The Lao People's Democratic Republic opened its borders in the mid-1980s, thus ending more than a decade of isolation from the capitalist world. For the mountainous, land-locked nation that suffered untold damage during the war, hydro power has emerged as an eminently saleable commodity on the international market. Indeed, so attractive appear the prospects of exploiting this 'white gold' that dozens of projects are being planned. A combination of political, geographical and economic conditions in Laos has spurred a race for hydro power on a scale and at a speed that is unprecedented in south-east Asia.

While this race has attracted the dam builders of the world, all in frantic competition to close deals, it is a Nordic project that managed to outpace all the others. Theun Hinboun, a 210-megawatt hydro dam currently under construction on the Theun river, will be among the first to begin operating in 1998. For the two Nordic utilities that are part-owners of the project - Sweden's Vattenfall and Norway's Statkraft - Theun Hinboun also marks a first, as neither has ever invested in a power dam abroad.

How, then, did the Nordics win this race in one of the world's potentially hottest dam-building countries? And why did utility companies that had only ever built dams in the Nordic region pick Laos as the site of their first international venture? The answers to these questions lie in the close links between business and development assistance; a product of the 'dams as aid' phenomenon.

Sweden earned its reputation in Laos through an independent and outspoken foreign policy during the war years of the 1960s and 1970s. Sweden vociferously opposed US military involvement in Vietnam, and criticized the American government for extending the war into the two neighbouring
Indo-Chinese countries. When US troops invaded Cambodia in May 1970, the Prime Minister, Olaf Palme, condemned this 'penetration of the American war machine' and warned that Laos' fragile neutrality could also be undermined (Palme 1970: 111, 113). The following February, when South Vietnamese troops entered Laos, the Foreign Minister, Torsten Nilsson, declared that 'once again alien combat forces have intruded without permission on the territory of

another country ... This contempt for the integrity of a small nation should be branded as it deserves' (Nilsson 1971: 177).

With these concerns, Sweden gave humanitarian assistance to Laos starting in 1974, and in 1977 the Swedish International Development Authority (SIDA) established a full country programme, one of the first Western countries to do so. The emphasis of the Swedish position from the start was on the right to self-determination and independence of a small state. As Palme said: 'For us what was at stake [in the Indo-China War] was the defence of the right of the small nations to shape their own future' (Palme 1970: 111). Yet SIDA did not support Theun Hinboun directly. It was Norway, which has neither an embassy in Vientiane nor a history of supporting projects in Laos, that provided grants for the environmental and technical studies for the dam. Nevertheless, Sweden's goodwill and the Lao people's trust of Swedes in general remained, in the estimation of the Nordic builders of Theun Hinboun, at the heart of the dam project's success.

Theun Hinboun bears many similarities with other projects in progress in Laos; the electricity will be sent across the Mekong and sold to the region's largest energy-consumer: Thailand. But it is portrayed by its Nordic proponents as 'kinder and gentler' than other dams in the pipeline because of its smaller size, because of the fact that the Lao government maintains a majority ownership, and, not least, because of the involvement of Nordic interests. Nordic agencies and companies tend to view themselves as being less predatory than their competitors - like Sweden in the Palme days, when 'good guys' and 'bad guys' were easier to identify - as having the good of Laos and other poor countries at heart. The builders claim that they are helping their Southern brothers by transferring a model of development that made the Nordic countries the rich industrial powers they are today.

Theun Hinboun is one of the smaller hydro projects in the Lao pipeline but its social and ecological impacts were not seriously studied, and only US $1 million has been allocated by the builders for overall compensation. Each year for the next 30 years, Vattenfall and Statkraft will earn almost US $4 million from their investment, while Lao society will be saddled with whatever other costs come up. The thousands of farmers affected by the dam were never informed about the project, much less consulted. With a 40-kilometre stretch of river dried out and inundation upstream, they risk losing seasonal agricultural land, and rich and diverse fisheries, on which they depend totally for their food and their livelihood. Moreover, a dozen key species, including tiger, elephant, macaque and gaur, could be seriously affected by the reduced dry-season flow. If this project is in fact kinder and gentler than the others, the future for the Lao environment and for people dependent on intact riverine and forest ecosystems looks bleak indeed. As Korean, Australian, Italian, Japanese and French companies stake their claims on one river after another in preparation for building even bigger dams than Theun Hinboun, questions must be raised about this 'rent-a-river' approach. Because of the lack of laws and institutions,

and even an absence of Lao personnel who read enough English to wade through voluminous
project documents, the country risks losing control over one of its most valuable resources if even a fraction of these projects are realized. The mad dash for hydro could represent as serious a threat to Lao sovereignty in the long term as the colonial ambitions of foreign powers did in the past.

THE THEUN HINBOUN DAM

In Laos, where most water eventually flows to the Mekong, the Theun river is its second largest tributary. The Theun watershed encompasses nearly 15,000 square kilometres of forested mountains and river valleys dotted with rice-growing communities, mainly of the Lao/Tai cultures. Villages tend to be small, with 100 or 200 inhabitants, and Self-sufficient, meaning that families either grow or harvest from the forest and streams many of their basic needs.

The site of the Nam Theun Hinboun Dam is between Bolikhamsay and Khammuan provinces on the Theun river, some 100 kilometres upstream of the river mouth. As with most dams being planned in Laos today, the electricity to be generated by Theun Hinboun will be sold across the border to the Electricity Generating Authority of Thailand (EGAT). Ownership in the US $280 million project is divided among three entities. The Lao state utility Electricité du Laos owns 60 per cent of the project, partially covered through a US $60 million loan from the Asian Development Bank (ADB). Nordic Hydro Power, the second owner, is a consortium of the two largest Nordic hydro utilities, Sweden's Vattenfall and Norway's Statkraft. This company owns 20 per cent of Theun Hinboun, with revenues to be split equally between the two. MDX Public Company, a Thai real estate firm, owns the remaining 20 per cent. This arrangement will hold for 30 years, after which, it is assumed, ownership will revert to the Lao government.

In addition to the ADB loan, the Norwegian Agency for Development Cooperation (NORAD) has subsidized this project through three grants to the Lao government: in 1993, US $1.5 million for a project survey, including an environmental impact assessment; in 1994, US $5.5 million for technical design; and in 1995, US $1 million for supplementary environmental studies and a water management plan. Norconsult (formerly named Norpower), Norway's largest consultancy firm working on hydro projects in the Third World, was given contracts for the first two. The third was awarded to a smaller competing firm, Norplan, which sub-contracted parts of the study as follows: vegetation and wildlife to the Wildlife Conservation Society; water quality, minimum flow release and aquatic ecology to the Norwegian Institute for Water Research (NIVA) and the Norwegian Institute for Nature Research (NINA); hydrology, erosion and sediment transport to the Swedish firm Hydroconsult AB; and land use and rural development to the Vientiane-based Swedish firm Burapha and the Bangkok-based MIDAS.

Theun Hinboun is a trans-basin diversion project, which will divert some

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100 m³/s (cubic metres per second) - almost a quarter of the Theun's annual average and double the dry-season flow - into the Hai, a tributary of the Hinboun river, which in turn flows into the Mekong; hence the name, Theun Hinboun. According to Norconsult, project designers have made use of the 240-metre difference in elevation between the Theun and Hinboun basins for power generation. Water will be diverted by the 25-metre-high dam to the power station and then through a 4-kilometre tailrace canal into the Hinboun river, and back to the Mekong about 30 kilometres upstream from Thakhek. Electricity will be sent to Thailand via a 230-kV transmission line, 100 kilometres on the Lao side to Thakhek and, from the border, another 90 kilometres to the connection point at Sakon Nakhon.

