Son La provinces. No one was killed in the earthquakes, but the cost of the damage to buildings and roads was estimated at around US$14 million.

The Hoa Binh dam, downstream of the proposed Son La dam site on the River Da, was built with financial aid and technical assistance from the Soviet Union. Soviet experts warned that major floods could cause the Hoa Binh dam to collapse and recommended building a second dam upstream.

The risks are huge. If the Son La dam were to collapse in an earthquake, it would send a huge flood wave down the River Da, threatening first the Hoa Binh dam and then Hanoi, some 300 kilometres away.

Dao Van Hung, Director General of Electricity of Vietnam, appears unconcerned about the potential risks of building the dam in an earthquake zone. Voice of Vietnam radio reported that he told the National Assembly in November 2002, “Currently, there are more than 300 hydro-power projects in the world whose dams are between 100 to 350 metres high. The Son La hydro-power plant’s dam is only 115 metres high. As a result, I think Vietnamese workers and scientists are fully capable and experienced to calculate the volume of construction materials and appropriate structure for the dam to ensure maximum safety.” (By: Chris Lang, WRM Bulletin No. 69, April 2003).

CENTRAL AMERICA

Belize: Pristine forests threatened by dam project

With 22,960 square kilometres and 220,000 inhabitants Belize is the smallest and less populated country in Central America. 83% of its territory is covered by forests, most of them in a pristine state, and 40% of the country is now protected as parks and reserves. As in many other Southern countries dam megaprojects are a major problem for Belize’s forests and people.

The Chalillo Dam projected in Belize would flood 1,100 hectares (2,718 acres) of primary forest, engulfing the valleys of the Macal and Raspaculo rivers in the Central Maya mountains, near the Guatemalan border. The works would destroy this fragile ecosystem that is a site very rich in bio-diversity. The dam's flood waters would also bury archaeological sites of the Maya civilization dating from the 5th century.

Opponents to the project argue that there are alternative answers to the country's energy needs, such as better energy collaboration policies with neighbouring Mexico. A 1992 Environmental Impact Assessment produced by Agra CI Power Ltd., estimated that "over 90 percent of the riparian habitats would be destroyed," if the dam were built. The report also predicted that serious environmental damage would occur downstream from the proposed dam site, impacting the lives of rural villages which depend on the river for sustenance. The assessment also found that the dam could kill fish by generating sulphide gases as vegetation rotted in the reservoir, and by changing seasonal river flows. Ecotourism, which is one of the largest contributors to Belize's GNP will also be affected by the project. (WRM Bulletin Nº 22, April 1999).

Belize: Canadian company to dam the Macal River

The Belize National Environmental Appraisal Committee (NEAC) announced in November 2001 that the government has granted environmental clearance for the construction of a proposed hydro-scheme slated for an undisturbed river valley within the Central Maya Mountains near the Guatemalan border, conditional upon the development of an Environmental Compliance Plan (ECP), which will incorporate the mitigation measures identified in the environmental impact assessment, along with others recommended during the evaluation process. Belize Electricity, Ltd (with Canadian Fortis Inc. holding a majority stake) is behind the project, with governmental support.

But huge dams are no longer being constructed in most industrialised nations around the world, despite their increasing energy needs. No wonder. The World Commission on Dams issued a report (November 2000) that has brought international attention to the numerous downfalls of dams, pointing out that the mitigation factors have been largely unsuccessful. Nor do dams provide flood control. Conversely, they increase devastation through the emission of "greenhouse gases" – as equally detrimental as the burning of fossil fuels –, the increase of disease in tropical countries, and the waste of precious freshwater resources.

The area known as the Upper Macal and Raspaculo River valley represents a cradle of biological productivity. It is the last known breeding area for the endangered Scarlet Macaw (*Ara macao cyanoptera),* with less than 250 birds remaining in the country, and provides a sanctuary for other endangered species such as the Central American tapir (*Tapirus bairdii*), southern river otter (*Lutra longicaudus*), and Morelet's crocodile, (*Crocodylus moreleti*). This area is also important for migratory bird populations.

A 1992 Environmental Impact Assessment produced by Agra CI Power Ltd., estimated that "over 90 percent of riparian (riverine) habitat would be destroyed," if the dam were built. The report, by a subsidiary of Agra, Inc., a Canadian based international engineering, construction and technology company, predicted that serious environmental damage would occur down river from the proposed dam site, impacting the lives of people who depend on the river for sustenance. The Agra assessment found that the dam could kill fish by generating sulphide gases as vegetation rotted in the reservoir, and by changing seasonal river flows.

"We are gambling with our natural resources, treasures that are not duplicated anywhere else in the region," said biologist Sharon Matola, director of the Belize Zoo and a vocal opponent of the project.

The Macal River feeds the Belize River, which empties into the Caribbean Sea. Off shore stands the largest barrier reef in the Western hemisphere, a popular destination for tourists from around the globe. Tourism is currently the largest contributor to the country's Gross National Product. "It took millions of years of evolution for this habitat to reach its current unique state. It is unacceptable to trade that for a dam, which under the best of circumstances, would provide electricity for perhaps 50 years. This is environmental crime of the highest degree," warned Matola.

Dam proponents continue to stress that the dam is needed to "alleviate poverty" and to "ensure independence from Mexico". However, as the old story goes, people do not benefit from this kind of mega-projects fostered by corporate interests. The only recipe to "alleviate poverty" is sustainable development. (WRM Bulletin Nº 54, January 2002).

Belize: Another turn of the screw on the Chalillo dam project

In November 2001, a Belizean court had ruled in favour of the construction of a hydro-electric dam on the upper Macal river by Belize Electricity Limited

(BEL), the majority of which is owned by Fortis, Inc. of St. John's, Newfoundland, Canada. The Belizean government has privatised its electricity industry, just keeping a minority share of BEL. Fortis Inc. is the owner of both the energy distribution company in Belize (Belize Electricity Limited, BEL) and the largest energy supplier in the country (Belize Electricity Company, BECOL). Between Fortis-BEL and Fortis-BECOL, Fortis companies generate 48% of the electricity sold in Belize, with the rest coming from a connection to the power grid in Mexico.

Fortis already operates another dam in Belize, the Mollejón. When it opened 10 years ago the company claimed it would supply more than enough electricity to meet the growing demands of the 250,000-strong Belizean population without the need for any further construction. A recently completed study of the Macal River shows that the Mollejón dam has probably caused eutrophication on the river. Villagers downstream from the dam have experienced water quality problems and skin rashes since the dam was built. The effects of a second upstream dam could exacerbate these problems.

Local people see no benefit from the mega-project but rather harmful impacts on their national heritage and hotspots, which has led to mounting opposition. Local conservationists have been working together with international groups including the Sierra Club of Canada, Probe International, (Newfoundland Group) and the Natural Resources Defense Council (NRDC) to protect the Macal River Valley. Belizeans also fear that the Chalillo dam would raise energy rates.

Fortis commissioned an environmental impact study from Amec, the British construction group. The hired scientists from the Natural History Museum in London concluded that much more work was needed in the region before the dam could proceed, but their recommendations were buried in an annexe of the final 1,500-page report. Colonel Alastair Rogers, a former Royal Marine and co-author of the assessment, now says the dam could be a disaster for the area. "Fortis claims that the bedrock of the area is granite. We believe that the presence of a large amount of porous rock such as limestone could render the dam useless. The forest would be flooded, but the water would drain away. You'd be left with all the negatives and none of the positives."

Those opposed to the new dam want the government to support the use of alternative, sustainable energy, such as the use of bagasse, a byproduct of

the sugar manufacturing process which was once a major industry in Belize, or to buy in power from neighbouring countries, which could cost less over the long term.

The Belize Alliance of Conservation Non-Governmental Organisations (BACONGO) has challenged the project in the court. On March 31, Belize's Appeals court finally ruled denying BACONGO's challenge. The organisation has announced that it will appeal to the Privy Council in London, the highest court of appeal for cases in the British Commonwealth. BACONGO has also written to the Public Utility Commission of Belize to challenge the illegal status of Fortis' Belizian subsidiary, BECOL, which has been operating the existing Mollejón dam on the Macal River without a licence. All electric generators in Belize above 75 kilowatt capacity (BECOL's dam is about 3000 times bigger) are required to have a licence. According to Lois Young, the Belizean lawyer for BACONGO, this means that the company was breaking the law and breaking the terms of the original sale contract, with the knowledge of the Belize government. BACONGO also pointed out that the PUC cannot even consider the current application of Fortis/BECOL for permission to build Chalillo dam until BECOL obtains a licence. Under Belizean law, the PUC must fully consider economic, environmental, and social factors and should provide an opportunity for a public hearing. (WRM Bulletin Nº 69, April 2003).

