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Old and New Hydropower Players in the Mekong Region: Agendas and Strategies

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Introduction

The countries of mainland Southeast Asia and Yunnan Province, China, threaded together by the Mekong River, are currently enjoying a period of stability and rapid economic growth not experienced for centuries. As a result, the region demands increasing quantities of electricity, especially in China, Thailand and Vietnam. Government electricity-demand forecasts and plans to meet this growth are, however, challenged by civil society. Since the early 1950s, frequently controversial and as-of-yet only partly fulfilled plans for extensive large-scale hydropower development have been high on the agenda of the Mekong country governments. Yet, in a region where millions of people depend upon the natural resources that rivers provide, many proposed dams pose risks for the environment and rural communities, as well as, ultimately, for project developers and the host governments.

The World Bank, the Asian Development Bank (ADB), international agencies such as the United Nations (UN), bilateral donors and an entourage of largely Western hydropower companies and consultants have long played a role in pushing forward the hydropower agenda. Their motives have ranged from the ideological to the political to simple financial gain. Yet, as the new century has dawned, new economic realities and political relationships have emerged. Today, private-sector hydropower developers, mainly from Thailand, Vietnam, China,

Malaysia and Russia, have picked up hydropower plans abandoned by Western companies during the Asian financial crisis – often backed by influential political players and their governments' bureaucracies and with the support of financiers from their own countries. These new hydropower proponents appear to hold a new determination to get the job done without becoming entangled in what they consider to be burdensome environmental and social dilemmas that have often dogged dam projects in the past (Middleton, 2008).

This chapter explores how the ADB and the World Bank have influenced the development of dams and electricity infrastructure in the Mekong region, and have attempted to orientate national policies towards private sector-led development. It evaluates to what extent the banks have applied their environmental and social standards in the region, and discusses the implications of the banks' evolving role and declining influence. The chapter identifies the new actors that are now developing, building and financing hydropower projects in each of the Mekong countries. The absence of environmental and social safeguard policies among these new actors, combined with the weak implementation of the host countries' national law, is identified as a threat to the ecological health of the Mekong Basin. The chapter argues that these new actors and the region's governments should adopt international frameworks of best practices that will significantly reduce the risk of developing poorly conceived projects.

Old players and the region's new 'electricity hunger'

Driven by rapid industrialization, export-led economic growth and expanding domestic consumer markets, demand for electricity is growing in the Mekong region, although the magnitude of this growth is contested between government agencies and civil society groups (Greacen and Footner, 2006; VUSTA, 2007). The Thai government estimates that Thailand's electricity demand will approximately double to 58,000 megawatts (MW) by 2021 (EGAT, 2008). In Vietnam, one of the world's fastest growing economies, the government predicts that electricity demand will almost quadruple to 40,700MW by 2015 (EVN, 2006). Myanmar/Burma, Cambodia and Laos have more modest demand growth predictions, although all governments have committed to urgently develop electricity infrastructure to support economic growth and provide electricity services to rural areas.

In the eyes of water engineers and power planners, the limited exploitation of the Mekong River system's hydropower potential – in a region undergoing rapid economic growth – seems a global anomaly (Ratner, 2003). Thailand, which has already developed much of its domestic hydropower potential and faces civil society opposition to further projects at home, plans to import at least 14,000MW of hydroelectricity from Myanmar, Laos and China's Yunnan Province over the coming 15 years (EGAT, 2008). Vietnam plans to develop almost all of its viable domestic hydropower over the next 20 years, and to import hydroelectricity from Cambodia,

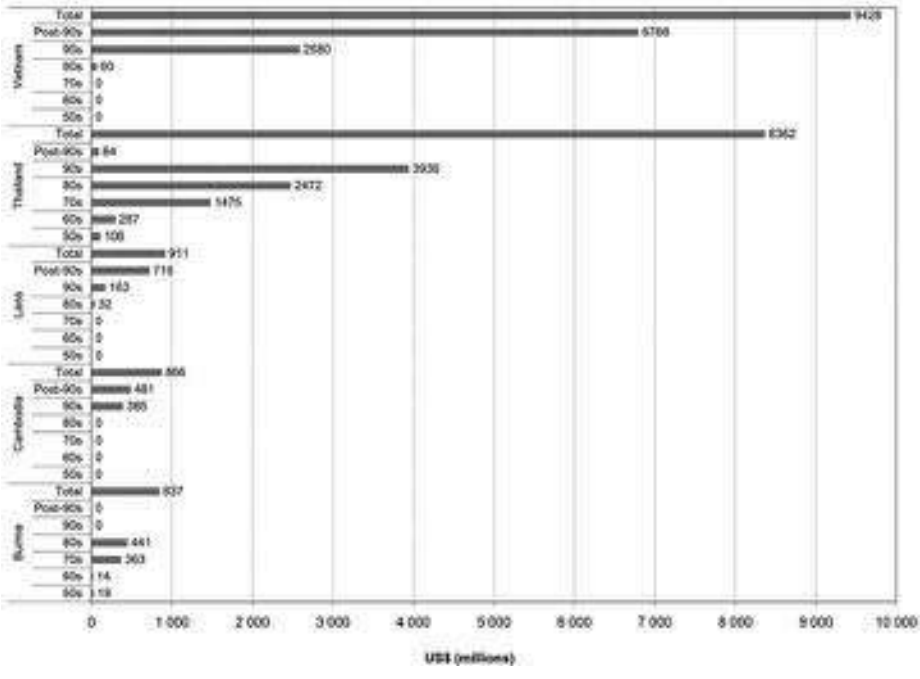

Figure 2.1 *History of World Bank financing in Mekong countries*

Source: World Bank projects portfolio online database

China and Laos (EVN, 2006). Responding to this demand, the governments of Cambodia, Laos and Myanmar are keen to develop their hydropower potential for electricity export and domestic consumption. Other global factors – particularly rising oil prices and the growing carbon offset market – have increased large hydropower's attractiveness in the eyes of the region's governments.

Over the decades, the World Bank and the ADB have played a significant role in shaping the region's electricity sector and in promoting hydropower. They have done this through hosting meetings between key decision-makers; supporting technical studies that promote hydropower development and the regional integration of power systems; offering financial, legal and other forms of expert advice; providing concessional loans,[1] grants, and risk guarantees; and brokering public–private financing deals.