The Theun river's mean annual flow is 460 m³/s, with dry-season flows of about 45 m³/s. Diversion implies a complete drying out of a 40-kilometre stretch downstream of the riverbed until the first inflowing tributary, Nam Mouan. The consultant's report assumed that water would
be released from the dam only during electricity generation, and stated that the river would therefore be 'reduced to a series of pools' from February to April during years of normal rainfall. The project was approved with no clear agreement on maintaining a minimum flow in the river basin, and as of early 1996, 18 months into construction, agreement had still not been reached. Upstream, the reservoir will extend 24 kilometres along the Theun and 14 kilometres along the principal tributary, Nam Gnouang, with smaller intrusions into two other rivers, the Nam Ao and the Nam Pheu.

There are plans for several more dams on the Theun river, which has not previously been exploited for hydro power. The designers of Theun Hinboun have assumed that a much larger dam will be constructed upstream by the year 2000 - the 600-megawatt Nam Theun 2. Up to early 1996, however, approval of this project was still delayed on account of concerns about its far-reaching environmental impacts. (A Vattenfall official has said that the company will not invest in Nam Theun 2 for environmental reasons.) If built, Nam Theun 2 will cut the flow into the Theun Hinboun by half, thus exacerbating downstream effects and somewhat decreasing the electricity-generating potential. The site of another planned dam, Nam Theun 1, is downstream of Theun Hinboun, near the confluence with the Mekong river.

It is tricky to estimate the profits that will accrue to the Lao government from the operation of this hydro dam, as it depends on several variables: on upstream development; on the amount of water that is released in the dry season to maintain a minimum flow in the riverbed; and, most crucially, on whether the Lao state will end up paying for further compensation and mitigation measures. None of these issues is yet resolved. The report on Theun Hinboun presented to the board of the Asian Development Bank in 1994 stated that the government of Laos would earn US $25 million annually (Asian Development Bank 1994: 24). Norconsult based its 1993 financial analysis of the project on an economic life of 25 years for electrical and mechanical equipment, and a peak price ranging from 5.8 to 8.69 cents per kilowatt-hour (Norpower 1993). But the actual price negotiated with the Electricity Generating Authority of Thailand (EGAT) was well below this range: 4.3 cents per kilowatt-hour. If the plant generates about 1,250 GWh per year (assuming that Nam Theun 2 is built and that there is no minimum flow and no further compensation), Theun Hinboun will earn about US $54 million from electricity sales. According to Gunnar Wallin of Vattenfall, this works out at an average annual profit for the Swedish company of US $1.8-1.9 million over the 30-year contract. This is comparable to the 16 per cent profit margin that the company earns on Swedish projects. Statkraft, whose share in Theun Hinboun is also 10 per cent, would be in the same situation (Gunnar Wallin, Interview, 16 April, 1996). As the Lao government's share in Theun Hinboun is 60 per cent, its profit would be about US $11 million per year.

The Theun Hinboun project will affect an estimated 25 villages, and more than 5,000 people, including 13 villages upstream along the Nam Theun and Nam Gnouang rivers and 12 villages downstream along the Nam Hai (MiDAS and Burapha 1995: 9). It will also have a profound effect on the rich flora and fauna. A 1992 study estimates that there are more than 100 species of fish in the rivers, streams and swamps of the project area (Department of Livestock 1992: 51). The Theun river basin contains one of south-east Asia's most important forest areas with a wide range of habitat types and an astonishing diversity of wildlife, including populations of elephant, peafowl, clouded leopard and various primates. Near the dam, there are three protected areas - the Nakai Nam Theun National Biodiversity Conservation Area upstream, the Nam Kading National Biodiversity Conservation Area downstream, and the Khammoune Limestone Protected Area. The portion of the river being dried out has been described as one of Laos' 'least disturbed' rivers from a wildlife conservation point of view (Wildlife Conservation Society 1995: 1).

Nonetheless, the NORAD-financed Norconsult environmental impact study concluded that the project will have 'significant beneficial environmental impacts', while the only identified adverse
impact of the project is the reduction of flow below the dam site (Norpower 1993: 1-7). Furthermore, it gave assurances that the project would require no resettlement of local people, and have no negative impacts on fish. These conclusions were, as we shall see, disputed by most parties who reviewed the documents - various Norwegian government agencies, the press and non-governmental organizations in Norway and Thailand, and even the environmental adviser of Vattenfall - with the result that NORAD was forced to concede the poor quality of the report, and to pay for supplementary studies. These were extremely critical of Norconsult's findings. However, since they were only completed at the end of 1995, a year after construction began, they had no impact on the decision-making process or design of the dam. Before the supplementary studies had even been commissioned, NORAD again hired Norconsult to do the technical design for Theun Hinboun.

Norconsult called Theun Hinboun a 'relatively small project' - a somewhat misleading description. The International Commission on Large Dams (ICOLD) - the professional association of dam builders - defines a large dam as one which is 15 metres high. Theun Hinboun is 25 metres high. By Nordic standards, in terms of its generating capacity, it might be categorized as an average-sized dam, as the most powerful dam in Norway has a capacity of 1,240 megawatts and the most powerful in Sweden, 945 megawatts. Certainly, though, in comparison to some of the other dams being planned in Laos and on the mainstream of the Mekong river, Theun Hinboun is at the smaller end of the scale. Yet surely neither the Nordic situation nor the decades-old megaplans for the region are appropriate points of reference for assessing what Theun Hinboun will mean for Laos. Rather, the project should be seen in the local context. There are currently two dams generating electricity in Laos, the Nam Ngum Dam (150 megawatts) and the Xeset Dam (45 megawatts), built during the 1970s and 1980s, respectively. When it is completed in 1998, barring the completion of other projects ahead of schedule, Theun Hinboun will be the largest infrastructure project in Laos, doubling the country's installed electricity-generating capacity.

MEKONG RIVER POLITICS

While Theun Hinboun will be the first project in this era of privately or quasi-privately financed hydro, plans for dams in the Mekong basin are hardly new. In fact, the plans date back to the 1950s, when a retired general of the United States Army Corps of Engineers, Raymond Wheeler, headed a mission to study the hydro potential of the Mekong river. Wheeler's recommendations resulted in the creation in 1957 by the United Nations of the Bangkok-based Mekong Committee, a body whose mandate was to promote and coordinate development of the lower mainstream. Decisions were to be made by the governments of the four so-called lower riparian countries - Thailand, Laos, Vietnam and Cambodia - with extensive financial and technical assistance from Western donor agencies such as the United Nations Development Programme (UNDP).

Wheeler and his team envisioned a great cascade of seven dams along the, Mekong's mainstream from northern Laos down to Cambodia's Great Lake that would produce more than 20,000 megawatts of electricity (Lohmann 1990: 62). Wheeler's men proposed that massive structures be built along the mainstream and dozens more on the tributaries, in the tradition of American megadams like Hoover and Grand Coulee. The first of these was to be ten times higher than Theun Hinboun, and much larger than any dam that has ever been built in the Nordic region. The 250-metre High Pa Mong alone would have generated 4,800 megawatts of electricity, necessitating the removal of a quarter of a million people on the Thai and Lao sides of the river. But decades of war made the construction of such large infrastructure projects impossible. And for 38 years,
the Committee sat virtually idle, unable to fulfil the mandate that General Wheeler had inspired.

The leap from High Pa Mong as it was envisioned in the 1960s to the comparatively tiny Theun Hinboun of the 1990s reflects the emergence of public concern about the ecological and human rights impacts of dams over the past 30 years. For dams proponents, the attraction of a project with no negative environmental impacts and no necessary resettlement - as the Norwegian consultants studying Theun Hinboun claimed - is not hard to understand. Today Western donors who must answer to their environmentally conscious constituencies in times of shrinking aid budgets are becoming wary of very large dam projects.