Costa Rica: Indigenous territory threatened by hydroelectric dam

Since the 1970's, the Costa Rican government has been carrying out studies to implement the Boruca Hydroelectric Project on the river Térraba which, with a 1,500 megawatt generating capacity, would be the largest project of the type in Central America.

If the 260 metre high dam were built, it would mean the flooding of 25,000 hectares of lands, among which the entire Rey Curré Reserve and parts of the Térraba and Boruca territories. At the same time, the Ujarrás, Salitre and Cabagra reserves would be also affected by dam-related infrastructures such as roads. For both the indigenous and peasant communities living in the area, the building of the dam would imply their relocation to other parts of the country.

Until now, the Costa Rican Energy Institute has provided the affected communities with very superficial information, preventing their access to de-

tailed written information about the true impacts that the project would have on them. Informed consent to the project is thus impossible.

With such attitude, the government is infringing the Indigenous Law (No. 6172 of 29 November 1977) and Article 16 of the Convention 169 of the International Labour Organization, concerning Indigenous and Tribal Peoples, ratified by Costa Rica in 1992 (Law No. 7316, 3 November 1992), which states: "the peoples concerned shall not be removed from the lands which they occupy. Where the relocation of these peoples is considered necessary as an exceptional measure, such relocation shall take place only with their free and informed consent. Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned." Additionally, the government would be also violating the Ramsar Convention on Wetlands, because the project would affect the famous Térraba-Sierpe Wetland, the largest Ramsar Site of the country's Pacific coast and one of the major mangrove systems of Central America.

What's the reason for so many social and environmental impacts? Contrary to the usual discourse of improving people's lives by providing them with electric energy, in this case the project is aimed – in words of President Miguel Angel Rodríguez – at providing Mexico and the United States with cheap energy (*La Extra*, 4 April 2001). At the same time, the whole project would generate large benefits to constructing and energy transnational companies, because the Costa Rican Energy Institute would seek "strategic alliances with large foreign companies" to finance the project (*La Nación*, May 21 2000).

In March this year, local people signed a "Manifesto of the indigenous communities affected by the Eventual Construction of the Boruca Hydroelectric Project, which ended with the following words: "Our history, our identity and our view of the world have since time immemorial been intimately linked to the earth, the rivers and every expression of nature in our territories. To abandon our territories for us implies death, the end of our history" and we declare:

"- Our total opposition to the Boruca Hydroelectric Project
- We call on national and international solidarity

- We urge international financial institutions to abstain from financing this project."

(WRM Bulletin Nº 46, May 2001).

Costa Rica: Opposition to hydroelectric dam

Some years ago, geologists from the Aluminium Company of America-ALCOA (of which Mr. Paul O'Neill, current Secretary of the Treasury of the USA, was chairman and CEO from 1987 to 1999) found that important bauxite deposits were present in the subsoil of the El General Valley in Costa Rica. In 1970, the country's Legislative Assembly passed law No. 4562, relative to an industrial contract whereby ALCOA had the right to exploit, for 25 years and with a possible 15 year extension, a volume of up to 120 million tons of bauxite and the obligation to install an aluminium refinery in the same Canton.

Aluminium foundries require a great quantity of low-cost electric energy. The project was feasible provided a hydroelectric dam were to be built on the Rio Grande de Térraba. For this purpose the river would be dammed to form an artificial lake over an area of 250 square kilometres at its highest level.

This "Boruca" dam triggered off a series of movements of Costa Rican citizens against what they considered to be the violation of and putting at serious risk enormous extensions of the national territory.

On a national level, several protests were made that obliged ALCOA to desist in their project. But the Costa Rican Electricity Institute (ICE) has refurbished the objectives of the hydroelectric mega-project. Yesterday, it was to provide electricity to Costa Rica and some Central American countries, today it is to supply for Mexican and some South American needs. In the event that it were to be implemented, it would be the largest hydroelectric project in Central America, with a production capacity of 1,500 megawatts, more than all the hydroelectric projects in Costa Rica together.

The mega-project – requiring a multimillionaire investment of 3 billion dollars financed by Canadian capital – involves the flooding of 25,000 hectares of land belonging to the indigenous territories of Boruca, Cabagra, Rey Curré, Salitre, Térraba and Ujarrás among others. As a result, thousands of members of these communities would have to be moved to other parts of the country, adding to the long list of peoples displaced by hydroelectric

projects throughout the world. Seven indigenous reserves would also be affected, covering 20% of the total area of the basin, in addition to archaeological deposits and important pre-Columbian settlements.

The Boruca Project will accelerate deterioration of soils, vegetation and the hydraulic regime, due to the promotion it will give to the building of highways and roads on lands that are not apt for agriculture in general and due to the displacement of the population in the reservoir depression, the stimulation of migration towards the zone, speculation over private land and national reserves and destructive exploitation of forests by logging companies.

For almost 30 years, the Costa Rican Electricity Institute (ICE) has had a camp within the lands of the Brunca indigenous people, in what is presently the indigenous territory of Rey Curré. Over all this time, the Brunca have been mere witnesses of the movements in this place, but now they are talking. And they say that ICE acts in bad faith when it states that they agree to abandon their lands. And that it certainly must have used the attendance sheets that they signed in good faith at the meetings they were invited to by representatives of the institution, to prove that there was majority agreement by the indigenous peoples to leave these lands.

The Brunca say “Did the emissaries of power think that the ‘docile Indians’ would be willing to leave the bones of our ancestors, our plantations and our humble homes? They underestimated us because they did not know us (and they still do not know us) because the god that inspires them has made them overbearing. The spirit of all our ancestors, the mountains and the river, the air and the landscape have no price. They have not realised yet that there are things that money and manipulation cannot buy. But they live and breathe for the god of money, they cannot understand. That is why they treat us this way.” And for this reason, the Brunca defend their right to “not answer what they want to hear...” (WRM Bulletin Nº 52, November 2001).

Guatemala: A dam and the massacre of 400 people

Forced resettlement of local people living in the area where dams are built usually results in human rights abuses. One of the most terrible examples is that of the Chixoy hydroelectric dam, which was built during the military dictatorship in Guatemala. The project resulted in the massacre of more than 400 Maya Achi people, mostly from the community of Río Negro, one of the villages to be flooded by the dam.

The violence against the indigenous people began in 1980, when military police came to Río Negro and shot seven people. In July that year, two representatives from the village agreed to go to a meeting requested by the National Institute for Electrification (INDE). They took with them the village's only documentation of resettlement and cash payment agreements. The mutilated bodies of the two men were found a week later. The resettlement documents were never recovered.

In February 1982, 73 men and women were ordered by the local military commander to report to Xoxoc, a village upstream from the reservoir which had a history of land conflicts and hostility with Río Negro. Only one woman returned to Río Negro. The rest were raped, tortured, then murdered by the Xoxoc Civil Defense Patrol, one of the notorious paramilitary units used by the state as death squads.

But the worse was yet to come. On 13th March, the military rounded up all the women and children and marched them to a hill above the village and proceeded to torture and murder 70 women and 107 children. Witness for Peace produced in 1995 a report based on interviews with survivors, where the terrible way in which these people were murdered is described in detail. Two months later a further 82 people were murdered.

Responsibility over this tragedy is shared by all those institutions and companies which, being aware of the brutality of the Guatemalan regime, collaborated in building this 300 megawatts dam. The Inter American Development Bank and the World Bank provided more than 300 million dollars in loans. The Italian government provided bilateral aid and export-credit guarantees. The consortium that planned, designed and supervised construction for the dam included Lahmeyer International (Germany), Motor Columbus (Switzerland) and International Engineering Company (USA). Gogefar (Italy) and Swissboring (Switzerland) were the companies that actually built the dam. Hochtief (Germany) was the contractor for the repair work on the tunnels. In spite of having been instrumental in building a dam which resulted in this tragedy, none of the above are willing to admit their responsibility.

After an internal investigation, the World Bank acknowledged that a massacre had occurred, but admitted no responsibility. The companies involved in Chixoy have always denied knowledge of the massacres, but local eyewitnesses say that a Cogefar lorry was used by the army during the massacres and that kidnapped women were taken to the dam building site, from

where they were carried away by helicopter. So many must have known. But even if they didn't notice anything: didn't they find strange that 400 people suddenly disappeared from the dam site?

The survivors of Río Negro have sought redress in national and international arenas. Material and spiritual reparations are still awaited by those who survived, but no compensation is possible for the cultural losses, violence, intimidation, loss of livelihood and psychological damage suffered by the affected communities. (WRM Bulletin Nº 42, January 2001).