At present, all Mekong countries are members of the World Bank and ADB, although, over the decades, the extent of their interaction has varied as a result of the politics of the region and the banks' policies (see Figure 2.1). The World Bank built a strong presence in Thailand from the 1950s, as did the ADB from the mid 1960s. Their relevance, however, as a major source of development aid

has substantially decreased over the last ten years, particularly since the 1997 Asian financial crisis. Cambodia and Vietnam's membership was each suspended in 1975 and 1979, respectively, and was only restored during the early 1990s. Lending to Cambodia and Laos has accelerated since the 1990s, although it is Vietnam that is now the region's largest borrower. The World Bank and ADB ceased their lending to Myanmar in 1987 and 1986, respectively, a consequence of international aid embargos invoked in response to the Myanmar military junta's ongoing human rights violations.

The Western government-backed Mekong Committee (and its most recent guise, the Mekong River Commission) has also actively supported large-scale water resource development (see Chapter 14).

Brief history of dam development in the Mekong region

Early development

Plans for extensive multipurpose dam development in the Mekong region were first conceived during the early 1950s by the US Bureau of Reclamation, which was convinced that the Mekong River's annual flooding was destructive and needed to be tamed to pave the way for modern agricultural techniques (Sluiter, 1992). Inspired by ambitious mega-schemes under way along the major rivers in the US at the time, it envisioned a cascade of mighty dams along the Mekong River that could store water for irrigation and provide cheap hydroelectricity that would power the region's industrialization process (Ryder, 1994; see Chapter 1).

In 1957, the governments of Cambodia, Laos, South Vietnam, and Thailand established the Mekong Committee under the auspices of the UN, which hosted a secretariat to bring the vision to fruition (Bakker, 1999). With the technical support of the US Bureau of Reclamation, as well as funding from the US and other Western countries, the Mekong Committee drafted detailed plans for a cascade of seven massive mainstream multipurpose dams. With a combined reservoir capacity of more than one third the Mekong's annual flow, the dams were conceived to provide 23,300MW of hydroelectricity, and to store water for irrigation, flood control and improved navigation (Ryder 1994). The Mekong Committee also prepared plans for dam cascades on the Mekong's tributaries and large-scale water transfer projects for irrigation, identifying, in total, 180 potential dam sites (Bakker, 1999).

As the Cold War escalated, the work of the Mekong Committee also became a central plank of US and Thai strategy to prevent the Mekong region from slipping into the clutches of communism (Muscat, 1990; Ratner, 2003; see Chapter 1). US and World Bank technical advice and financing supported several large power generation projects in Thailand (including the Bhumipol Dam, in 1964, and the early stages of Thailand's electricity transmission network; Greacen and Greacen,

2004), as well as the establishment of a state-owned electricity utility, the Electricity Generating Authority of Thailand (EGAT), a central player of hydropower development to this day.

The 150MW Nam Ngum 1 Dam, the first large hydropower dam in Laos, was built with technical advice from the Mekong Committee and the World Bank during the late 1960s. Located 90km north of the country's capital Vientiane, the project foreshadowed what would become the predominant development strategy of Laos from the 1980s onwards, with Nam Ngum 1 selling 70 to 80 per cent of its power to Thailand. Inaugurated in 1971, the Nam Ngum 1 Dam became a significant earner for Laos, although the project suffered poor water quality and at least 800 families were resettled to make way for the project, yet received no compensation (Hirsch, 1998). Furthermore, if World Bank and ADB grants and concessional loans had not paid for its construction, and Japanese aid provided for its repairs, it is highly doubtful the project would have been profitable (IRN, 1999).

In Vietnam, throughout the Cold War period, Russia provided support in much the same way that the US and World Bank supported Thailand (Greacen and Palettu, 2007). Russian support for the development of Vietnam's electricity sector was channelled through the state-owned monopoly, Electricity of Vietnam (EVN). Significant technical and financial support was provided for Vietnam's earlier hydropower projects, including the massive 1920MW Hoa Binh Dam (commenced in 1979 but completed in 1994) – still mainland Southeast Asia's largest dam. The project resettled between 50,000 and 60,000 mainly ethnic minority people, the majority of whom continue to suffer impoverishment, as do many more people affected indirectly (Hirsch, 1998).

From the mid 1960s, the Mekong region progressively descended into almost three decades of political instability and conflict. As the war in Vietnam spilled over into Laos and Cambodia, the Mekong Committee's mainstream dam cascade plans were shelved, and the committee itself disintegrated in 1975 (Sluiter, 1992; see Chapter 14).

From 'battlefield to marketplace'

The geopolitical implications of the collapse of the former Soviet Union in 1991 and the weakening of its satellite states since the mid 1980s set in motion substantial shifts in the Mekong region's political and economic landscape. Starting in the late 1980s, as regional stability was largely restored, Western bilateral aid agencies, the World Bank and the ADB once again returned in earnest seeking aid and investment opportunities, and supporting hydropower was high on their agendas.

In 1992, the ADB launched the Greater Mekong Sub-Region (GMS) programme, endorsed by the region's governments, which set a path towards regional economic integration (ADB, 2007a). Orientated around establishing a neoliberal

market-based economy, the crux of the GMS programme to date has emphasized the physical interconnectivity of the region, entailing the construction of major infrastructure projects such as transnational highways, railways, hydropower dams and regional transmission lines, as well as programmes that encourage cross-border trade and the integration of markets. The GMS programme has replaced the earlier Mekong Committee as the principal framework for channelling economic development assistance into regional projects (Ratner, 2003).

The integration of electricity markets through a regional transmission grid and the establishment of a regional competitive power market is a priority of the GMS programme. The plan envisages a network of high-voltage transmission lines linking the Mekong countries and opening up mountainous regions mostly in Myanmar, Laos and Yunnan Province of China to hydropower projects, which would be developed mainly by the private sector. A study commissioned by ADB in 1994 (Norconsult, 1994) recommended the development of a series of large hydropower dam and regional transmission interconnection projects, and the formation of an intergovernmental Electric Power Forum (EPF) to coordinate the plan's implementation, first convened in 1995.

In 2002, the ADB consolidated its plan for a regional transmission grid with a second study that recommended a US$43 billion generation and high-voltage transmission system in the Mekong region fuelled exclusively by hydropower, with 12 dams in Cambodia, China, Laos and Myanmar (Norconsult, 2002). The ADB-led plan gained political momentum in 2002 at the first GMS summit when the GMS country leaders signed the Intergovernmental Agreement on Regional Power Trade, committing to establishing a regional power market. The second and third summits, however, signalled a weakening of commitments and a growing reluctance to commit to the plan in full due to the region's utilities' reluctance to commit to privatization, as well as technical concerns.

Numerous criticisms have been raised against the ADB's Mekong Power Grid plan. Chief among them is that the economic benefits appear marginal at best; the ADB's own study estimated that a combined investment in transmission and generation of US$43 billion would reduce investment costs by just over 2 per cent compared to a limited power trading scenario (Norconsult, 2002). Yet, in this plan key costs are not accounted for, such as regional control centre facilities, and costs for hydropower schemes are based largely on assumption, rather than site-specific surveys – a fact pointed out even by the ADB's own consultants – throwing serious doubts on the plan's economic viability (Garrett, 2004; Soluziona, 2004).