One clear example of this wariness is Sweden's stated position against dams on the Mekong's mainstream. The position itself, coupled with the aid agency's failure to defend it, illustrates the tensions within the aid establishment about how to balance professed environmental concern with the desire to subsidize the international activities of national dam-building companies.

The Swedish International Development Authority (SIDA) had during the 1980s been one of the major bilateral donors (along with Australia and the Netherlands) of the Mekong Committee, providing finance mostly for environment-related work in the basin. In 1990, Erik Skoglund, a Swede working at the Committee in Bangkok hired through SIDA, came into conflict with then Executive Agent of the Mekong Committee, Chuck Lankester, over Pa Mong. By this time, the project had been radically scaled down (and renamed Low Pa Mong), largely to reduce the size of the reservoir and the number of people to be resettled. Lankester now wanted to push it through, as this would be the first dam on the lower mainstream and a clear sign of vitality for an agency whose very existence many were coming to question. But Skoglund had reservations about the resettlement - Low Pa Mong would cause 60,000 people, mostly poor farmers, to be forced out of their homes - as well as the impact on fisheries. 'Fish production will go down and it will cause a lot of damage. This is not just an environmental issue. It's a livelihood issue, especially for poor people. To destroy that resource is just not acceptable', he said (Development Today, December 1994). He expressed these concerns at the time in an interview with the regional magazine, The Far Eastern Economic Review (Far Eastern Economic Review, February 1991).

Skoglund recounts that Lankester was furious at being crossed publicly and, in a fit of rage, told the Swede to 'reconsider his service to the Mekong Committee'. On second thoughts, the Executive Agent changed his mind. But Skoglund resigned anyway at the end of his first term, disillusioned with the stifling atmosphere at the Committee under Lankester's leadership. Before he left, though, a SIDA mission visiting Bangkok made its support for Skoglund's position clear:

Without taking a stand on whether [Mekong] mainstream projects like the Low Pa Mong are economically and technically feasible and environmentally acceptable, the members of the SIDA delegation expressed [the opinion] that ... it would be difficult for the Committee to find soft financing for such projects. Resettlement schemes involving 60,000 people constitute a major obstacle to financiers such as SIDA ... and other financiers including the development banks.
If the row had not occurred, would SIDA have made such a clear statement on mainstream dams? To my knowledge, no other bilateral or multilateral aid agency has come close to point-blank opposition to large dams on any river. One can only speculate.

Following the Skoglund fiasco, SIDA decreased its support for the Mekong Committee over the 1992-4 period because of its lack of a clear mandate. This was reportedly due also to concerns about the overall environmental impact of dams on both the mainstream and tributaries, as well as Thailand’s water-diversion projects, which will decrease the flow into the Mekong from the Thai side. 'The whole river basin is a very fragile system. Any project can have consequences downstream. If you build a dam, environmentally you must be very careful, especially with the Mekong Delta', SIDA's Mikael Bahrke said (Development Today, May 1995). Renewed finance from SIDA was conditional on a new agreement in the basin that addressed these issues.

In April 1995, that agreement was signed by the four regional governments at a ceremony in Chiang Rai, and a newly named Mekong River Commission was established in place of the four-decades-old committee.

By all accounts, the new agreement is a weakening of the 1957 founding statute of the original committee that had given riparian states the right to vet any project affecting the mainstream. The new document is replete with rhetoric about the importance of sustainable development and environmental protection. But the 1995 accord does not empower downstream states to take action against upstreamers. (China, not yet a member of the commission, has already built the first dam on the Mekong's mainstream without discussion with downstream neighbours.) Nor does the agreement deter states from diverting water from the Mekong (as Thailand is doing) or damming its major tributaries (as Thailand has done and as Laos is planning to do on a major scale).

There can be no question about the new commission's raison d'être being to promote dam building (Bangkok Post, 31 March and 1 April, 1995). In December 1994, the Mekong Secretariat published a study financed by the UN Development Programme, entitled 'Mekong Mainstream Run-of-River Hydropower'. It identified 11 dams on the mainstream whose 'scale of development [was] deliberately constrained to avoid or to minimize impacts' (UNDP 1994: 1). Still, most of these are massive projects with generating capacities of over 1,000 megawatts.

Such developments are worrying to environmentalists in the region. Some 30 Thai non-governmental organizations and local water-basin groups met in Chiang Rai at the time of the founding meeting of the Mekong Commission.

They expressed opposition to the influence of the dam-building industry in the new agency, and concern about Thai plans to divert Mekong water into the Chao Phraya basin to solve Bangkok's water problems. In their statement, they pointed to the ecological complexities of the Mekong river basin, particularly the spectacular diversity of fish species. They described the basin as a 'centre of great cultural diversity, representing a heritage that is both unique and of great value for the world' (Thai NGO Statement on Cooperation for the Sustainable Development of the Mekong River Basin, 4 April, 1995). The statement was significant because it marked a broadening of concern of the Thai environmental movement, whose opposition to dams had effectively brought the power-dam era in Thailand to a halt.

Western donors (including SIDA) ignored these efforts, however, and unanimously hailed the new commission as an example of improved regional cooperation. In spite of SIDA's explicit opposition...
to damming the mainstream, the agency renewed and increased its three-year support for the commission's environmental work after April 1995. SIDA argued that it would not be directly involved in Mekong dam building, but would strengthen the environmental work of the new commission.

While SIDA threw its support behind the Mekong Commission, it did not end up funding Theun Hinboun. In the same year that the agency made its position on Mekong mainstream dams clear, SIDA decided to pull out of the energy sector in Laos. Jan Bjerninger, who was in charge of the Infrastructure Division at the time, explained the reason for this: most of Sweden's support to Laos at the time was going to three areas - road building, forestry and hydro power. SIDA had financed Laos' second dam, the Xeset, which had been built 'purely for export' to Thailand. The agency reasoned that further development aid funds should not be used to underwrite Thailand's electricity production. 'We felt that it would not be reasonable to subsidize these kinds of activities with grant money ... once was enough', Bjerninger said (interview, 4 March 1995).

Though SIDA's historical and political contribution to Theun Hinboun is indisputable, the grant money for the project came instead from the Norwegian aid budget. The deal was quietly negotiated quite independently of all the Mekong Commission politics and posturing since 1992. It was finalized without the direct involvement of SIDA, out of the view of Thai environmentalists and the general public, and certainly, without the knowledge of people living in the Theun and Hai river valleys. (MIDAS/Burapha 1995: 17, FIVAS 1996b: 5). While Theun Hinboun is a product of regional water politics, it has come about through a separate process that may have more to do with the international ambitions of the Nordic hydro industry.

NORDIC CONNECTIONS WITH THEUN HINBOUN

The Nordic company that owns 20 per cent of Theun Hinboun was formed to implement this project in 1993 by Vattenfall, the Swedish state electricity utility, which has built many of Sweden's dams, and Statkraft, its Norwegian counterpart. Vattenfall's Anders Hedenstedt, originally in charge of Theun Hinboun, described this consortium as 'the biggest hydro company in the world with a combined 17,000 megawatts of installed power [in the two countries]' (The Nation, 13 August, 1993). Theun Hinboun marks a unique shift for these utilities because it is the first dam project that either one has undertaken outside the Nordic region.

Partly, this shift is a necessary response to the widespread public resistance to dams in Sweden and Norway that has stopped construction of all but the smallest projects at home (Lövgren 1994: 56). Since 1987, Sweden's Natural Resources Act has formally forbidden the exploitation of the country's last four free-flowing rivers - the Torne, the Kalix, the Pite and the Vindel - for hydro power. The bitter struggle over the Alta project also brought dam building to a virtual standstill in Norway. Remarkingly on the political costs to the government of pushing Alta through, Norwegian anthropologist Terje Brantenberg commented that Alta became like a 'unit of measurement, so that today when Norwegian politicians are considering a controversial project, they ask if it is worth another Alta' (Terje Brantenberg, Interview, May 1995).