Honduras: Peasants demand Government to halt hydroelectric project

An alliance of Honduran peasants is asking the Government to halt the construction of a hydroelectric dam being built by the Energisa company in the area of Gualaco, Olancho, some 240 kilometres to the north-east of Tegucigalpa. The inhabitants affected by the project consider that it is causing damage to the environment and that the construction of the dam will prevent water being supplied to thousands of inhabitants, in addition to the fact that they may be obliged to leave their lands.

They are also asking the Government to investigate and bring to justice the building company's employees who, according to witnesses of the incident, killed Carlos Roberto Flores, an environmental leader and opponent to the construction of the hydroelectric dam on the Babilonia river falls. Together with the National Co-ordination Against Impunity (CONACIM) they also called on the authorities to annul the warrant for the arrest of their community leaders.

Energisa has carried out environmental impact assessments but the local communities allege that the assessments submitted by the company to obtain the licence are false. According to information given at a press conference, the project is located in the Sierra de Agalta National Park buffer zone, declared protected zone in July 1987. This project for the generation of electric energy will produce 4,400 kilowatts, to be sold to the National Electric Energy Company (ENEE), as approved by the National Congress the year before. The plant will be fed by water from the Babilonia river. The councils of the villages and hamlets in the sector, together with the municipal authorities are opposed to the project as they are convinced that it will alter the productive heritage of the zone because the land will be affected by the dam.

They also consider that the falls that give beauty and identity to the site will disappear and the river's aquatic life will be impoverished. The parish priest of Santa María del Real, Osmín Flores, believes that the project lacks a really serious and scientific environmental impact assessment, according to studies carried out by the National Autonomous University of Honduras (UNAH), which warn that "there are various geological faults that could endanger the communities, once the project has been implemented." They conclude that "Energisa intends to build the dam apparently in violation of national and municipal legislation and omitting important data in the Environmental Impact Assessment."

In spite of this report, it has been affirmed that the Secretary for Natural Resources, Xiomara Gómez has granted the environmental licence and later signed, with the president of the company, Héctor Julián Borjas, the contract for mitigation measures. On his part, Juan Ramón Zúniga, a coffee planter from the area, reported that they have already received various threats from the company. "Last January, the military arrived and arrested us, and even sentenced three of us, who had done nothing. We know this is persecution and intimidation by Energisa. The judge at Catacamas has sentenced community leaders and coffee planter families to prison for having tried to prevent Energisa employees from entering their lands without prior consent."

Among other cases of abuse, prior to the murder of Carlos Roberto Flores, mention can be made of that of the parish priest of Gualaco, Fredy Cornelio Benítez, co-ordinator of the local forest forum in the zone, who was stabbed in the back last March as a consequence of his opposition to the progress of the project. The Mayor, Rafael de Jesús Ulloa has also received various threats and has been pursued by an unidentified vehicle.

The Committee of Relatives of those Detained and Disappeared (COFADEH) reported the illegal detention by the anti-riot police, of 1500 indigenous people from various communities that were marching towards the capital to support the struggle of the inhabitants of Gualaco. The inhabitants of Gualaco were also evicted with tear-gas bombs, water hoses and beatings, leaving a total of some thirty people seriously injured. To this should be added the threats received by the US citizen, Daniel Graham, for taking photos of the serious events taking place in the zone.

To the initial concern over the impacts that the dam might cause on the environment and its people, are added repression and the threats of death

for those who continue to oppose the project. The Government of Honduras must take immediate action to protect all those people who are at risk, and also carry out an independent and exhaustive investigation on the death of Carlos Roberto Flores and the threats that the local communities and their leaders have repeatedly received. (WRM Bulletin Nº 48, July 2001).

SOUTH AMERICA

Argentina: Environmental justice in action

The Court of Río Negro province in Argentina accepted a petition signed by citizen Jorge Ronco against EDERSA (Empresa de Energía Río Negro S.A.) and DPA (Provincial Department of Waters) for the environmental damages caused by the hydroelectric project undertaken by both companies in El Bolsón area, in the Patagonia region.

The project, in which US$ 10 millions were to be invested, started in 1993 and was presented as a development opportunity for the region. Nevertheless, it ignored the requirements of Law No. 2342/89 and no environmental impact assessment was carried out. It was then when Mr. Ronco, inhabitant of the area, decided to sue the companies. A group of academics, headed by Prof. Luis Sancholuz of the Bariloche University Regional Centre of the Comahue National University evaluated the damages caused by the works.

The Court established that an ecological crime has been committed and that the environmental damage has to be reverted. The rivers' and creeks' margins will now have to be reforested with native species to restore the ecosystem.

It is the first time that offenders of the Environmental Law are taken to court in Río Negro, and this is certainly a good sigh for the future. (WRM Bulletin Nº 20, February 1999).

Bolivia: Hydroelectric dam project questioned

The basin of the Beni River in western Bolivia, which comprises part of the Andean region and part of the Amazon forests, is being threatened by a hydroelectric megaproject, that is generating grave concern among local communities, environmental NGOs and academic circles.

The affected region occupies an area of 68.000 square kilometres, with altitudes ranging from 6,500 metres to 200 metres at “El Bala”, where the river becomes very narrow. This has been the place chosen to set up this dam project. As a result of the topographic and hydrographic features of the region in relation to its potential for the generation of hydroelectric energy, the idea of such a project has been present for over 50 years. In 1998 it received new support by it being declared a “national priority” and now the elaboration of the reference terms for the prefeasibility study has been put out to tender. However, the area is not a “void space” as government planifiers view it. On the contrary, it is populated by a very rich flora and fauna which extends over its altitudinal gradient, which allows the existence of different forest ecosystem types, like tropical dry forests, tropical rainforests and subandean rainforests. Additionally, five protected areas are included in the basin. Two of them – the Madidi National Park and the Pilón Lajas Biosphere Reserve and Indigenous Territory – are located in the area of influence of the dam. More importantly, the threatened area is inhabited by some 1,000 people, most of them belonging to traditional Amazonic cultures, as the Chimanes, the Tacanas and the Mosetenes. For decades these peoples have been subject to an acculturation process caused by the advance of the agricultural frontier and deforestation in their territories.

A study recently published by the NGO Foro Boliviano sobre Medio Ambiente y Desarrollo (FOBOMADE) reveals the negative environmental, social and economic impacts that the project would entail in case it is implemented. The opening of new roads will mean – as has happened in the Brazilian Amazon – the penetration by loggers, poachers and colonizers. The filling of the reservoir will flood an area of 2,505 km2, entirely covered by primary forests. Vegetation will be completely lost and animals will run away. The hydrological, nutrient and sediment fluxes will be completely altered, and the consequences of this phenomenon will affect peasants’ villages and fields downstream. It is feared that the low quality of water coming out of the dam – which will be highly eutrophied – will turn it useless. Additionally, even though from the engineering point of view the dam could work to avoid the effects of rises in the river’s level on the populations of Rurrenabaque and San Buenaventura, the latest research concerning river conservation and management indicate – on the contrary – that maintaining natural flood areas is essential to obtain benefits from the rivers’ dynamics. From the economic point of view the project is also non-viable, since the expected sale of energy to Brazil will not compensate the expenses required to build the dam. It is to be underscored that to implement the project the Bolivian state will increase its external debt even more.

On July 21st and 22nd 2000 a Seminar-Workshop, organized by Foro Paceño, was held in the village of Rurrebaque in order to analyze this issue. Once the studies on the expected impacts of the project, as well as previous similar cases in Colombia and Brazil were presented, the participants – local people, representatives of indigenous and peasant communities, staff in charge of the management of protected areas, organizations and institutions of the region, and some local authorities – expressed their critical viewpoint on the El Bala project. At the same time, they are demanding that the expected impacts as well as other alternatives for the sustainable development of the region are considered before the prefeasibility study is undertaken. (WRM Bulletin Nº 38, September 2000).

Brazil: Support for Extractive Reserve on islands of Tucuruí Dam reservoir

For centuries, the inhabitants of the Amazon lived in balance with nature. The groups had small areas of land, the idea of property was unknown to them, and they were able to find everything they needed to live well. This style of life was destroyed by the arrival of the first Europeans, and ever since the exploitation of nature and its inhabitants has caused the extinction of species, loss of livelihoods and cultures, and more widespread poverty.

Amongst the many ways through which this exploitation took place, one of them was the construction of hydroelectric dams. Tucuruí Dam, the largest ever constructed in a tropical rainforest, flooded over 2,400 sq. km. of the Amazon. More than 30,000 people were expelled from their homes, including various indigenous groups. Tens of thousands of more living downstream lost their livelihood when fish stocks were depleted as a consequence of the dam. Many of these families moved to the reservoir area, occupying “islands” of the rainforest in Tucuruí Lake.