The ADB itself has recognized some of the weaknesses of the programme. It has questioned whether achieving competitive regional power trade is realistic given the current governments' reluctance (ADB, 2007a). The ADB has also recognized that more needs to be done to address the social and environmental impacts of hydropower development. Despite these concerns, the ADB, as well as the Japanese, French and Swedish bilateral aid agencies, and the World Bank, all continue to provide financial support to the programme.

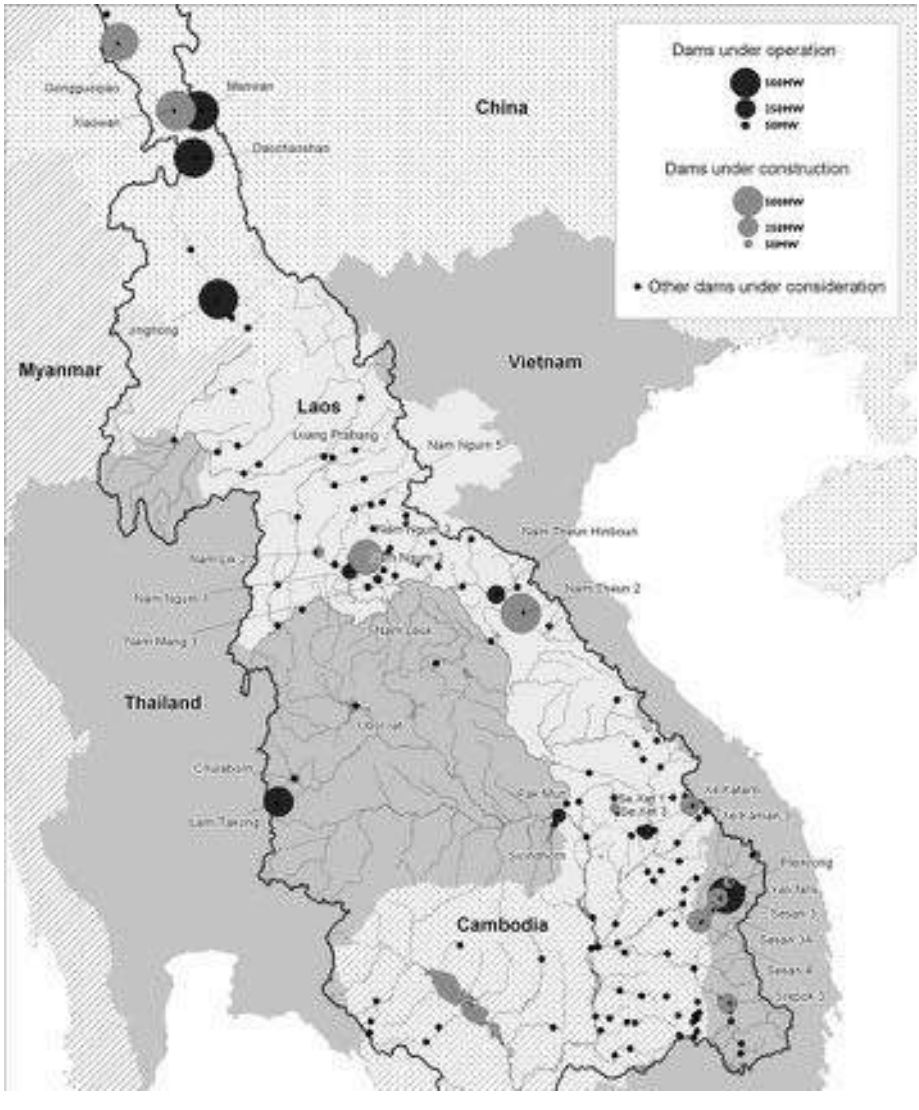

Figure 2.2 *Location of dams in operation and under construction in the Mekong Basin*

Source: Drawn by François Molle

Current trends in regional hydropower development

The technical studies, advice and financing of the ADB, World Bank, Mekong Committee and bilateral donors fundamentally shaped the Mekong region's electricity development path during its early stages. This section outlines recent developments in each Mekong country.

Thailand: A voracious power market

During the early 1980s, a credit crisis forced the Thai government to borrow heavily from the International Monetary Fund (IMF) and the World Bank. Conditionalities attached to the loan required the privatization of state-owned enterprises, including EGAT, although this was strongly resisted by Thai labour unions and academics and, ultimately, defeated. As Thailand's economic growth continued and private capital became more readily accessible, the relative importance of the World Bank and ADB as financiers declined (Greacen and Greacen, 2004). The World Bank's final loan to Thailand's domestic hydropower sector was the controversial 136MW Pak Mun Dam project, commissioned in 1994 with co-funding from EGAT (see Chapter 3).

By the early 1990s, a series of pro-market governments increasingly supported power-sector reform, including a role for the private sector. Consequently, Thailand's first independent power producer (IPP), the Electricity Generating Public Company (EGCO), was formed in 1992 from an EGAT subsidiary and commenced trading on Thailand's stock exchange in 1995. By 1997, EGAT had signed contracts with seven IPPs. As the Asian financial crisis struck in 1997, the World Bank and IMF again provided major loans that were accompanied by conditionalities that pushed for the accelerated privatization of the electricity industry, the corporatization of EGAT and a competitive power market (Greacen and Greacen, 2004). However, before these reforms could be fully adopted, the government of Thaksin Shinawatra came to power and once again revised the privatization model, this time to a concept of 'National Champions' – a mode of privatization whereby the state-owned enterprises partly raise capital on the stock markets, but the government retains majority ownership.

Neither the World Bank nor the ADB currently have active lending programmes to Thailand. Both, however, have sought to build a relationship with the government through the transfer of knowledge and skills, rather than financial resources – for example, promoting carbon trading under the Kyoto Protocol's Clean Development Mechanism (World Bank, 2005a; ADB, 2007b). While Thailand's government maintains wariness towards the banks, it has welcomed their efforts in smoothing the way for bilateral power trade, notably their role in pushing through the Nam Theun 2 Hydropower Project in Laos in 2005, which exports 95 per cent of its power to Thailand (see Chapter 4).