For Vattenfall's senior manager Karl-Erik Norlander, Theun Hinboun represents a natural evolution for Swedish dam builders. 'We have completed the implementation stage in the Nordic countries. There are very few new projects in Sweden and Norway. But we still need professionals in the field, so we go abroad to find opportunities to use our skills' (Usher 1994).

As the home market shrinks, the dams industry in the Nordic and other regions has found alternative sites in the Third World. But ownership is something new. We might well ask: why start with Laos? Part of the answer apparently has to do with the traditional reliance of the dams
industry on development aid budgets, and with SIDA's presence for years in Laos. Sweden's anti-war policy during the 1970s caused many Laotians to view the Nordics in a favourable light, an historical relationship from which Nordic dam builders are now benefiting. ‘SIDA has been working in Laos for more than ten years, and the Lao people tend to trust the Swedes', explained Norlander, who spent two years in Vientiane. Personal contacts played a key role in putting together the deal for Theun Hinboun, he said, describing the 'close links' between business opportunities and development assistance (Usher 1994).

Thus, although Sweden provided no direct aid money for Theun Hinboun, one such link was clearly the Xeset Dam in southern Laos, whose construction began in 1981. Finance was provided by SIDA, NORAD and the ADB, while Norconsult and the turbine manufacturer Kvaerner won contracts on the project. Gjermund Saetersmoen of Norconsult, who worked on Xeset from the beginning, lobbied actively for Theun Hinboun with Lao officials (Gjermund Saetersmoen, Interview, June 1994). This consultant's importance as a middle man - connecting the Lao government, NORAD, the Asian Development Bank and his own firm - was evidenced by a leaked letter from the then Lao Minister for External Economic Relations, Phao Boonaphol, to Norway's Ministry of Foreign Affairs. In the letter, which arrived at the ministry in Oslo in January 1992, Phao requested a grant to pay for a feasibility study of Theun Hinboun to be carried out by Norconsult. ‘In order not to lose a whole year of time it is very important that [Norconsult] can continue and conclude the field investigations for the feasibility study during the present dry season and subsequently be able to present their draft feasibility report by October 1992.... Mr. Gjermund Saetersmoen will give you more detailed information on his return to Norway' (Boonaphol 1992). The request evidently bore fruit, resulting in NORAD granting Norconsult two studies worth US $7 million.

Another link, according to Norlander, was Zia Noorzay, a former employee of the Asian Development Bank who now works for Vattenfall. Noorzay worked on behalf of the Bank during the 1970s on Laos' first dam, the Nam Ngum, and thus brought to the Swedish firm knowledge of the hydro scene in Laos.

Then in 1992 and 1993, Karl-Erik Norlander himself (working on behalf of Vattenfall's consultancy firm, SwedPower) was hired by SIDA to work as an energy adviser to the Lao government. This contract was SIDA's final contribution to the Lao energy sector. While in Laos, Norlander gave advice about how Laos might begin to harness some 15,000 megawatts of unexploited hydro power, and to prioritize a dizzying number of projects. At the end of two years, the Swedish consultant advised Laos to begin slowly with small projects where the government maintains a majority share in the ownership. At the top of his wish list was Theun Hinboun (Karl-Erik Norlander, Interview, 15 February, 1994).

DAM BUILDING IN LAOS: THE BOOT ERA

If Laos is to increase foreign exchange earnings quickly, then on the face of it, hydro power is an obvious option; one that the Lao government has embraced with fervour. A number of economic and political conditions have shaped the current craze for dam projects in particular ways.

Lao PDR clearly cannot afford the minimum quarter-billion-dollar investment that a dam like Theun Hinboun would require. Laos is one of the poorest countries in Asia, with a gross domestic product of just US $1 billion and exports of US $209 million in 1994 (The Nation, 5 June, 1995). And this is only the first of several dams in the pipeline. Nam Theun 2 upstream, for example, is estimated to have a price tag three times that of Theun Hinboun (The Nation, 23 June, 1995). Dam building in Laos is thus unimaginable without foreign investors - whether public or private - playing a crucial role.
The country consumes only a third of the 215 megawatts of electricity that its two main hydro dams can currently produce, selling the rest to Thailand. With no domestic market to speak of, hydro dams are being built purely for the export of electricity. This is relevant in discussions about sustainable development in general, and about dams in particular, which are normally couched in terms of the costs versus the benefits of development within a given country. With large infrastructure projects like dams, as the argument goes, a few have to suffer for the benefit of the majority. (And even then, those few are to be compensated for their losses.) In the case of the dams being built and planned in Laos today, however, the 'costs' will be borne in Laos by the environment and rural peoples, while the 'benefits' will be exported to Thailand. Apart from the cash, Laos will not gain 'development' in any conventional sense.

Moreover, Laos shares a 1,800-kilometre border with the region's most rapacious energy consumer: Thailand. Though Vietnam and Laos held talks in 1995 about energy cooperation, technical assistance with dam construction, and the possible sale of electricity from Laos to Vietnam, Thailand will probably remain the main purchaser of Laotian electricity for many years to come. By the end of 1993, peak power demand in Thailand was about 12,000 megawatts, representing an increase of over 70 per cent since 1987 (Sherman 1995: 7). By far the major power user is the industrial sector, which in 1993 consumed 46.7 per cent, followed by the commercial sector, 26.5 per cent, and the residential sector, 20.7 per cent (Bangkok Post, 3 March, 1994). Planners claim that electricity demand in Thailand is rising by 10-15 per cent per year and could, according to one estimate, increase seven times by the year 2020 (The Nation, 5 June, 1995). Laos is banking on a guaranteed market, but Lao bargaining power is limited. The Thai energy monopoly is breaking up, and this may lead to more competitive prices and a rethinking of import contracts. The Electricity Generating Authority of Thailand (EGAT) has agreed to buy 1,500 megawatts from Laos by 2000, but Thailand is far from dependent on Laos for its energy (The Nation, 5 January, 1995). Officials of Electricité du Laos (EDL) complain, understandably, that price negotiations with their Thai counterparts have been 'difficult' (The Nation, 5 June, 1995).

Another factor that is shaping the politics of dams in Laos is the role of the private sector under so-called 'BOOT' - or build, own, operate and transfer - schemes. Under this arrangement, groups of investors (which in theory may or may not include the national government) finance, build and operate a dam for periods of 20-30 years, after which they renegotiate the deal, or transfer it to the government. Private investors would provide the capital that once came from development aid budgets. Such schemes differ substantially from the traditional approach to dam building in the Third World, where public money, either from the national government or from aid institutions like the World Bank and bilateral agencies, played the key role. In the name of increased efficiency and, faced with privatized energy markets and a growing suspicion of subsidies for energy production, the World Bank has endorsed the BOOT concept since 1989 (Lohmann 1991: 62). Nordic investors have stressed that with a majority share (60 per cent) in Theun Hinboun, the Lao government can maintain control over how the resource is used. In comparison, the government would own only 25 per cent of Nam Theun 2.
dramatic topographical mix of high and low lands and strong-handed government, Laos is seen as near perfect dam land’ (Bangkok Post, 4 June, 1994). Laos could, in the most optimistic scenario, become the ‘Kuwait of Asia (The Nation, 4 March, 1994).

While it might alleviate some debt worries, the BOOT system raises other tricky questions. It may become even more difficult to monitor environmental and social impacts under the BOOT system, as foreign private investors have neither a mandate to alleviate poverty nor a Parliament and citizenry to which they are legally accountable.