Now they are trying to create an Extractive Reserve which constitutes a new form of land designation in Brazil, a legacy of Chico Mendes’ work which combines environmental protection with sustainable resource management by local populations. The Tucuruí Extractive Reserve would be the first established in an environmentally devastated area, and would have as its goal instituting resource management programmes capable of prolonging the viability of dwindling fish stocks in the lake, in the process guaranteeing the health and well-being of fishing and extractivist populations in the reservoir area.

The movement for the creation of an Extractive Reserve in the islands of Tucuruí Dam reservoir marks a return to the original history of the region, seeking a form of development that recognizes the value of the way of life of its people, and the preservation of natural resources. There are an estimated 1,100 islands in Tucuruí reservoir, where about 6,500 people are living. The islands were expropriation by the Federal Government when Tucuruí Dam was built, and are considered to be an area of permanent environmental preservation.

The residents live by artisanal fishing, and the collection and extraction of forest products; they have no schools, medical assistance, or even electric energy. Since 1992 the movement has fought for the creation of the Reserve, but politics has meant the proposal has moved forward slowly, with many obstacles placed in the way.

Currently, all the necessary actions for the creation of the Reserve have been concluded, and the final decree authorizing the Reserve awaits the signature of the Brazilian President, Mr. Fernando Henrique Cardoso. The Amazon and its people thank you for your support! (WRM Bulletin Nº 23, May 1999).

Brazil: Interamerican Development Bank promotes destruction of Upper Tocantins River

The Tocantins River is the main river in the hydrological system of the "cerrado" (savanna) and eastern Amazon region of Brazil. The Brazilian government is planning the construction of eight hydroelectric dams on the Tocantins and Araguaia Rivers. One of them is Cana Brava Dam, located 250 km north of Brasilia, in the state of Goiás, which together with the already operational Tucuruí Dam and the Serra da Mesa Dam will form a nearly continuous 2,000 km staircase of reservoirs.

The Inter-American Development Bank (IDB) is the agency involved in the provision of financial support to the project by granting a US$ 150 million loan so that Tractebel Brasil Ltda. – a subsidiary of Tractebel Belgium – can build the dam. The Bank has already approved a loan for the construction of the North-South electricity transmission line, which runs along the Tocantins River, that will link the proposed dams network. If completed, this complex will severely affect the Tocantins and Araguaia Rivers, their associated ecosystems and the riverine populations. This bio-diversity and resource-rich

region – comprising part of the "cerrado" and the transition forests of the Amazon – is already menaced by the high scale impacts to be provoked by the construction of the Araguaia-Tocantins Hidrovia, an industrial waterway planned for soy bean transport.

The Environmental and Social Impact Brief for the Cana Brava project performed by the IDB to justify its loan has serious omissions and misstatements of fact. Its main assumption – that hydroelectric power is the most desired electricity generation alternative for the region – is baseless, since the energy to be generated will be transmitted to the national electricity grid, principally to industrial cities in South-Central Brazil. Additionally the real financial, environmental and social costs of the project were not evaluated.

The IDB's study ignores the fact that the "cerrado" is one of the richest sites in bio-diversity in the world, by considering that endangered species were not identified during the surveys, and that the Upper Tocantins is a system less productive when compared with the middle and lower reaches. It is not even clear whether the survey refers only to the area where the reservoir would be formed, or also to the broader area which will suffer the impacts of the dam. Its considerations regarding the social impacts of the project are also to be questioned. Whereas the report considers that "there are no major indigenous populations present in the area of direct influence", it has been demonstrated by the FUNAI (National Indigenous Foundation of Brazil) and CIMI (Missionary Indigenist Council) that the area is inhabited by the Avá-Canoeiro indigenous people, a highly threatened ethnic group, known as the lords of the High Tocantins River and its entire valley. It is to be underscored that the Avá-Canoeiro have already suffered the loss of 10% of the area of their reserve because of the Serra da Mesa Dam. Additionally, an important community of "quilombos" – descendants of escaped black slaves who manage their land co-operatively – live in the area affected by the project. The IDB's report does not mention them.

The impact of the project on the local rural population is minimized, since the number of families affected by the dam is far greater than the 110 indicated in the report.

The arrogant attitude of both Tractebel and the IDB have generated a conflictive atmosphere in the region. Local dwellers have undertaken direct actions to press the company to discuss relevant issues before the construction of the dam proceeds. For example, on January 16th 2000, 500 dam-

affected people occupied the Cana Brava worksite, and on March 14th, marches and protests took place in Minaçu city. In March 2000 the coalition International Rivers Network (IRN) addressed the IDB President Mr. Enrique Iglesias to express its concern regarding the way in which the Bank was assessing the proposed loan, and to suggest some recommendations in order to avoid the negative impacts of the megaproject.

Nevertheless, the IDB has turned a deaf ear to protests and recommendations: in August 2000 a US$ 160,2 million was approved for the construction of the Cana Brava Dam. (WRM Bulletin Nº 42, January 2001).

Brazil: Indigenous peoples restart their struggle against dams on the Xingú river

Since their arrival in the Amazon, “white men” have had an ever-increasing impact on that region. However, it was not until World War 2 that deforestation became a large-scale process. Today, some 80% of the Amazon forest is still standing, but estimations are that its destruction will be completed in the next decades if nothing is done to stop it. The hope that “something” could be done was closer than ever in 1989, when the first meeting of indigenous peoples was held in Altamira.

The image of an indigenous Kayapo woman threatening the president of Eletronorte with her knife travelled throughout the world. Indigenous leader Paulo Payakan went to the offices of the World Bank in Washington to speak againt the financing of the hydroelectric dam of Kararao, because it would destroy nature and violate the rights of the native inhabitants of the region. The result was that Eletronorte had to put aside its dam building plans on the Xingú river. This victory was to a large extent possible through the broad support received by the indigenous peoples from politicians, scientists, artists, NGOs, and entrepreneurs from the so-called “green industries.”

Thirteen years later, and taking advantage of an energy crisis, Eletronorte has returned with its plan of building a hydro-plant in Kararao. They now call it “Belo Monte”, in an attempt to erase the history of struggles against it. Paulo Payacan, first condemned by the influential magazine “Veja”, and only later – in a controversial trial – by the courts of justice, is now impeded to circulate outside the indigenous territories. Differently from what happened in 1989, the famous singer Sting was not present at the new Altamira meeting. The meeting was also ignored by the mainstream media, by the cos-

metics multinationals, and by the NGOs that developed during the past years to a large extent as a result of their relationship with the indigenous peoples.

The struggle against the Xingú dams is not lost. Leaders of the movement have already been killed, the mass media has been corrupted, and hydroplants have been privatized even before having been built. But if in 1989, the indigenous people who participated numbered 600, at this second meeting at Altamira there were over 5000 people – including indigenous representatives and rural workers. The movement will need to greatly increase in the coming months. Humanity, impacted with the image of the global warming of the planet, watching how a 50 billion tonne block of ice comes off the Antartica, may finally become aware of the impending disaster of the Amazon forest going up in flames. There is still hope that we will not become witnesses or accomplices of the death of Xingú river. (By: Rodolfo Salm, WRM Bulletin Nº 57, April 2002).

Brazil: Old hydroelectric dam project again threatens Amazon peoples

Presented as a "clean" source of energy that does not contaminate the atmosphere with greenhouse gases, as in the case of oil or natural gas, obtaining hydroelectric energy by building dams continues to advance along the Xingú river, the last of the great Amazon rivers in good state of conservation.

However, it is estimated that nearly all the Amazon forest will be destroyed during the first half of this century if the present trends are increased with the implementation of major infrastructure works in the region and that carbon release resulting from burning down the forest would be the equivalent to nearly 50 times the present annual release of greenhouse gases in the United States. In spite of this, the energy consultant, Joaquim Francisco de Carvalho, argues in favour of the construction of the Xingú hydroelectric plant, all to satisfy future Brazilian demand for electricity, an unsustainable demand that comes hand in hand with "development."

Today, over 45,000 large dams, with walls of over 15 metres high, obstruct the rivers of the world and their dams flood thousands of hectares of forest – particularly in tropical zones – leaving them to slow decomposition (and therefore to the release of enormous volumes of methane gas, one of the main greenhouse gases). Reservoirs have also been the indirect cause of deforestation in other places (with the consequent release of carbon dioxide, another greenhouse gas), because farmers displaced by the dams have

had to cut down forests in other zones to install their crops and build their homes.