EGAT now faces increasing fossil fuel prices, a need to diversify its energy mix (which is currently dominated by natural gas), growing public concern about climate change, and strong opposition to building new large power stations at home. As such, EGAT has increasingly favoured importing hydropower from neighbouring countries. In its 2007 *Power Development Plan*, 4000MW of hydroelectricity imports are planned from Laos between 2008 and 2015, and an additional 8700MW from unspecified neighbouring countries by 2021 (EGAT, 2008). Developing hydropower projects in neighbouring countries – where public

opposition is stifled and the rule of law weaker – enables EGAT to export the social and environmental impacts of energy production. Thailand's energy and construction companies, backed by the Thai government, financial institutions and investors, are developing many of these new cross-border hydropower projects that will feed electricity into Thailand's grid.

Laos: The aspiring battery of Southeast Asia

Past projects

Landlocked Laos lies at the heart of the Mekong region, sharing its borders with all of the region's countries. Its mountainous topography offers an estimated 18,000MW of hydropower potential. Generating revenues from power exports has been an ambition of the Government of Laos (GOL) since the 1960s. Although Laos did begin exporting power from the Nam Ngum 1 Dam to Thailand in 1971, it was not until the late 1980s that extensive hydropower exploitation appeared politically realistic (IRN, 1999). Since the late 1980s, representatives from the ADB, World Bank, United Nations Development Programme (UNDP) and bilateral Western donors have consistently advised the GOL that developing the country's hydropower potential was one of its few plausible development options (IRN, 1999). They recommended that smaller projects for domestic power sales should be developed using concessional loans and bilateral aid, and owned and operated by the Laotian state-owned electricity utility, Electricité du Laos (EdL). Larger hydropower projects, mainly for power export, were advised to be developed by the private sector under build–operate–transfer (BOT) contractual arrangements, with the government taking an equity share in the project. In the latter case, the government would benefit from concession royalties, taxes and revenues from power sales, which could be reinvested in funding the development of Laos.

EdL set about developing several smaller projects, with support from the ADB, Japan and Norway, amongst others, including the Nam Song Diversion Dam and the 60MW Nam Leuk Hydropower Project, completed in 1996 and 2000. Both projects sought to address the declining quantities of electricity generated by Nam Ngum 1 since 1982 by diverting additional water into its reservoir. Despite their relatively small size, both dams inflicted serious impacts upon local communities. In 2001, an ADB-commissioned study revealed that Nam Song had affected 13 villages, including severe declines in fisheries for more than 1000 families, the loss of boats and fishing nets, agricultural lands washed away by flooding or erosion, and the deaths of eight people due to sudden releases of water from the project (Watson and Schouten, 2001). The Nam Leuk Dam likewise affected the livelihoods of thousands of villagers (ADB, 2004). Yet, only in January 2007, following prolonged pressure from civil society groups, did the ADB allocate resources for a livelihood restoration package.

The promise of lucrative large hydropower export projects in Laos attracted private-sector hydropower companies from Korea, Australia, Europe and North America. By 1995, memoranda of understanding (MoUs) on 23 feasibility studies had been signed to build dams with a combined capacity of 6676MW (Phonekeo, 1996). Yet, as it turned out, by the end of the 1990s, only two of these BOT projects had been built: the 150MW Houay Ho Dam and the 210MW Theun-Hinboun Dam, both of which imposed heavy costs on local communities (see Box 2.1).

Box 2.1 The injustice of the Theun-Hinboun Hydropower Project

The 210MW Theun-Hinboun Hydropower Project (THHP), commissioned in 1998, is the first build–operate–transfer (BOT) project in Laos. Partially funded by the Asian Development Bank (ADB) and the Nordic Development Fund, the project is owned by Electricité du Laos (EdL) (60 per cent), Norway's Statkraft (20 per cent) and Thailand's Greater Mekong Sub-Region (GMS) Power (20 per cent), and exports 95 per cent of its power to Thailand.

While initially lauded by the ADB as a project with 'little for the environmental lobby to criticize', widespread impacts soon emerged that the ADB later reluctantly acknowledged (ADB, 1999). The project has reduced fishery catches by between 30 and 90 per cent along the three rivers it affected, and has caused extensive river erosion and severe downstream flooding, resulting in repeated loss of wet season rice crops, water contamination, skin diseases and death of livestock from drowning and disease. The net result has been a severe impact upon the livelihoods of 30,000 people living downstream and upstream of the dam (FIVAS, 2007).

After sustained pressure from non-governmental organizations (NGOs), the project's owners released a Mitigation and Compensation Programme in September 2000. While the programme has been able to address some of the material needs of the villagers, such as building wells, its efforts to replace lost livelihoods, such as encouraging villagers to grow dry season rice, cash crops and livestock, have been problematic and are mostly failing (Barney, 2007).

Despite the fact that these problems persist, in April 2008 the project's operators reported strong profits (*Vientiane Times*, 2008). EdL alone had received total dividends of US$145 million since the project was commissioned, which is greater than its initial investment. The Government of Laos has earned about US$27 million as royalty fees and US$9 million in taxes.

As the Asian financial crisis struck in 1997, Thailand's shrinking power market no longer needed hydroelectricity imports from Laos, Vietnam focused on developing its domestic hydropower capacity, and most of the prospective foreign hydropower developers in Laos packed their bags and returned home (IRN, 1999).

A new wave of hydropower developers in Laos

It was not until 2003, when Thailand's economy had recovered sufficiently, that EGAT resumed its commitment to purchase power from Laos by signing a power purchase agreement for the 1070MW Nam Theun 2. The project, now under construction, will export 95 per cent of its power to Thailand. It is owned by Electricité de France (35 per cent), the Electricity Generating Public Company of Thailand (EGCO) (25 per cent), Lao Holding State Enterprises (25 per cent), and Ital-Thai Company (15 per cent), and is financed by shareholder equity and loans from 27 Thai and Western banks, export credit agencies and multilateral development banks. Epitomizing the type of public–private partnership that the World Bank and ADB envision will pull Laos out of poverty, the project constitutes a central pillar of their Lao programme strategies.

The ADB and World Bank claimed that Nam Theun 2 would be a model project that would incorporate lessons learned from past mistakes, that its livelihood programmes would lift those affected by the project out of poverty, and that the revenues the government earned from the project would be reinvested in development programmes. Controversy, however, has continued to rage around the project throughout its implementation as construction deadlines have been prioritized over social and environmental commitments, and it remains uncertain at present whether the project will prove itself successful (see Chapter 4).

The World Bank and ADB also worked with the GOL to establish social and environmental laws and policies to underpin hydropower development. While some laws pre-dated Nam Theun 2, such as the 1999 Environmental Protection Law, others, such as the Decree on Compensation and Resettlement of the Development Project and the National Policy on the Environmental and Social Sustainability of the Hydropower Sector, were adopted in 2005 and were meant to incorporate some of Nam Theun 2's standards to ensure sector-wide implementation.