Moreover, the BOOT scheme raises the question of sovereignty. By renting out its rivers on the basis of BOOT, a country could lose effective control over its land and natural resources. At the very worst, the Lao government could find itself in a relationship with foreign contractors that left it as much say over national energy policy as a vassal state in the colonial era. A SIDA-financed review warned:

> We ... fear that the massive inflow of foreign capital that would be required to finance the planned hydropower development may jeopardise the Lao PDR’s chances of maintaining a minimum of national control over basic natural resources and, indeed, over the general economic development of the country. (DeVylder 1994: 38)

As a government’s share in a project shrinks, who will coordinate negotiations for electricity sales between EGAT and myriad foreign contractors? In this ‘rent-a-river approach’, who will guarantee that full commission on profits - the rent - is paid to the Lao government? And what condition will plants be in when they are finally handed over after 30 years? If turbines need replacing and reservoirs are filled with Silt, will national governments be able to bear the costs incurred? And what if after several decades of use, as is happening in Thailand, the dams no longer work? ‘After all ... there must not be just a heap of junk to be turned over [to the government after 20-30 years]’, noted the Swedish report (DeVylder 1994: 38).

Finally, Laos is attractive to dam builders because they are unlikely to encounter the sort of public opposition and debate that have given large dams such a bad name both in their own countries and in Thailand. Years of resistance caused the Thai government to announce in 1995 that no more power dams will be built in the country (Bangkok Post, 24 February, 1995). To Northern firms that have seen their markets shrink because of environmental concerns in the industrialized world, and have watched anti-dam sentiments in Thailand rise, Laos offers welcome relief Vattenfall’s Hedenstedt remarked in 1993:

> The funny thing about [Theun Hinboun] is that there are almost no environmental problems. It’s a run-of-river dam that will not use any surface that is not already flooded during the rainy season. This is the only project in the region that seems to have no opposition. (The Nation, 13 April, 1993)

Without a free press or indigenous non-governmental organizations, there is no safe forum in which to challenge such claims, and open debate within the country remains difficult. Laotian critics of
dam projects, whether government officials or private individuals, tend to word their comments extremely carefully, and more often, speak only off the record.

THEUN HINBOUN’S ENVIRONMENTAL REVIEW

Already in 1993, Anders Hedenstedt at Vattenfall had complete confidence that the environmental study for Theun Hinboun would come up with no negative impacts. Offering a glimpse into the workings of ‘pervasive appraisal optimism’, he said: ‘No one anticipates a negative result. The purpose [of the study] is not to point out any dangers, but just to have an independent review. We foresee no problems with that’ (*The Nation*, 13 August, 1993).

Delivering as if on cue, Norconsult concluded its study a few months later:

> The project is highly viable and well justified. Immediate implementation, which commences with preparation of final design and preparation of tender documents for procurement of plant and civil works, is therefore recommended. (Norpower 1993: 1-8)

Recall that the study’s main conclusions were that no resettlement would be needed, and therefore no compensation, and that the project would cause no negative environmental impacts except for the drying out of the Theun river. Fisheries, the consultants declared, would improve because of the raised water level behind the dam.

Three years later, Vattenfall's Gunnar Wallin admitted that the environmental matters had turned out to be far more complicated than first anticipated. But he noted that 60 per cent of the revenue from the project goes to the Lao government. Therefore, 'they have more than enough if there are other secondary issues that come up, or if they want to invest in other areas. The profit can be used to buy fertilizer and replace slash and burn agriculture, which is the worst environmental problem in Laos' (Gunnar Wallin, Interview, 16 April, 1996).

In 1993, the Norconsult study was received without critical comment by NORAD industry department officials in charge of the project, who were anxious to push the project forward. It was not until the external reviewers had voiced their concerns that the public debate began.

According to NORAD’s review procedure, environmental impact assessments are to be looked over by various government agencies and by environmental advisers within the aid agency. In the case of Theun Hinboun, the consultant's report was greeted with unanimous disapproval. Following its review of the Lao project, the Norwegian State Pollution Control Authority recommended to NORAD: ‘the environmental assessment report is far from satisfactory ... we cannot recommend implementing this project on the basis of the existing data’. The Norwegian Water Resources and Energy Administration (NVE) warned that ‘there is potential for far-reaching environmental and social disturbances if these matters are not taken seriously (*Development Today*, 15 October, 1993).

In August 1993, the Lao Minister of Industry and Handicrafts, Soulivong Daragong, visited Oslo to discuss Theun Hinboun. Up to then, NORAD had not made the project documents public on the grounds that the recipient government had requested that they be kept confidential. The agency’s newly appointed environmental adviser, Ian Bryceson, who attended a meeting with the minister...
and other NORAD officials, raised the matter and was told that the studies could be released. According to Bryceson, that was the last such meeting to which he was invited. Eager to close the deal while Soulivong was still in Oslo, NORAD tried to pressure the third government reviewer, the Directorate for Nature Management (DN), to speed up delivery of its comments. DN refused, however, and Soulivong left Norway without a final decision.

The Directorate's subsequent comments on the Norconsult study were devastating in their criticism. Of the nine claimed positive effects of the project, they reported, three were 'highly questionable', and five were 'rather insignificant, indifferent or liable to different interpretation'. DN also delineated numerous omissions, the most serious of which was the potential additional impacts of Nam Theun 2 (Directorate for Nature Management 1993).

The Norwegian advocacy group the Association for International Water and Forest Studies (FIVAS) followed the project from 1993, and criticized NORAD for taking a sub-standard report at face value (FIVAS 1996a: 60). In 1996, following a field trip to Laos, in which they spoke to villagers in the Theun and Hai river valleys, Ellen Hofsvang and Gyrd Braendeland of FIVAS published their report, More Water More Fish?, which confirmed that local people had not been consulted by the developers (FIVAS 1996a: 5). The Bangkok-based Towards Ecological Recovery and Regional Alliance (Terra), which monitors resource politics in Burma and Indo-China, commented as early as 1993:

[The consultant] is aware that fish are a major source of protein for local people and also that fish provide people with food security in times of poor rice harvests. Inexcusably, this ... is not matched by a commitment to conduct a careful and rigorous assessment of potential losses and corresponding impacts on local people.

(Terra 1993)

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At the Nordic Dam-building in the South conference in Stockholm in 1994, Napha Sayakhoumane, Vice-President of the Lao Women's Union (Khammuan Province Branch), raised questions about the project. She noted that the only information available to Khammuan provincial officials at the time was a two-page brief, which she described as 'vague and propaganda-like'. In her speech she also pointed to the impact on fisheries:

The information I have is neither sufficient nor clear. [It] states that upstream of the dam, fish productivity will increase. But has there been any analysis about the impact of the deep waters of the reservoir on fish that naturally live in shallow water? What is the ecological impact of the change in water levels? This is not mentioned in the brief. The local people, here as in much of Laos, depend on fish and rice as their main sources of food. People are accustomed to using simple, traditional equipment for catching fish. If such a big change in the river takes place, what will be the impacts on the people? Who will take the responsibility for making fish productivity increase? Does the project have any specific plans for fisheries? This is not mentioned either. Who would benefit from such a scheme that would probably require more modern fishing equipment? On the other hand, in the stretch downstream of the dam where the river will be dried out several months of the year, what will become of the people there who also rely on fisheries?
There [should] be further study of this project, to analyze deeply both the possible positive and the negative impacts. And to give a chance to local government and local people to know about these plans, so that all concerned are able to express their opinions. Or at the very least, so that local people have an idea of the changes that are coming and have time to prepare.