As we informed previously, plans for the construction of the Kararaô hydroelectric dam, re-baptised Belo Monte, on the Xingú River, generated a major controversy during the eighties. Although the area of the artificial lake necessary for the dam to operate was reduced, destruction associated with the dam is only a part of that caused by the works in general. Dams require the building of highways that enable “development agents” to have access to previously remote regions. Thus uncontrollable environmental degradation processes are triggered off – the dam not only floods agricultural lands but also causes drastic changes in the environment, and even the gradual disappearance of flora and fauna – which in turn causes severe effects on the population, not only on the local population that depends on such resources, but also on the population of the whole river basin that has been dammed.

An example of this is the highway from Xinguara, in the zone of influence of the Belem-Brasilia highway, going through the forest towards the west and ending up in Sao Felix, on the banks of the Xingú river. The road, opened up in the eighties by the Andrade Gutiérrez building company, created a zone for a great concentration of loggers and illegal logging, that has now extended beyond the left bank of the river.

The forests of the Xingú river valley are particularly vulnerable to large forest fires. This is because the river crosses a zone of low rainfall, receiving nearly 2000 mm of rain a year, concentrated in a single and well-defined humid season. During the dry season (from April to September), the total absence of rain for long periods is usual. As a major part of the rainfall on the Amazon comes from forest transpiration, while deforestation advances on the region, droughts become more intense, increasing the risk of further forest fires and deforestation rates, in a positive feedback cycle. Thus, the Xingú hydroelectric plants, which during the dry season (when the flow of the rivers in the region is greatly reduced) would be already working well below the level of their capacity would, ironically, become unviable due to the deforestation and desertification processes associated with their very construction.

The present ecological integrity of the Xingú and the fact that so far no hydroelectric plant has been built along its course, is not the result of the

action of "environmental NGOs" but of peoples' genuine struggles. The preservation of this river is explained by the abundance of indigenous peoples with war-faring traditions, for whom ecological preservation is necessary for their survival. In 1989, when the construction of the Kararaô hydroelectric plant was planned, the project was halted by pressure of the indigenous peoples, who demonstrated in Altamira, getting them to suspend their funding. Today, in addition to the indigenous peoples, small rural farmers are also protesting against the construction at Kararaô.

Just as with the use of fossil fuels, which if continued to be used at the present rate will cause environmental catastrophes that can place at risk the very survival of the human race, the construction of dams could also have the same effect. The problem is complex and its solution demands an in-depth revision of consumer values and models, urgently and drastically reducing the Brazilian demand for electricity. (By: Rodolfo Salm, WRM Bulletin Nº 67, February 2003).

Chile: World Bank acknowledges mistake and impacts in the Bio Bio Pangue dam

In a press conference during the recent Summit of the Americas held in Santiago, Chile, Mr. James Wolfensohn, President of the World Bank, admitted that the Bank's support to the Pangue hydroelectric project in the Bio Bio River watershed, in Chile, had been a mistake. Mr. Wolfensohn said that the WB had performed "bad work" during the evaluation of the environmental impact of the project, since the Pehuenche indigenous peoples that inhabit the area had not been consulted.

The Pengue hydroelectric plant, that began operating in March 1997, cost US$ 340 million and the International Financial Corporation – an agency of the WB that supports private sector projects – lent US$ 150 million of the total investment.

During a visit to the region Mr. Wolfensohn saw for himself that the Pehuenche communities had been removed from their territories by Endesa, the company responsible for the project. When asked about this action, Endesa answered that this was the result of an "agreement" between the company and the dwellers of the area. "I am personally involved for those families to be treated with equity and consider myself morally responsible for the indigenous people". According to Wolfensohn, the WB feels obliged to find a

solution to the problem it has contributed to create and will take actions to do so. (WRM Bulletin Nº 11, April 1998).

Chile: International Prize awarded to two Mapuche women

The Heinrich Böll Foundation awarded the Petra Kelly Prize 2000 to two Mapuche women – Berta and Nicolasa Quintremán Calpán – as a recognition of their struggle to protect the Mapuche Pehuenche's rights against the Spanish ENDESA Company and the Chilean Government over the construction of the RALCO dam.

The RALCO dam would be the second of the six hydroelectric dams ENDESA has planned to build along the Bio Bio river. The first dam – the Pangue dam – was completed in 1997 only 30 km down the same river, and received a US$ 150 million loan from the World Bank. This was eventually recognized by World Bank's president James Wolfensohn as having been a big mistake. The Bank was even accused "of contributing to ethnocide of the Mapuche-Pehuenche indigenous community."

If implemented, the RALCO dam would swamp a vast area of Chilean forests and some 600 Mapuche Pehuenche people would be removed from their land as well as other families from the Upper Bio-Bio area. Communities from Callaqui, Pitril, Cauñicu, Malla Malla and Trapa Trapa would be radically affected.

With the establishment of the Petra Kelly Prize, the Heinrich Böll Foundation seeks to "recognise individuals and groups whose outstanding and visionary activism serves to foster the respect for and promotion of universal human rights, non-violent conflict resolution, and the protection of the natural environment." The prize was also designed "to provide political support to the prize-winner and contribute to publicising his/her concerns and activities". These two Mapuche Pehuelche women, who have been fighting for the rights of their people since 1992 truly deserve recognition and international support for their ongoing struggle. (WRM Bulletin Nº 41, December 2000).

Chile: The struggle of the Pehuenche against the Ralco Dam

The Biobío River springs from Icalma and Galletue lakes in the Andes, in southern Chile and flows during 380 km through forests, agricultural lands and cities to the Pacific Ocean, draining a watershed of 24,260 km2. Over

one million people use the resources of the Biobío for drinking and irrigation water, recreation, and fisheries.

In the decade of 1990, Spanish corporation ENDESA (Empresa Nacional de Electricidad S.A) began to implement its plan to install six hydroelectric dams on the Biobío, with a total capacity of 2,300 megawatts. Plans to dam the Biobío originated in the1950s, when electricity generation in Chile was still state-owned. The first dam, called Pangue, was completed in 1996, and now the company is working in the construction of Ralco, the largest of the planned dams in the Biobío.

During the construction of Pangue, started in 1990, severe impacts took place to the detriment of forests and the Pehuenche indigenous people, traditional inhabitants of the region who resist any attempt of displacing them from their territories. The role of the International Finance Corporation (IFC) – private sector arm of the World Bank – was severely questioned because of its lack of transparency and its financial support to such an unsustainable project. During a visit to Santiago in April 1998, Mr. James Wolfensohn, President of the World Bank, admitted that the Bank's support to the Pangue hydroelectric project had been a mistake, and that the Bank had performed "bad work" during the evaluation of the environmental impact of the project, since the Pehuenche indigenous peoples that inhabit the area had not been consulted. Nevertheless this sad story is being repeated in the case of Ralco.

The construction of the 570 megawatt Ralco Dam started shortly after Pangue was completed, because both dams are supposed to work together for the generation of electric energy. As a matter of fact, the Ralco Dam has been designed to regulate the water flow to the Pangue and the other dams proposed downstream. This 155 meter-high dam with a 3,400 hectare reservoir, would displace more than 600 people, including 400 indigenous Pehuenches. The dam would flood over 70 km of the river valley, inundating the richly diverse forest and destroying its bio-diversity.

The Pehuenche, supported by the Biobío Action Group, went to court and at the same time implemented direct actions on the ground to avoid that the works for Ralco continue. They completely refuse to abandon their ancestral lands and to accept the resettlement plans of ENDESA to locate them in a place high in the Andes, where harsh conditions during winter reign. Reality is giving the reason to the opponents of the resettlement: a few families who have already been relocated to the El Huachi and El Barco areas have

publicly denounced ENDESA's failure to honour its commitments to them in exchange for their land. They are suffering their livestock's miserable condition during the heavy winter snows, lack of technical assistance, shortage of firewood and lack of medical assistance. Pehuenche women are playing a leading role in this struggle, facing the arrogance of ENDESA and the indifference of the Chilean authorities.

In spite of the growing awareness at home and abroad about the severe impacts that dams are generating in the Biobío area, the Export Development Corporation of Canada's government is granting financing equivalent to US$ 17 million dollars for the ENDESA company to purchase generating equipment for the planned Ralco Power Station, from the ABB Power Canada company of Tracy, Quebec.

The future of the Pehuenche and the Ralco Dam is now in the hands of Justice. In essence, this is a court battle between the Indigenous Law of 1993, designed to protect the lands of the indigenous population, and the Electricity Law passed during Pinochet's regime, that promotes any energy generation project. Nevertheless, much depends on the mobilisation of the Pehunche people for environmental justice and the support it can achieve at the national and international levels. Within this context, the Heinrich Böll Foundation's decision to award the Petra Kelly Prize 2000 to two Mapuche women – Berta and Nicolasa Quintremán Calpán – as a recognition of their struggle to protect the Mapuche Pehuenche's rights shows the increasing international support to this struggle. (WRM Bulletin Nº 42, January 2001).