The economic revival of the Mekong region and Nam Theun 2's approval bought to Laos a new wave of hydropower developers. In contrast to the early 1990s, however, which were dominated by Western hydropower developers, investors from Thailand, China, Vietnam, Malaysia and Russia now lead the hydropower push (see Table 2.1) (International Rivers, 2008). The GOL holds MoUs with Thailand and Vietnam to export 7000MW by 2015 and 3000MW by 2020, respectively.

Thai investors had already joined Western corporations in two major projects in the 1990s – namely, the Theun-Hinboun and Houay Ho hydropower schemes – and two Thai companies are also major shareholders in Nam Theun 2. Yet, it was the construction of the 615MW Nam Ngum 2 Hydropower Project, which broke ground in 2006, that really marked a transition in that it is developed and financed largely by Thai actors. Its shareholders are primarily Thai construction and energy companies, including Ch. Karnchang and Ratchaburi. Thai commercial banks are the main financiers of the US$832 million project, and EdL obtained

Table 2.1 *Large hydropower projects in operation, under construction and planned in Laos*[*]

Status	Number of projects	Total capacity (MW)
In operation	6	660[**]
Under construction	6	2249
Project Development Agreement, Concession Agreement or Power Purchase Agreement signed or under negotiation	12	4024
MoUs on feasibility studies signed	39	14,155

Notes: * For projects over 10MW.
** Around two-thirds of this operated power generation is exported to Thailand, with the remainder for the domestic market in Laos.
Source: Lao National Committee for Energy (2008)

its equity through a bond issue that was guaranteed by Thailand's Export–Import Bank. Thai power companies – led by Ratchaburi, EGCO and GMS power – and Thai construction companies, in partnership with companies from Malaysia, Japan and Korea, are now conducting studies on at least 15 new hydropower schemes in Laos, including 2 that are part of a list of controversial projects on the Mekong mainstream (see Table 2.2). As a result of Thailand's partial privatization process, EGAT remains a major shareholder in Ratchaburi and EGCO, two of Thailand's largest 'independent' power producers (Greacen and Greacen, 2004). As such, EGAT's key role in determining future power-sector investments has been flagged as a conflict of interest by Thai civil society groups.

Chinese companies are currently involved in two hydropower projects that are under construction in Laos, the Xeset 2 Dam and Nam Lik 1-2 Dam, and have secured MoUs to conduct feasibility studies on at least ten more projects. Sinohydro Corporation, a Chinese state-owned enterprise (SOE) and China's largest hydropower construction company, has spearheaded this push, signing five MoUs, including one for a 1100MW cascade on the Nam Ou River and the Pak Lay Dam proposed on the Mekong River mainstream. Sinohydro Corporation has an extremely weak environmental and safety record; in 2004, 2005 and 2006, it was reprimanded by the Chinese government due to construction and environmental accidents (Haggart, 2006).

Meanwhile, the Vietnam–Laos Joint Stock Company (VLPC)[2] began construction of the 250MW Xekaman 3 Project in southern Laos in 2006. Financing for the project was largely provided by Vietnamese financial institutions, including the Vietcom Bank and the Bank for Investment and Development of Vietnam. The consortium is currently studying four more hydropower projects in the Sekong and Xekaman basins in southern Laos for electricity exports to Vietnam.

Table 2.2 *Proposed dams on the mainstream Mekong River*

Project	Capacity (MW)	Project sponsor	Status
Pak Beng Dam (Oudomsay Province, Laos)	1300	Datang International Power Generation Company *(China)*	MoU for feasibility study signed on 29 August 2007
Luang Prabang Dam (Luang Prabang Province, Laos)	1410	PetroVietnam Power Corporation *(Vietnam)*	MoU for feasibility study signed on 14 October 2007
Xayabouri Dam (Xayabouri Province, Laos)	1260	Ch. Karnchang Public Company Ltd *(Thailand)* and the Government of Laos	MoU for feasibility study signed on 4 May 2007
Pak Lay Dam (Xayabouri Province, Laos)	1320	Sinohydro Corporation, China National Electronics Import *(China)*	MoU for feasibility study signed on 11 June 2007
Pak Chom Dam (Loei Province, Pak Chom district, Thailand)	1500	Has not been officially announced, but consultants have been observed undertaking surveys in Pak Chom district	
Ban Koum Dam (Ubon Ratchatani Province, Thailand)	1800	Ital-Thai Development Plc *(Thailand)*	Pre-feasibility study completed April 2008. Feasibility study underway
Don Sahong Dam (Khong district, Champasak Province, Laos)	240 or 360	Mega First Corporation Berhad *(Malaysia)* and Government of Laos	MoU for feasibility study signed on 23 March 2006 Project Development Agreement signed 13 February 2008
Sambor Dam (Sambor district, Kratie Province, Cambodia)	465 or 3300	China Southern Power Grid Company *(China)*	MoU for feasibility study signed in November 2007

Source: News reports from *Bangkok Post*, *Cambodia Daily* and *Vientiane Times*

Environmental and social safeguard standards in Laos

In Laos, a one-party socialist state, government criticism is rarely tolerated, press freedoms are curtailed, independent civil society organizations are restricted, and corruption is high (Stuart-Fox, 2006). These circumstances significantly enhance the risks associated with hydropower development – particularly for the hundreds of thousands of villagers poised to lose land, fisheries and other resources as a result. Hydropower development, while generating revenue for the government and generally proving profitable for private-sector investors, has incurred major environmental and social costs, a legacy of damage that remains largely unaddressed.

Many of the laws, regulations and policies developed in preparation for Nam Theun 2, with support from the ADB and World Bank, contain important provisions

to ensure participation, consultation, information disclosure, compensation and resettlement with livelihood restoration for affected communities. However, in practice, these provisions are often not being followed by the new developers and are not being enforced by the GOL (International Rivers, 2008). These implementation failures are most evident during the development and review of the environmental impact assessments (EIAs) and resettlement action plans for hydropower projects, which have generally not been disclosed to the general public and are often of questionable quality. Although the Nam Theun 2 Project has surpassed the standards of early Lao hydropower projects and can be credited with piloting several innovative aspects in Laos, such as the presence of independent monitors, a revenue management framework and a commitment to public reporting, implementation within both the Lao context and the tight timeframe of investors is problematic (see Chapter 4).