(Sayakhoumane 1994: 28)

Even Per Sjöström, senior ecologist for Vattenfall, pointed to three crucial areas that were not covered in sufficient depth in the Norconsult report: water quality; fish production and fish migration; and material transport and sedimentation. He also noted the absence of concrete plans for fisheries management in the reservoir, rural electrification, irrigation, and mitigation of downstream impacts (Per Sjöström, Interview, 27 January, 1994). He insisted, however, that his company had already decided to proceed with the project, and that these concerns could be addressed along the way (Per Sjöström, Interview, March 1994). In 1995, at a public meeting with Swedish environmentalists, Sjöström defended Norconsult's study and assured the gathering that more water in the reservoir would mean more fish.

Given the widespread criticism, it is perhaps not surprising that NORAD eventually conceded that Norconsult had not performed adequately. NORAD's deputy chief Sven Holmsen told the Norwegian press: 'Everyone now agrees that it was a mistake from the outset.... We agree that we don't have enough information. Relevant questions have been asked on environmental aspects of the project' (Development Today, 15 October, 1993). The agency even admitted that Norconsult should have been disqualified from the beginning because it was, in fact, part-owned by Statkraft. Holmsen described the selection of Norconsult as something akin to 'asking the fox to watch the geese', and as a result of the Theun Hinboun debate, NORAD stated formally that never again would a consultant with a vested interest in the outcome of a dam project be selected to undertake its environmental impact assessment. In 1994, the agency called for an additional environmental study of Theun Hinboun to be done, and hired Norconsult's competitor Norplan for the job. But these gestures had no impact on the dam that is being built in Laos today.

True, Norplan's supplementary studies were relentless in their criticism of the first Norconsult report, contradicting all its major conclusions. On local people's participation in the project: '[Villagers] have no idea of the potential changes. ... They also seem to have no choice but to accept any environmental consequences from the project' (MIDAS and Burapha 1995: 40). On the importance of fish, which Norplan agrees are likely to be degraded, possibly to the point of extinction of some species, by the dam: 'Fish is the staple source of protein in the diet and is eaten at almost every mealtime. It is also a main source of income of farmers in the area' (MIDAS and Burapha 1995: 18). On the impact on wildlife: 'None of the numerous threatened species located during the current survey was found [by Norconsult].... [The report] lists various reasons as to why there were no indications of endangered species in the project area. In fact, all these suggestions are irrelevant and misleading: the conclusion concerning threatened wildlife is inaccurate and was presumably reached because field work was exceptionally brief' (Wildlife Conservation Society 1995: 26). On the importance of riverside vegetable gardens, the supplementary study stated that these constituted an 'important contribution to household nutrition' (MIDAS/ Burapha 1995: 18).

The Norplan study was commissioned too late in the process, evidently more to placate an exasperated public than to improve the project, which was a year into construction by the time the report was finished. NORAD and the Norwegian Aid Minister, Kari Nordheim-Larsen, appeared to ignore its findings. Having signed commercial agreements years ago, with US $1 million already allocated for compensation measures, the Nordic and Thai investors have no obligations.
What, then, of the men who wrote the Norconsult study? Encounters with these consultants confirm their strong bias in favour of hydro power, as well as the ideologically charged nature of the subject matter. But arranging a meeting with the author of Theun Hinboun's environmental study was no simple matter. In the first place, as Norconsult's Gjermund Saetersmoen explained in 1993, the company had no one with the appropriate expertise in the ecology of Lao rivers, and therefore sub-contracted the work to an Australian consultant based in the region. (Not to overstate the case, this in itself raised questions about why the firm was selected to do the environmental review in the first place.) It was not until the following year during a visit to Norway that it was possible to organize an interview, in which Charles Adamson, who had written the environmental portion of the Norconsult study, responded to the various criticisms.

The consultant lamented the lack of sensitivity of outsiders to the region: 'It is difficult for people living outside to understand the poverty in Laos. It is unethical and disappointing that people are wanting to hold back development in countries where the population is suffering' (Charles Adamson, interview, 4 June, 1994). His concern did not appear to extend to those who will be negatively affected by Theun Hinboun.

Adamson reiterated that he foresaw no need for compensation payments because no homes or paddy land will be flooded. The forests being cleared to make way for 100 kilometres of transmission lines are merely 'secondary regenerating forests in fields that have been left fallow', he said. As the forest farmers working these fields have no legal ownership of the land, they are, in Adamson's opinion, entitled to no compensation when it is appropriated. 'There may be a claim of ownership, but ... if you want to talk about compensation, then you are referring to permanent agriculture. It would be unusual to compensate people for bits of regenerating ground that have transmission lines going through them', he said. Similarly, farmers who practise seasonal agriculture in the 'draw-down' zone of the river banks in the area of the reservoir during the dry season should get nothing to compensate for the loss of this land either. 'It is a very small area ... [and] they can draw water from the headpond', he said.

Though Adamson admitted that he is not a fish expert, he maintained that the Theun Hinboun will improve the situation for local people by increasing the level of water behind the dam, thus creating an ideal environment for raising fish. In the report, the claim was accompanied by no details about how such a scheme will be organized, who will pay for it, and how the original fisherfolk of the area - accustomed to fishing indigenous species - will benefit.

The fact that 40 kilometres of the Theun river will be dried up three to four months of the year, thus potentially destroying the habitat below the dam for numerous species of fish in the basin, was not elaborated in the consultants' discussion either. Adamson agreed that after Nam Theun 2 is completed, the river's dry period will extend to six months each year. His line of argument was that there is not enough yet known about the patterns of fish movement to be sure that the overall affects will be negative. Rather than opting for a precautionary approach, he insisted that since there is at least a possibility that fish in the Theun river are not as dependent on fixed migratory routes as Arctic salmon, they may crowd into other tributaries to avoid the Theun while it is dry. 'Our attitudes have always been based [erroneously] on salmonid species ... that have routes into specific areas. We are assuming that tropical fish also have definite migratory routes. The question is, would those fish that normally populate the Theun river downstream of the dam be likely to take an alternative route?' - for example, up an inflowing tributary like the Nam Mouan.

The question remained unanswered in the Norconsult report.
Adamson's summary of the fish situation in the Norconsult report was indeed stunning in its optimism:

Upstream of the dam the headpond will create an enhanced deep water habitat which did not exist before and this will improve productivity and provide an additional dry season habitat for fish.... The creation of the headpond can have beneficial consequences on public health conditions. The increase of fresh water fish can provide an improved nutritional source for villagers. (Norpower 1993: 24)

The basis for such claims is impossible to guess as extremely little scientific study has been done on the ecology of fishlife in the rivers of Laos, and the consultants did not draw on the rich knowledge of local people either. The claims look stranger still given the findings of a February 1992 study of aquatic life in the project area, sub-contracted by Norconsult, which were explicit about the abundance of fish life:

Around 147 species of fish are found in the survey areas covering [the] headpond area [of] Nam Theun, Nam Kading below [the] damsite down to [the] mouth of Nam Kading (Mekong river) ... in all water sources; rivers, rivulets, swamps, lakes, lowland paddy fields (found in rainy season only) ... 51 are found all year round, 21 are found at the beginning of the rainy season, 20 at the end of the rainy season and 52 in the dry season.... In the headpond area [of] Nam Theun 98 species were found. (Department of Livestock 1992: 5.1-5-1)

It is probably safe to say that rivers and streams are second only to the forest as the most important asset for rural communities, which make up the vast majority of the country's population. Local people are believed to catch at least 18 species of fish in the Theun river for eating or for sale, fresh, dried or fermented (Department of Livestock 1992: Table 11). In Ban Kangvit, upstream of the dam site, villagers catch several tonnes of fish each year and then sell to traders who come from the market at Laksao, 35 kilometres away. When there is not enough rice or when the crop fails, people usually harvest more fish and sell or barter it for rice. Along the lower Nam Hail before it meets Nam Hinboun river, people lose their rice crop to prolonged flooding every few years, at which time they rely more heavily on fishing.