Colombia: *Dueda tu beu ea embera neta Embera ea*: "the life and dignity of the Embera people won't be flooded"

The Urra hydroelectric dam megaproject in Colombia is causing negative impacts on the Embera Katio indigenous people, ancestral dwellers of the affected area. With the support of Colombian and international NGOs, the Embera Katio are bravely opposing the project boasted by the government, which menaces the permanence of their livelihoods and the survival or their entire culture.

As part of their resistance activities, in December 2000 a large group of indigenous families marched on foot to Bogotá in order to demand to the central authorities the immediate suspension of the dam works and to protest against the permanent state of insecurity and violence they are suffer-

ing because of the crossfire between guerrillas and paramilitary groups, who are trying to force them off their land.

The protesters reached Bogotá before Christmas after a long march. The group, formed by 100 men, 60 women and 30 children gathered in Bolívar Plaza in downtown Bogotá, where they said they would remain until the government heard their grievances. They denounced that the Environment Ministry had authorised the filling of the dam's reservoir without complying with the required process of consulting the affected communities, as stipulated by the 1991 National Constitution, whose Article 79 states that "everyone has the right to enjoy a healthy environment" and that "the law will guarantee the participation of society in those decisions that can affect it". They also stated that the construction of the Urra dam has ignored the rights of indigenous local residents, which were confirmed by a 1998 Supreme Court ruling.

On December 23, while the flooding of their territory by the dam works was beginning, a group of Embera Katio occupied the entry of the building of the Ministry of the Environment. At the same time they went on with their mobilization at the international level, asking the Inter American Commission of Human Rights to take preventive steps against the Colombian government so that the filling of the dam reservoir be immediately halted and a compensation for the environmental damages caused was paid.

In spite of his rhetoric Mr Juan Mayr, a former environmentalist and today Minister of the Environment, continues to deny the possibility of an open and sincere dialogue with the affected indigenous communities and has in fact decreed their death. Nevertheless, the struggle of the Embera Katio for life continues. As they say: "The life and dignity of the Embera people won't be flooded": "Dueda tu beu ea embera neta Embera ea." (WRM Bulletin Nº 30, January 2000).

Colombia: The U'wa and Embera join forces

As part of their struggle to prevent the occupation of their lands by Occidental Petroleum (Oxy), a group of about 200 members of the U'wa indigenous peoples established in November 1999 a camp in the area where the company is planning to drill the oil well "Gibraltar 1" with the approval of the Colombian Environment Ministry, which all along this conflict has disregarded the U'wa's rights and defended the interests of Oxy.

Tension in the region increased on February 11th when combined forces of the police and the army assaulted the zone of Las Canoas, close to Gibraltar, where nearly 450 U'wa men, women and children were settled. A violent repression took place and the indigenous people were forced to abandon the area. Seeking to escape, many of them threw themselves into the Cubujón River, and as a consequence three indigenous children drowned, while several men and women were injured and others disappeared. The Colombian Government as well as Oxy are to be blamed for these innocent deaths and for the violence exerted against defenseless people, which constitute a serious violation to their most elementary human rights.

A similar situation is that of the Embera Katío at the Sinú river upper watershed, whose ancestral territories, livelihoods and culture are threatened by the Urrá hydroelectric dam megaproject, which has also received support from the Environment Ministry. Peaceful protests and claims to international bodies have been carried out to stop this destructive project. Nonetheless, as in the case of the U'wa, the traditional and destructive "development" model still seems to prevail, but support for the Embera's struggle is increasing. In a press release issued on March 8th 2000 the 99 communities of indigenous peoples, fisherfolks and peasants of the Sinú river lower watershed have expressed that, given the present state of things, they will begin to act openly in defence of their Embera brothers and sisters in case they are expelled from their lands. They categorically blame the government for the situation of violence reigning in the area and for having refused to dialogue with the affected people.

The U'wa and the Embera have now joined forces and are organizing the visit of an international mission to Colombia in March 2000, composed of representatives of human rights, social and environmental organizations from several parts of the world. The main objective of the mission, which will start visiting the affected areas in March 18th, is "to witness the situation of imminent danger the Embera Katío and U'wa peoples are suffering and to make the government implement the agreements that guarantee their survival". The mission will be aimed at assisting them in their struggle based on "the right to live as indigenous cultures, to have alternative life and development options". (WRM Bulletin Nº 32, March 2000).

Colombia: The Urrá Dam and the death of the Sinú River

The Urrá Dam megaproject on the Sinú River in the Department of Córdoba, in the Colombian Atlantic region, constitutes a worldwide known envi-

ronmental catastrophe as well as a complete disaster to the local people. The dam built by the company Urrá and openly supported by the Colombian government – which considers the project vital for the country's economy – will flood more than 7,000 hectares of forests and directly affect the livelihoods and the very existence of the Embera Katío indigenous people and the fisherfolk communities of the area.

Urrá's story is a very long and painful one. The project has provoked concern and resistance since its start in 1977. The Embera Katío indigenous people, ancestral dwellers of the affected area, who live on fishing and hunting, and the fishing communities of the Upper Sinú, with the support of national and international organizations, have repeatedly claimed against this megaproject and resorted to every peaceful available way, including trials at the Court, interviews with the authorities and occupations of Ministry buildings and resistance to abandon their lands. Nevertheless, both Urrá and the Ministry of the Environment have ignored them, as well as several decisions of the Constitutional High Court of Colombia. The works continued and in November 1999 the filling up of the Urrá 1 dam on the Sinú River began.

In the meantime, Urrá also tried to generate conflicts among the Embera Katío and to weaken their resistance by reaching partial agreements with some of their groups to the detriment of the others. During this unequal struggle, the Embera Katío and the fisherfolk, as well as many of those who support them, have also suffered severe human rights violations, some of them being even murdered, threatened or forced into exile. The Department of Córdoba, where the dam is located, is controlled by paramilitary groups.

An international mission of independent observers that visited the conflict area in March 2000 confirmed the environmental and social impacts of the project. Downstream from the dam, the river level has already decreased dramatically, resulting in the collapse of the river's banks and the entailing destruction of the peoples' houses. The population of the fish "bocachico" – which is the main source of protein for the Embera Katío and a basic product in the economy of the local fisherfolk, has drastically decreased because of the sudden dry up of the wetlands of Ciénaga Grande de Lorica and other wetlands of the Lower Sinú, provoked by the reduction of the natural floods of the river after the construction of the dam. The reservoir was filled up without removing the existent bio-mass, which will result in the eutrophication of waters and increase the emissions of methane and car-

bon dioxide to the atmosphere, the two main greenhouse gases. Logging and burning of wood is being practised in several places nearby the dam, which will further enhance the sedimentation process in the reservoir.

The loss of their lands by the Embera Katío is complete. Additionally, those living upstream are powerless to prevent the flooding of their fields, houses, sacred sites and cemeteries. Effects are also apparent downstream. Because of the disruption of the hydrological system, the natural flow has diminished and water quality has deteriorated disturbing the food network. Further impacts are anticipated on plankton, riparian vegetation, invertebrates, birds and other animals. The Sinú River is dying.

What will happen with the indigenous people and fisherfolk displaced from their world in contact with nature? Without land and resources, and deprived of their own culture, they will be forced to settle in any of the shanty towns existing in the main Colombian cities. “Dueda tu beu ea embera neta Embera ea” (“The life and dignity of the Embera people won’t be flooded”) is the motto of a struggle that goes on to avoid such an appalling future. (WRM Bulletin Nº 42, January 2001).

WORLD COMMISSION ON DAMS REPORT/2000

“Dams and Development: A New Framework for Decision-Making”

The final report of the World Commission on Dams, “Dams and Development: A New Framework for Decision-Making”, released in November 2000, is probably the most comprehensive, global and independent review of the performance and impacts of large dams, and the options available for water and energy development. Owing to its importance and usefulness for both national and international campaigners on this matter, we include in this book a summary text of the first part of the report. Both the synthesis and the complete Report are available at the web address of the World Commission on Dams.