For many of the new hydropower developers, the ADB and World Bank's environmental and social safeguards are viewed as burdensome, time consuming and costly.[3] Now that private sources of finance are more readily available, these hydropower developers are less inclined to seek the banks' financial support (World Bank, 2007a). Despite this, both the ADB and World Bank plan to remain involved in the hydropower sector in Laos, principally through their ongoing support for the Nam Theun 2 Project and for the development of several regional transmission lines (World Bank, 2005b; ADB, 2007c). Both banks also plan to build the capacity of the GOL to manage hydropower development and the public finances that will be generated, and to support policy reform that will further facilitate private sector-led hydropower development. The ADB is considering supporting two new hydropower projects in Laos – Nam Ngum 3 and Nam Ngiep 1 – and the World Bank Group's Multilateral Investment Guarantee Agency may provide a guarantee to Sinohydro's Nam Ngum 5 Project.

Vietnam: Racing to meet power demand

The rapid economic growth of Vietnam has seen a massive forecasted increase in demand for power – currently growing at 16 per cent per year – which the state-owned electricity utility, Electricity of Vietnam (EVN), is struggling to meet (World Bank, 2006). The World Bank estimates that investments of US$3 billion annually are required for new generation and transmission infrastructure until 2010 alone, significantly exceeding EVN's own resources.

Until the late 1990s, hydropower constituted the backbone of Vietnam's power supply. More recently, however, fossil fuel-fired power stations have become predominant. At present, around one quarter of Vietnam's economically viable hydropower is in operation and efforts are well under way to exploit the remaining 17,000MW potential by 2025 (EVN, 2006).

Since the World Bank and ADB resumed operations in Vietnam during the early 1990s, they have loaned heavily to EVN (ADB 2007d; World Bank, 2007b).

At the same time, they have also pushed for sweeping power-sector reforms, calling for a greater role for private-sector power generators, the restructuring of EVN into shareholding companies, and the establishment of a competitive power market. The reforms cumulated in the promulgation of a new Electricity Law in 2004 and the establishment of the Electricity Regulatory Authority of Vietnam.

As such, since 2004, EVN has undergone a process of corporatization that will ultimately involve selling shares in up to 50 of its power plants and other subsidiary enterprises, while maintaining a state monopoly over the transmission network and the largest dams such as Son La, Hoa Binh and Yali Falls (Reuters, 2007). The utility hopes to earn more than US$700 million by selling shares in many of its power plants. EVN is also borrowing heavily from commercial sources, export credit facilities, bond issues and overseas development aid to fund its expansion plans. A growing number of private-sector independent power producers are also operating in Vietnam, mainly developing profitable thermal power stations, leaving the development of less-profitable hydropower stations to EVN (World Bank, 2006).

To secure its electricity supply, Vietnam has also looked to its neighbours, partly facilitated by the ADB's GMS programme. Since September 2004, Vietnam has imported growing quantities of electricity from China and has exported increasing volumes of coal (Bo, 2008). From Laos, by 2010, Vietnam will import power from the 250MW Xekaman 3 Dam, the first of at least nine hydropower projects it is considering in Laos (Lao National Committee for Energy, 2008). In June 2007, EVN agreed with Cambodia's government to undertake feasibility studies on the Lower Sesan 2, which would export some of its electricity to Vietnam.

Large hydropower dams in Vietnam have often caused serious social upheaval and high environmental costs (Hirsch, 1998; CRES, 2001; VUSTA, 2006). The planned Son La Dam, for example, requires the resettlement of up to 100,000 mainly ethnic minority people (VUSTA, 2006). Although Vietnam passed a Law on Environmental Protection in 2005 and despite a growing recognition amongst hydropower proponents in Vietnam of the need to fairly address the environmental and social impacts of large dams, experience has been limited and implementation weak (World Bank, 2006).

The ADB and World Bank have been involved in various hydropower planning studies in Vietnam since the early 1990s. The World Bank, for example, conceived the preparation of Vietnam's *Hydropower Master Plan*, completed in 2001 with funding by the Norwegian and Swedish development agencies (Lang, 2000). The ADB funded the *Sekong-Sesan and Nam Theun River Basins Hydropower Development Study*, completed in 1998, that prioritized six dams for further development within the three river basins shared by Cambodia, Laos and Vietnam (Lang, 1998). The ADB would have gone on to fund the Sesan 3 Dam in Vietnam, but its own project preparation technical study prepared in 2000 revealed the 'severe to catastrophic' impacts of the Yali Falls Dam (commissioned in 2000, located upstream of the Sesan 3) on tens of thousands of Cambodian villagers downstream. EVN ultimately

acquired funding from Russian sources rather than conduct a transboundary study required by ADB that ultimately could have required them to pay compensation to the affected villagers (Hirsch and Wyatt, 2004).

In June 2008, the ADB financed its first hydropower project in Vietnam, the US$270 million 156MW Song Bung 4 Hydropower Project in Quang Nam Province, central Vietnam. To give grounds for its involvement, the ADB established a river basin management organization and undertook a cumulative impact assessment; yet it approved the project despite the fact that its reservoir will submerge 143ha of Song Thanh National Park and the resettlement consultation process was found to fall short of ADB safeguard standards (RDSC and BIC, 2008). The World Bank is also seeking to provide a loan for the US$310 million 250MW Trung Son Hydropower Project in Thanh Hoa Province, north-western Vietnam.

Both the ADB and World Bank have also supported transmission infrastructure in Vietnam, including regional interconnections. The ADB's US$360 million support for transmission lines in northern Vietnam connects the controversial Son La Hydropower Project to its domestic load centres. The ADB has justified its association with the Son La Project – which is not subject to and certainly does not attain the ADB safeguard standards – by stating that the dam would have gone ahead anyway, with or without the bank's support for the associated transmission infrastructure. Instead, the bank has claimed to try to improve the project by providing technical assistance for its resettlement and environmental programmes, although these have found limited success. Whether projects such as Son La should be considered as 'associated projects' and, therefore, subject to the ADB's safeguard standards before supporting loans are supplied is questioned by civil society groups and is a grey area within the bank's policy. Under similar dubious circumstances, the World Bank funded the transmission line that connected the Yali Falls Dam to Ho Chi Minh City (Trandem, 2008).

EVN has also welcomed other foreign assistance for its dam projects, especially from those whose financing does not come with rigorous social and environmental conditionalities. In 2006, for example, partnering with EVN, China Southern Power Grid Company invested US$28 million in the 21.4MW Lao Cai Hydropower Station (Bo, 2008). In January 2008, the Indian Export–Import Bank provided a US$45 million concessional loan for the 200MW Nam Chien Hydropower Plant, complementing the US$156 million provided for the project mostly by Vietnamese banks. Russian financial and technical support has continued to be important, especially on controversial projects such as Son La and Sesan 3.