Evidence of the vast diversity of fish species in these river systems can be seen in the variety of equipment used by local people. Local fishing tackle has become highly adapted over centuries of practice to catching the fish, some of which migrate up from the Mekong. There are reportedly at least 20 different types of fishing tackle commonly used along the Theun and Hinboun rivers, varying with the season, river conditions and fish species.
In 1994, the Lao government presented a final report to the Asian Development Bank, which clearly drew on Norconsult's assessment:

A larger body of water will be created with potential for increased fish production. A fishery management plan will be introduced to the headpond area that will restock the area with indigenous species and establish the necessary fishing infrastructure and markets. The resource will be controlled by involving the provincial and district administration in the program. The project has been costed at US $195,000 and will be established by the Ministry of Agriculture, Division of Livestock and Veterinary Services. The program will be based on experience that the Department has in setting up a similar project on the Nam Ngum reservoir near Vientiane. (Asian Development Bank 1994: 15)

Nam Ngum, the first dam in Laos, is the national symbol of modernization and independence. Therefore it is a success story, officially at least. But Nam Ngum was built during the war, and there are no official records of pre-impoundment fisheries, which makes it difficult to validate claims that the Nam Ngum fishery is an improvement on nature. Anecdotes and scattered documentation, however, seem to suggest that although fisheries boomed initially because of the huge area of inundation, catches of native and introduced species have since fallen off.

Notwithstanding the Lao government's hopes of reproducing the experience of Nam Ngum, it may be entirely inappropriate to compare this dam with Theun Hinboun because of significant differences between the two reservoirs. The Theun Hinboun 'headpond', as Norconsult called it, will be a two-pronged reservoir, 24 and 14 kilometres in length, kept within the natural river banks. It will inundate less than 10 per cent of the surface area of the Nam Ngum reservoir, thus providing that much less organic material in the initial stages after the flooding. It is therefore unlikely that a similar boom in the fish population will occur as a result of this new dam.

A better comparison may be found by looking across the border at the World Bank-financed Pak Mun Dam in north-east Thailand. A 136-megawatt run-of-river dam with a narrow 60-kilometre-long reservoir, built also on a large Mekong tributary whose high fish diversity maintained farming and fishing communities, Pak Mun is similar to Theun Hinboun in ways ranging from size, type and function (peak power generation) to its ecological and social impacts.

As with Theun Hinboun, Pak Mun project proponents claimed all along that there would be no significant impact on fisheries or people. After failing to convince the government that further study was needed, Thai students, villagers and NGOs did their own survey and found that fish catches upstream of the dam were already declining significantly during construction of the dam on account of the twice-daily blasting of rapids and other disturbances that were causing permanent damage to spawning grounds and migration routes (PER 1993).

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Opposition against Pak Mun began in 1989, when the Thai Cabinet first announced its approval of the project. It was only in 1994, though, that a government committee, set up in response to the years of public protest, announced that 2,140 families upstream of the dam qualified for compensation ranging from 8 baht to 100,000 baht. This compensation scheme, so long in coming, was criticized for being unfair and arbitrary, and itself prompted the largest and longest Pak Mun protest rally by local people to date, as well as criticism from the government's own committee on human rights and justice (The Nation, 4 November, 1994). In March 1995, EGAT announced a revised package of 30,000 baht in cash to over one thousand families affected and 60,000 baht for each family to be put into a job development fund. By late 1995, an additional 3,000 people in 45 villages upstream were demanding compensation for lost fisheries upstream of the dam (Bangkok Post, 8
In addition to compensation, the Thai Fisheries Department has responded to the destruction of natural fisheries by stocking the river with exotic species of fingerlings from its fish-breeding stations. But fisheries officials make no claim that this will replace or improve the decimated natural fisheries.

As a last-minute extra, a fish ladder was built into the Pak Mun Dam in an attempt to diffuse some of the criticism about the damage to fish habitats. It will be at least three years before the department will be able to evaluate how effectively it has functioned. In January 1995, however, the Director General of the Thai Fisheries Department told *The Nation*:

> We admit that we are working on the fish ladder technology with very poor knowledge about its efficiency. We know nothing about the pattern and behaviour of fish migration. We don't know what species and how many fish daily migrate from the Mekong to the Moon. How far they can go, where they spawn their eggs and how high they can jump.

(*The Nation*, 27 January, 1995)

Local fisherfolk have already made their own assessment of the situation. Since the closure of the dam's flood gates in June 1994, they report that they have seen only two species of fish near the dam site. *Pla hua taek* (fish with crushed heads) have been sighted in the Pak Mun fish ladder - their heads are smashed as they swim into the concrete ladder - while *pla mai mee hua* (fish without heads) can be observed in the outflow channel below Pak Mun's four turbines. To his credit, Charles Adamson of Norconsult remarked in 1994 that Theun Hinboun would have no fish ladder added to its design because, as he put it: ‘They don't work’ (Charles Adamson, Interview, 4 June, 1994).

Norplan's supplementary study for Theun Hinboun did raise the possibility of adding a fish ladder to the dam. But as with the question of minimum flow, no decision had been taken by early 1996. Vattenfall's Bengt Toolanen, responsible for technical aspects of the project, estimated that the passage could still be added as late as 1997; though none of the developers seem to believe that it would do much good.

In the absence of proper study beforehand, the struggle for compensation and recognition of the destruction caused at Pak Mun has been a case of the villager's word against the Thai authorities, World Bank staff, and their select circle of consultants. In a country with a free press and open debate, it took years of public pressure and protest for the Thai authorities to concede finally in 1994 that the Pak Mun Dam did in fact destroy livelihoods and that people were entitled to compensation. And, as in the case of Theun Hinboun, none of these costs were assessed prior to the decision to build.

The difference in Laos, of course, is that villagers in the Theun and Hinboun river basins have limited power to dispute with or oppose the government in its decision to expropriate the river for the production of hydro power. Should Theun Hinboun cause similar impacts to those of Pak Mun in Thailand, affected people will have little recourse in the absence of a free press, strong environmental organizations and independent academics who can safely engage in critical debate. Villagers along the Mun river, sharing a similar language and culture with their neighbours across the Mekong, have often expressed a willingness to share their bitter story. But the prospect of organizing village-to-village exchange illicits only fear of reprisal and jail sentences on both sides of the Mekong.
The more likely scenario is that EGAT will proceed to buy power from the Theun Hinboun Dam, and the foreign investors will reap their profits without the nuisance of protests and demands for compensation.

WHOSE KNOWLEDGE IS POWER?

How can such gigantic errors occur time and again? How can the experts make such claims? And how can the aid agencies accept these claims with so little discretion? The social impacts portion of the first report, which Norconsult sub-contracted to Uppsala University anthropologist Jan Ovesen, provides yet another example of the kind of power wielded by the experts. This one determined that Theun Hinboun would have no negative social impacts because the area has no particular cultural significance. As Ovesen describes in the introduction to his report, he came to this conclusion during a 16-day visit of 22 villages in the Theun and Hai basins - an area he referred to as ‘hitherto ethnographically unknown’ - in which he found no evidence of an ‘ancient culture’ or valuable artifacts. Though he noted that communities are largely self-sufficient from paddy and swidden farming and a brisk trade in forest products and fisheries, he concluded that ‘from an anthropological point of view, [the project] can only have positive ... effects on the society and culture’ (Ovesen 1993: 55). Stating that swidden (or rotational forest) farming is doomed in any case - ‘there are no sacred cultural values inherent in swidden cultivation (Ovesen 1993: 13) - he recommended that communities in the reservoir area be encouraged to move south to the Hai river basin, where there is more paddy land available. ‘I have been unable to detect any ways in which the project could adversely affect any of the population groups in the area’, he concluded (Ovesen 1993: 54).