The Commission

In April 1997, with support from the World Bank and IUCN-The World Conservation Union, representatives of diverse interests met in Gland, Switzerland, in light of a recent World Bank report, to discuss highly controversial issues associated with large dams. The workshop brought together 39 participants from governments, the private sector, international financial institu-

tions, civil society organisations and affected people. One proposal that came out of the meeting was for all parties to work together in establishing the World Commission on Dams (WCD) with a mandate to:

- review the development effectiveness of large dams and assess alternatives for water resources and energy development; and
- develop internationally acceptable criteria, guidelines and standards, where appropriate, for the planning, design, appraisal, construction, operation, monitoring and decommissioning of dams

The WCD Report - In Brief

The WCD report is a milestone in the evolution of dams as a development option. The debate about dams is a debate about the very meaning, purpose and pathways for achieving development. Through its Global Review of the performance of dams, the Commission presents an integrated assessment of when, how and why dams succeed or fail in meeting development objectives. This provides the rationale for a fundamental shift in options assessment and in the planning and project cycles for water and energy resources development.

The Commission's framework for decision-making is based on five core values: equity, sustainability, efficiency, participatory decision-making and accountability. It proposes:

- a rights-and-risks approach as a practical and principled basis for identifying all legitimate stakeholders in negotiating development choices and agreements
- seven strategic priorities and corresponding policy principles for water and energy resources development
- gaining public acceptance, comprehensive options assessment, addressing existing dams, sustaining rivers and livelihoods, recognising entitlements and sharing benefits, ensuring compliance, and sharing rivers for peace, development and security; and
- criteria and guidelines for good practice related to the strategic priorities, ranging from life-cycle and environmental flow assessments to impoverishment risk analysis and integrity pacts.

The Commission's rationale and recommendations offer scope for progress that no single perspective can offer on its own. They will ensure that decision-making on water and energy development:

- reflects a comprehensive approach to integrating social, environmental and economic dimensions of development
- creates greater levels of transparency and certainty for all involved; and
- increases levels of confidence in the ability of nations and communities to meet their future water and energy needs

Dams and Development – An Introduction

Dams have been built for thousands of years – dams to manage flood waters, to harness water as hydropower, to supply water to drink or for industry, or to irrigate fields. By 1950, governments, or in some countries the private sector, were building increasing numbers of dams as populations increased and national economies grew. At least 45 000 large dams have been built as a response to meet an energy or water need. Today nearly half of the world's rivers have at least one large dam.

As we start the new century, one-third of the countries in the world rely on hydropower for more than half their electricity supply, and large dams generate 19% of electricity overall. Half the world's large dams were built exclusively or primarily for irrigation, and some 30-40% of the 271 million hectares irrigated worldwide rely on dams. Dams have been promoted as an important means of meeting perceived needs for water and energy services and as long-term, strategic investments with the ability to deliver multiple benefits. Some of these additional benefits are typical of all large public infrastructure projects, while others are unique to dams and specific to particular projects.

Regional development, job creation, and fostering an industry base with export capability are most often cited as additional considerations for building large dams. Other goals include creating income from export earnings, either through direct sales of electricity or by selling cash crops or processed products from electricity-intensive industry such as aluminium refining. Clearly, dams can play an important role in meeting people's needs.

But the last 50 years have also highlighted the performance and the social and environmental impacts of large dams. They have fragmented and transformed the world's rivers, while global estimates suggest that 40-80 million people have been displaced by reservoirs.

As the basis for decision-making has become more open, inclusive and transparent in many countries, the decision to build a large dam has been

increasingly contested, to the point where the future of large dam-building in many countries is in question.

The enormous investments and widespread impacts of large dams have seen conflicts flare up over the siting and impacts of large dams – both those in place and those on the drawing board, making large dams one of the most hotly contested issues in sustainable development today. Proponents point to the social and economic development demands that dams are intended to meet, such as irrigation, electricity, flood control and water supply. Opponents point to the adverse impacts of dams, such as debt burden, cost overruns, displacement and impoverishment of people, destruction of important ecosystems and fishery resources, and the inequitable sharing of costs and benefits.

With these conflicts and pressures in mind, the World Commission on Dams began its work in May 1998. One of the Commissioners' first points of agreement was that dams are only a means to an end. What is that end? How central are the challenges that large dams set out to meet? And how well can they meet these challenges?

The WCD concluded that the 'end' that any project achieves must be the sustainable improvement of human welfare. This means a significant advance of human development on a basis that is economically viable, socially equitable and environmentally sustainable. If a large dam is the best way to achieve this goal, it deserves support. Where other options offer better solutions, they should be favoured over large dams. Thus the debate around dams challenges views of how societies develop and manage water resources in the broader context of development choices.

After more than two years of intense study, dialogue with those for and against large dams, and reflection, the Commission believes there can no longer be any justifiable doubt about five key points:

- Dams have made an important and significant contribution to human development, and the benefits derived from them have been considerable
- In too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment
- Lack of equity in the distribution of benefits has called into question the value of many dams in meeting water and energy development needs when compared with the alternatives

- By bringing to the table all those whose rights are involved and who bear the risks associated with different options for water and energy resources development, the conditions for a positive resolution of competing interests and conflicts are created
- Negotiating outcomes will greatly improve the development effectiveness of water and energy projects by eliminating unfavourable projects at an early stage, and by offering as a choice only those options that key stakeholders agree represent the best ones to meet the needs in question

What Is the Debate About?

As noted earlier, the reported returns on the investments made in dams have increasingly been questioned. The notion of costs versus reported benefits emerged as a public concern, given growing experience and knowledge about the performance and consequences of dams. Driven by research and information on the impacts of dams on people, river basins and ecosystems, as well as data on economic performance, opposition began to grow. During the early stages of this process, debate and controversy focused on specific dams and their local impacts. But gradually these locally driven conflicts began to evolve into a more general and ultimately a global debate about dams.

The issues surrounding dams are the same issues that surround water, and how water-related decisions are made, as well as how development effectiveness is assessed. There is little public controversy about the choice between an embankment dam or a gravity dam, or about whether to use earth, concrete or rock-fill. The problems all relate to what the dam will do to river flow and to rights of access to water and river resources; to whether the dam will uproot existing settlements, disrupt the culture and sources of livelihood of local communities, or deplete or degrade environmental resources; and to whether the dam is the best economic investment of public funds and resources.

The debate is partly about what occurred in the past and continues to occur today, and partly about what may unfold in the future if more dams are built. In some countries, it is driven primarily by specific social or environmental concerns; in others, by broader development considerations. In the United States, where the rate of decommissioning is greater than the rate of construction of new large dams, the debate is perhaps as intense as – but qualitatively different from – the debate in India, which along with China is now building the most dams.

The two principal poles in the debate illustrate the range of views on past experience with large dams. One perspective focuses on the gap between the promised benefits of a dam and the actual outcomes. The other view looks at the challenges of water and energy development from a perspective of 'nation building' and resource allocation. To proponents, the answer to any questions about past performance is self-evident, as they maintain that dams have generally performed well as an integral part of water and energy resource development strategies in over 140 nations and, with exceptions, have provided an indispensable range of water and energy services.

Opponents contend that better, cheaper, more benign options for meeting water and energy needs exist and have been frequently ignored, from small-scale, decentralised water supply and electricity options to large-scale end-use efficiency and demand-side management options. Dams, it is argued, have often been selected over other options that may meet water or energy goals at lower cost or that may offer development benefits that are more sustainable and more equitable.

Although there may be agreement on such issues as the need to take environmental and social costs of dams more seriously and to consult systematically with affected people, deep fault lines still separate critics and proponents on a number of financial, economic, social and environmental issues. Among the most intractable are:

- the extent to which alternatives to dams are viable for achieving various development goals, and whether alternatives are complementary or mutually exclusive
- the extent to which adverse environmental and social impacts are acceptable
- the degree to which adverse environmental and social impacts can be avoided or mitigated; and
- the extent to which local consent should govern development decisions in the future

The decision to build a large dam today is rarely only a local or national one. The debate has been transformed from a local process of assessing costs and benefits to one in which dams in general are the focus of a global debate about development strategies and choices.

What Did the WCD Global Review of Large Dams Find?

To fulfil its mandate to review the development effectiveness of large dams and assess alternatives for water resources and energy development, the Commission undertook eight detailed case studies of large dams and prepared country reviews for India and China plus a briefing paper on Russia and the Newly Independent States.

A survey of 125 large dams was also developed, along with 17 thematic reviews on social, environmental and economic issues; on alternatives to dams; and on governance and institutional processes. There were also 947 submissions and presentations at four regional consultations. All these inputs formed the core of the WCD Knowledge Base that served to inform the Commission on the main issues surrounding dams and their alternatives.