Cambodia: Big plans for hydropower

Cambodia is on the threshold of an extensive domestic hydropower development programme, backed mainly by Chinese developers and financiers. In Cambodia, the

cost of electricity is amongst the highest in the world and electricity infrastructure remains rudimentary, a result of decades of fighting and political turmoil (ADB, 2005a). Cambodia's political elites have expressed strong support for large-scale hydropower projects, citing the need to secure access to cheap electricity to supply Cambodia's expanding economy (International Rivers and RCC, 2008).

Until recently, Cambodia has struggled to attract investment for major hydropower development. Western bilateral donors and the multilateral development banks have proven reluctant to provide support, in part over concerns about environmental and social impacts. The World Bank's and ADB's initial efforts focused on rehabilitating power supplies in Phnom Penh and the provincial centres, and have since focused mainly on expanding electricity transmission and distribution, rural electrification, and developing Cambodia's electricity institutional and legal framework (ADB, 2005a; World Bank, 2005c). As a result, the Electricity Authority of Cambodia was established in 2001. In line with ADB and World Bank policy, this framework also places the private sector centrally to developing Cambodia's power system.

Over the past several years, China's political and economic ties with Cambodia have strengthened and the Chinese government has indicated high-level support for Cambodia's hydropower plans. To date, deals have been finalized on four major hydroelectric projects, all of which will be built by Chinese companies. Construction of the 193MW Kamchay Dam, located in Bokor National Park, Kampot Province, by Sinohydro Corporation commenced in late 2007 (see Box 2.2). The 120MW Stung Atai project, to be developed by the China Yunnan Corporation for International Techno-Economic Cooperation, was approved in February 2007, followed in June 2008 by the 246MW Stung Tatay Dam and the 338MW Stung Russey Chrum Krom Dam (Associated Press, 2008). Reportedly, a further nine hydropower projects are planned to be built in Cambodia by 2019 (*XFN–ASIA*, 2008).

In contrast to the intense competition between hydropower developers in Laos, Chinese hydropower companies appear to have largely cornered Cambodia's hydropower market. Aside from Chinese companies, the only other hydropower developer known to be conducting a feasibility study in Cambodia is a subsidiary of EVN for the (controversial and risk-prone) Lower Sesan 2 Dam.

The ADB and World Bank, although not directly funding hydropower projects, have subsidized their development through supporting the construction of several domestic and regional high-voltage transmission lines (ADB, 2005a).

Myanmar: Thai and Chinese companies move in

Myanmar has plans for extensive hydropower development to generate electricity for domestic use, and for export to Thailand and China for revenue generation (Win Kyaw, 2006). Myanmar's total hydropower potential is a substantial 39,720MW, of

Box 2.2 Kamchay Dam, Cambodia

In April 2005, the Cambodian government awarded Sinohydro Corporation a contract to develop the Kamchay Hydropower Scheme – Cambodia's first large dam. High-level Cambodian and Chinese government officials pushed forward the Kamchay Dam in closed-door negotiations that largely left other stakeholders, including the local authorities and the public, out of the process. Financing for the Kamchay Dam was secured in April 2006 from China Exim Bank. The project had previously been considered by the Canadian International Development Agency (CIDA) a decade earlier, but was eventually dropped because of social and environmental concerns.

The 110m high dam, now under construction, is located in Bokor National Park, southwest Cambodia, and will flood 2000ha of protected forest. According to a 2002 survey, this forest is the habitat of 31 mammals and 10 endangered species, including Asian elephants, leopard cats and tigers. This area is also an important source of non-timber forest products for local residents, many of whom depend upon the income earned through selling the forest products. It is not known if Sinohydro Corporation will provide compensation or support the development of alternative livelihoods. There are also concerns that poor river water quality could devastate the local tourism industry, pollute irrigation water that feeds the abundant durian orchards and rice fields nearby, and contaminate Kampot town's water supply extracted just downstream of the planned dam site. Shortly after construction commenced, the *Cambodia Daily* reported that water contamination from construction activities and untreated sewage discharges from the workers camp into the Kamchay River had caused tourism to plummet from 60,000 people in February to 7700 in March at the popular Touk Chuu rapids immediately downstream (*Cambodia Daily*, 2008).

Sinohydro Corporation will build, own and operate the Kamchay dam for 44 years, despite the unusual contract length having been questioned in political debates.

which approximately 25,000MW is large-scale hydropower dams (approximately 35 projects). Myanmar plans to bank-roll these projects mainly through loans and suppliers' credits from China, through government funds, and by encouraging private-sector investment. As of 2006, there were only ten hydropower stations larger than 10MW in operation in Myanmar with a total capacity of 745MW supplying domestic demand.

In Myanmar, many major development projects, including large dams, take place in ethnic minority areas. The country's laws allow for no public participation in decision-making, require no environmental, social or human rights impact assessments, and effectively offer no access to justice (BRN, 2008). Increased militarization around project areas often results in the use of forced labour and forced portering, forced relocation and other human rights abuses. Increased troop presence leaves women particularly vulnerable to abuse, including to sexual violence. Large dams in Myanmar benefit foreign investors while continuing to support Myanmar's military junta financially and politically.

Between 1997 and September 2007, at least 14 Chinese companies became involved in at least 40 hydropower projects in Myanmar (EarthRights International, 2007a). Major hydropower dams being planned with strong Chinese backing include the Hutgyi and Tasang dams on the Salween River, the Shweli River cascade, and seven dams on the Ayeyarwady (Irrawaddy), N'Mai Hka and Mali Hka rivers, the first of which will be the 3600MW Myitsone Dam (see Chapter 5).

The Government of Thailand signed an MoU with Myanmar in July 1997 to purchase up to 1500MW of power by the year 2010. In May 2005, Thailand's Ministry of Energy signed an MoU with Myanmar's Ministry of Electric Power to develop hydropower projects on the Salween and Tanintharyi rivers (EGAT, 2008). Thai companies have actively sought joint ventures with Chinese partners, such as Sinohydro and Gezhouba, to develop the hydropower dams on the Salween River.

Although the ADB and World Bank currently do not provide loans or grants to Myanmar, representatives of Myanmar's regime continue to join regional meetings hosted by the banks, particularly those of the ADB's GMS. This, in the eyes of some, constitutes a dubious interpretation of the bank's current embargo on Myanmar (EarthRights International, 2007b). By attending the GMS's regional electricity meetings and participating in its studies, the Myanmar military junta has gained the opportunity to further Myanmar's integration into GMS, undermining Western-led pressure for political reform.

A CHANGING WORLD: THE BANKS SEEK TO REINVENT THEMSELVES

In the aftermath of the 1997 Asian financial crisis, Mekong governments made deliberate efforts to expand their options to finance development plans. Except in Myanmar, the economies of the Mekong countries, in general, are exhibiting strong growth, and, especially in Thailand and Vietnam, there is increasing domestic liquidity. The growing influence of international private capital and bilateral funds from new economic powers, such as China and India, are radically shifting the architecture of international finance and are increasingly predominant over development bank financing.