Given the shortcomings of the environmental review up to that time, it is hard to understand how an anthropologist could make such a statement. The Theun Hinboun Dam is likely to degrade the resource base of subsistence communities, principally by destroying fisheries up and downstream, on which people are dependent for protein and income, and by flooding their seasonal agricultural land, which provides important nutritional supplements to daily fish and rice. Even if no houses or paddy land are inundated (there is virtually no paddy cultivation in the Theun and Gnouang basins), all indications are that the dam will threaten the food security of people who are already very poor. The failure to identify such crucial issues raises questions both about the experts and about the aid agencies that take these claims at face value.

What, then, will be the social and ecological impacts of the Theun Hinboun Dam? What costs will be borne by local people and by Lao society that should be weighed against foreign-income earnings? What of Laos' need, as identified by Indo-China specialist Philip Hirsch, to earn cash in such a way that the impacts on the rural majority are not too devastating? Clearly, the Norwegian environmental impact study offers little help in answering these questions because most of the negative impacts were neither measured nor described. The supplementary studies were critical, but came too late and will probably have no impact on the project design. And if Theun Hinboun is a less environmentally destructive dam than the many others currently being planned, as the Nordic builders claim, there is good cause for concern about the overall impacts of the hydro spree in Laos.

Around the world in countries North and South, the emergence of civil society in the form of peasant movements, environmental groups, a free press, independent scientists, and so on has forced a recognition of the ecological and social costs of dam projects. Ironically, it is this very environmental debate in Thailand and the industrialized world (and the lack of it in Laos) that makes the country attractive to dam builders. They are engaged in a race for power in Laos - for economic, political and hydro power - taking full advantage of the country's vulnerability. As has occurred in Thailand, Sweden and Norway, though, awareness and public debate will presumably,
eventually, be possible in Laos as well. Only with the development of such democratic and environmentally informed criticism is there hope of the impacts of projects like Theun Hinboun gaining their proper place on the national political agenda.

WHAT COMES AFTER THEUN HINBOUN? Gríinne Ryder

In 1991, the Lao government announced its plans to build at least 23 dam projects by the year 2020, which would cost about US $7 billion. Vientiane, the capital of the former French colony, is now bustling with dam builders and their consultants. 'You find us the money; we'll give you a river', said an official of the state-owned Electricité du Laos to a visiting hydropower consultant in 1995. Some of the major projects which are already financed and under construction or seeking financing are as follows:

Nam Theun 1 (400 megawatts), downstream of Theun Hinboun, would flood about 500 square kilometres of river valley and lowland forest and displace more than 5,000 people. SUSCO, a natural gas distributor and owner of petrol stations in Thailand and Laos, signed a Memorandum of Understanding in 1991 with the Lao government. In 1995, Electrowatt Engineering Services of England, a British subsidiary of the giant Swiss utility Electrowatt, conducted a feasibility study including a preliminary resettlement and environmental survey.

Nam Theun 2 (681 megawatts) is a project of Nam Theun 2 Project Development Group, a consortium which includes Ital-Thai, one of south-east Asia's largest construction companies, Transfield of Australia, the state-owned Electricité de France, the telecommunications company Jasmine International, and the Thai investment house Phatra Tanakit. To date, the Thai Export-Import Bank has provided 5 per cent of the costs to the consortium to get the project off the ground. The Lao government has requested US $90 million from the International Finance Corporation and a World Bank guarantee to protect commercial investors. The bulk of the US $1.2 billion cost is expected to come from commercial banks and export credit agencies.

Three leading commercial banks - Barclays (UK), Société Générale (France) and Deutsche Bank (Germany) - have all expressed interest but will lend to the consortium only if the World Bank guarantees their investments. The World Bank has been advising the Lao government on Nam Theun 2 and its hydro-power development strategy intermittently since 1990. In 1995, the Bank requested further social and environmental studies from the Nam Theun 2 developers before it made a decision, effectively delaying the project until 1997. EGAT announced in May 1996 that it would cancel its plans to buy electricity from the dam unless the developers satisfied the World Bank's requirements within the next six months.

Nam Theun 3 (190 megawatts) will start being built immediately, stated the Laotian official news bulletin Khao Pathet Lao in February 1996. The dam would be upstream of Theun Hinboun and Nam Theun 2. The Lao government holds a 20 per cent share in the project, which is being developed by a US company, the Heard Corporation.

Nam Leuk, co-financed by Japan and the Asian Development Bank, aims to divert water to the reservoir of the Nam Ngum Dam to increase its power output. The Japanese government is expected to provide about 40 per cent of the costs, US $85 million, ending a 20-year suspension of yen loans to Laos. The inability of the Lao government to repay its 5.2 billion yen (US $51 million) loan for the Nam Ngum Dam has been an obstacle to new Japanese
According to a Foreign Ministry official in Vientiane, the Japanese will be watching Nam Leuk closely before deciding on the next project to assist.

Nam Ngum 2 (320 megawatts) has been proposed by a consortium, headed by US businessman Milton Shlapak and comprising Siemens and Bilfinger of Germany, Bechtel of the US, and MDX of Thailand, a part-owner of Theun Hinboun. According to the official news bulletin Khao Pathet Lao, Shlapak submitted a feasibility study to the Lao government in August 1995, describing the project as highly feasible for an investment of US $650 million and a concession of 25 years. Construction is expected to start at the end of 1996. According to the news bulletin, the consortium will be responsible for compensating and relocating people from the construction site.

Nam Ngum 3 (600-700 megawatts) is to be developed as a joint venture led by MDX of Thailand, part-owner of Theun Hinboun, which has reportedly offered EGAT an acceptable price for the electricity.

Nam Tha 1 (200 megawatts) was highly recommended in a 1994 Norconsult/ADB energy study for further study and private-sector investment. SP International Group of Thailand began a project feasibility study in October 1995. The Lao government holds a 25 per cent share in the project, which is located in northern Laos.

Houay Ho (150 megawatts) in southern Laos was already 30 per cent built in 1996 and is expected to be operational in 1998. Developers include Daewoo of Korea, with a 60 per cent share, and Loxley of Thailand, with a 20 per cent share. Loxley is a private company, owned by a founding director of the Thai energy utility EGAT, which built its fortune on transmission equipment. The Hydroelectric Commission of Tasmania had hoped to win the concession for Houay Ho, but 'the Koreans got there first and put a big bag of money on the table', said a Commission employee. The developers agreed in January 1996 to sell Houay Ho's power at US 4.22 cents per kilowatt hour after EGAT threatened to drop negotiations and speed up talks with Nam Ngum 3's developers instead.

Xe Nam Noy (200 megawatts) would be located in the dense forests of southern Laos and would displace six minority communities. Sources in Vientiane report that the government has already allocated land for resettlement and told people that they will have to move. Swiss Electrowatt was subcontracted by Korean developers Dong-Ah to conduct a pre-feasibility study in 1995.

Xe Kaman 1 (255 megawatts) in southern Laos, at 185 metres, would be the tallest dam in Asia. The Hydroelectric Commission of Tasmania signed a contract with the Lao government last year to build it. John Holland of Australia, the company that built the Australian-financed Friendship Bridge across the Mekong between Laos and Thailand which opened in 1994, would be responsible for construction. A Tasmanian company has been granted rights to manage logging and forestry operations in the Xe Kaman watershed instead of the Lao military's company, DAFI, which has controlled all forestry operations until now.

Finance is expected to come from a consortium of Singaporean, Malaysian and Thai banks. Logging of the reservoir area, resettlement of villages and plywood production are already underway.

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