The Global Review had three components:

- an independent review of the performance and impacts of large dams (looking at technical, financial and economic performance; ecosystem and climate impacts; social impacts; and the distribution of project gains and losses)
- an assessment of the alternatives to dams, the opportunities they provide, and the obstacles they face; and
- an analysis of planning, decision-making and compliance issues that underpin the selection, design, construction, operation and decommissioning of dams

The WCD's evaluation of performance was based on the targets set for large dams by their proponents – the criteria that provided the basis for government approval and financing. The Commission's analysis gave particular attention to understanding why, how and where dams did not achieve their intended outcome, or indeed produced unanticipated outcomes. An integral part of this research involved documenting good practices that have emerged as a response to past shortcomings and difficulties. Presenting this analysis does not overlook the substantial benefits derived from dams, but rather responds to the question of why some dams achieve their goals while others fail.

Technical, Financial and Economic Performance

The degree to which large dams in the WCD Knowledge Base have delivered services and net benefits as planned varied substantially from one

project to the next, with a considerable portion falling short of physical and economic targets. In spite of this, the services produced by dams are considerable, as noted earlier. Irrespective of performance against targets, the Knowledge Base also confirmed the longevity of large dams, with many continuing to generate benefits after 30-40 years of operation.

A sectoral review of technical, financial and economic performance of dams in the Knowledge Base in terms of planned versus actual performance suggested the following:

- Large dams designed to deliver irrigation services have typically fallen short of physical targets, did not recover their costs and have been less profitable in economic terms than expected
- Large dams built to deliver hydropower tend to perform close to but still below targets for power generation, generally meet their financial targets but demonstrate variable economic performance relative to targets, and include a number of notable under- and over-performers
- Large dams built for municipal and industrial water supply have generally fallen short of intended targets for timing and delivery of bulk water supply and have exhibited poor financial cost recovery and economic performance
- Large dams with a flood control component have provided important benefits in this regard, but at the same time have led to greater vulnerability to flood hazards due to increased settlement in areas still at risk from floods, and in some cases have worsened flood damages for a number of reasons, including poor operation of dams
- Large dams that serve multiple purposes also under-achieve relative to targets, in some cases exceeding the shortfalls registered by single-purpose projects, demonstrating that the targets established were often over-optimistic

The review of performance suggested two further findings:

- Large dams in the Knowledge Base have a marked tendency towards schedule delays and significant cost overruns
- Growing concern over the cost and effectiveness of large dams and associated structural measures have led to the adoption of integrated flood management that emphasises a mix of policy and non-structural measures to reduce the vulnerability of communities to flooding

The review also examined factors related to the physical sustainability of large dams and their benefits and confirmed that:

- Ensuring the safety of dams will require increasing attention and investment as the stock of dams ages, maintenance costs rise and climate change possibly alters the hydrological regime used as a basis for the design of dam spillways
- Sedimentation and the consequent long-term loss of storage is a serious concern globally, and the effects will be particularly felt by basins with high geological or human-induced erosion rates, dams in the lower reaches of rivers and dams with smaller storage volumes
- Water-logging and salinity affect one-fifth of irrigated land globally – including land irrigated by large dams – and have severe, long-term and often permanent impacts on land, agriculture and livelihoods where rehabilitation is not undertaken

Using the information on the performance of large dams collected in the WCD Knowledge Base, the Commission's report shows that there is considerable scope for improving the selection of projects and the operation of existing large dams and their associated infrastructure. Considering the enormous capital invested in large dams, it is surprising that substantive evaluations of project performance are few in number, narrow in scope and poorly integrated across impact categories and scales.

Ecosystems and Large Dams

The generic nature of the impacts of large dams on ecosystems, bio-diversity and downstream livelihoods is increasingly well known. From the WCD Knowledge Base it is clear that large dams have led to:

- the loss of forests and wildlife habitat, the loss of species populations and the degradation of upstream catchment areas due to inundation of the reservoir area
- the loss of aquatic bio-diversity, of upstream and downstream fisheries, and of the services of downstream floodplains, wetlands, and riverine, estuarine and adjacent marine ecosystems; and
- cumulative impacts on water quality, natural flooding and species composition where a number of dams are sited on the same river

On balance, the ecosystem impacts are more negative than positive and they have led, in many cases, to significant and irreversible loss of species and ecosystems. In some cases, however, enhancement of ecosystem values does occur, through the creation of new wetland habitat and the fishing and recreational opportunities provided by new reservoirs.

The Commission found that reservoirs sampled so far by scientists all emit greenhouse gases, as do natural lakes, due to the rotting of vegetation and carbon inflows from the catchment. The scale of such emissions is highly variable. Preliminary data from a Case Study hydropower dam in Brazil show that the gross level of these emissions is significant, relative to emissions from equivalent thermal power plants.

However, in other reservoirs studied (notably those in boreal zones), gross emissions of greenhouse gases are significantly lower than the thermal alternative. A full comparison would require measurements of the emissions from natural pre-impoundment habitats. More research is needed on a case-by-case basis to demonstrate the capacity of hydropower to offset climate change.

Efforts to date to counter the ecosystem impacts of large dams have met with limited success due to the lack of attention to anticipating and avoiding such impacts, the poor quality and uncertainty of predictions, the difficulty of coping with all impacts, and the only partial implementation and success of mitigation measures. More specifically:

- It is not possible to mitigate many of the impacts of reservoir creation on terrestrial ecosystems and bio-diversity, and efforts to 'rescue' wildlife have met with little long-term success
- The use of fish passes to mitigate the blockage of migratory fish has had little success, as the technology has often not been tailored to specific sites and species
- Good mitigation results from a good information base; early co-operation between ecologists, the dam design team and affected people; and regular monitoring and feedback on the effectiveness of mitigation measures
- Environmental flow requirements (which include managed flood releases) are increasingly used to reduce the impacts of changed streamflow regimes on aquatic, floodplain and coastal ecosystems downstream

Given the limited success of traditional mitigation measures, increased attention through legislation is now given to avoidance or minimisation of ecological impacts through setting aside particular river segments or basins in their natural state and through the selection of alternative projects, sites or designs. In addition, governments are experimenting with a 'compensatory' approach, offsetting the loss of ecosystems and bio-diversity caused by a large dam through investment in conservation and regenera-

tion measures and through protection of other threatened sites of equivalent ecological value.

Finally, in a number of industrialised countries, but particularly in the United States, ecosystem restoration is being implemented as a result of the decommissioning of large and small dams.

People and Large Dams

In terms of the social impacts of dams, the Commission found that the negative effects were frequently neither adequately assessed nor accounted for. The range of these impacts is substantial, including on the lives, livelihoods and health of the affected communities dependent on the riverine environment:

- Some 40-80 million people have been physically displaced by dams worldwide
- Millions of people living downstream from dams – particularly those reliant on natural floodplain function and fisheries – have also suffered serious harm to their livelihoods and the future productivity of their resources has been put at risk
- Many of the displaced were not recognised (or enumerated) as such, and therefore were not resettled or compensated
- Where compensation was provided it was often inadequate, and where the physically displaced were enumerated, many were not included in resettlement programmes
- Those who were resettled rarely had their livelihoods restored, as resettlement programmes have focused on physical relocation rather than the economic and social development of the displaced
- The larger the magnitude of displacement, the less likely it is that even the livelihoods of affected communities can be restored
- Even in the 1990s, impacts on downstream livelihoods were, in many cases, not adequately assessed or addressed in the planning and design of large dams

In sum, the Knowledge Base demonstrated a generalised lack of commitment or lack of capacity to cope with displacement. In addition, large dams in the Knowledge Base have also had significant adverse effects on cultural heritage through the loss of cultural resources of local communities and the submergence and degradation of plant and animal remains, burial sites and archaeological monuments.

The Knowledge Base indicated that the poor, other vulnerable groups and future generations are likely to bear a disproportionate share of the social and environmental costs of large dam projects without gaining a commensurate share of the economic benefits:

- Indigenous and tribal peoples and vulnerable ethnic minorities have suffered disproportionate levels of displacement and negative impacts on livelihood, culture and spiritual existence
- Affected populations living near reservoirs as well as displaced people and downstream communities have often faced adverse health and livelihood outcomes from environmental change and social disruption
- Among affected communities, gender gaps have widened and women have frequently borne a disproportionate share of the social costs and were often discriminated against in the sharing of benefits

Where such inequities exist in the distribution of the costs and benefits, the Global Review emphasises that the 'balance-sheet' approach to adding up the costs and benefits is increasingly seen as unacceptable on equity grounds and as a poor means of choosing the 'best' projects. In any event, the true economic profitability of large dam projects remains elusive, as the environmental and social costs of large dams were poorly accounted for in economic terms.

More to the point, failures to account adequately for these impacts and to fulfil commitments that were made have led to the impoverishment and suffering of millions, giving rise to growing opposition to dams by affected communities worldwide. Innovative examples of processes for making reparations and sharing project benefits are emerging that provide hope that past injustices can be remedied and future ones avoided.

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