Shifting roles and expanded lending instruments

These new sources of project financing have forced the ADB and World Bank to reconfigure their operations. An examination of the banks' key operational and sector strategy papers reveals that the banks refuse to become totally redundant in the Mekong region's project financing. Although bypassed by private and institutional banks, it seems too early to dismiss them as irrelevant because they

appear to be making inroads into reinventing their roles to maintain regional influence.

In middle-income countries, such as Thailand, the banks have sought to redefine their role from project-led financiers to 'knowledge solution' providers (ADB, 2008). In order to achieve this, the banks' country offices now host more in-house experts that help, if not initiate, the identification of priorities and reform targets for countries to access more funding. The banks claim to root their policy advice and analytical studies in alignment with the borrowers' own development plans.

The ADB and World Bank agenda also remains unchanged. The banks justify their engagement in the Mekong hydropower industry on the basis of fulfilling their self-assigned mandate to reduce poverty. As energy is seen as a prerequisite to economic growth, the banks view the Mekong region's water resources as a vast opportunity for investment in hydropower, and their support for the sector as critical to alleviating poverty.

The banks have refined their overarching strategy towards promoting private sector-led investment, using their expertise and finance to build public–private partnerships or otherwise lever private capital (ADB, 2001, 2005b). The banks do not necessarily see private equity funds, commercial banks and independent power producers as competitors. Instead, the banks are confident that they can adapt to the entry of new players by striking co-financing agreements, direct lending, investing in equity or providing risk guarantees.

To build these new partnerships with the private sector, as well as appear more attractive to low- and middle-income countries, the ADB has sought to repackage itself, especially through expanding its lending instruments (ADB, 2007e). They now include loans in local currency rather than in US dollars, and a multi-tranche financing facility under which the bank commits to financing an entire sector or multiple tranches of a large project. The ADB is also now offering loans and guarantees to sub-sovereign government agencies, such as provincial governments, and state-owned enterprises, without requiring guarantees from central government. The ADB is moving ahead to mainstream its lending instruments despite concerns about possible loopholes that would avoid rigorous application of environmental and social safeguards, lessen compliance with information disclosure and anti-corruption policies, and reduce the bank's board and management's project oversight (Fried et al, 2008).

Pressure on the ADB to keep its business afloat has led the bank to push for the dilution of its environmental and social safeguard policies, and in 2005 the ADB launched a process to redraft the policies. A consultation draft released in October 2007, in the eyes of civil society organizations, essentially eviscerated the bank's current environmental, indigenous peoples and involuntary resettlement safeguards policies, and replaced them with far shorter and more vague 'policy principles', together with a weakened commitment to information disclosure for lending operations to the private sector (Fried et al, 2008).

Since 2005, the World Bank has piloted a Country Safeguard Systems (CSS) approach that relies more heavily on national procedures and laws instead of the bank's own policies. Principles rather than policies and mandatory procedures are used in the CSS approach. This approach is considered applicable if the host country's laws are judged by the bank to be equivalent in content, intent and spirit to its own safeguard policies. Responding to demands from borrowing countries, the CSS approach is intended to shorten the bank's loan transaction period and to reduce project costs. The ADB now plans to adopt an equivalent Country Safeguard Systems approach, and intends to pilot the method in Vietnam.

Independent evaluation of the World Bank's application of the CSS approach, however, has revealed that environmental and social standards can slip because:

- the principles used to implement the CSS approach can be less stringent than the bank's original environmental and social policies;
- the borrower's national laws, policies or measures can be inconsistent with or weaker than the bank's previous project management standards;
- national capacities to implement safeguards may not be sufficient and are not realistically addressed by the bank; and
- an affected community's ability to invoke the World Bank's 'accountability mechanism', which can halt a project if the bank's safeguard policies are violated, is more difficult because it can be unclear whether a policy has been violated (CIEL, 2007).

The World Bank has yet to prove that its CSS approach – still at pilot stage – ensures that environmental and social standards are of equal quality to the bank's existing safeguard policies.

Regional initiatives: A key role for the development banks

The ADB and World Bank, in the face of declining demand for their conditionality-tied project financing loans, have attempted to recast themselves as purveyors of international best practice for the region and as 'honest brokers' of regional cooperation initiatives.

In a working paper released in June 2006, the World Bank, the ADB and the Mekong River Commission (MRC) outlined their major new collaborative initiative: the Mekong Water Resources Assistance Strategy (MWRAS) (World Bank and ADB, 2006). It promotes the construction of controversial water infrastructure projects in three sub-regions of the Mekong Basin where transboundary impacts would occur that include dams, irrigation schemes and water transfer projects – namely, north-eastern Thailand and north-western Laos, where large-scale trans-basin water transfers are proposed; the Sesan, Srepok and Sekong ('3S') river basins where the interests of Cambodia, Vietnam and Laos coincide under extensive hydropower development plans; and the Mekong Delta shared by Vietnam

and Cambodia to address flood/navigation/agriculture and wetlands-associated projects. The strategy claims that livelihood restoration programmes for affected communities could mitigate any negative impacts from the projects, suggesting that affected communities might even benefit from the new river flows, leading to potential win–win situations.

The MWRAS project drew wide criticism from civil society groups (IUCN et al, 2007). Key concerns included:

- The MWRAS claimed that economic and other pressures on each of the Mekong countries mean that it is inevitable that large-scale water infrastructure projects will go ahead. The MWRAS did not question whether the infrastructure projects themselves are the most effective way to reduce poverty in the region or if they are sustainable.
- The MWRAS misleadingly extrapolated the results of a hydrological model to suggest that the Mekong River could accommodate further extensive infrastructure development. The model's results were narrowly hydrological and failed to account for ecological or socio-economic impacts, particularly the subtleties of the flood pulse ecosystem (Lamberts, 2008; see Chapter 13).
- The MWRAS calls for closer collaboration between the banks, the MRC and the four member states to develop new infrastructure projects. It encourages reorienting the MRC's role from that of a basin *management* organization to that of a basin *development* organization. Given that numerous actors, including the banks, are already heavily promoting infrastructure-oriented development in the basin, civil society groups and some of the MRC's donors argue that the MRC should work to emphasize the joint management and conservation of the river basin, embracing local participation and diverse perspectives (Hirsch and Mørck-Jensen, 2006).

Independently from the ADB, the World Bank has also led recent regional initiatives. In September 2007, the World Bank hosted the Thai–Lao Sustainable Hydropower Forum in Bangkok, which invited senior representatives from the governments of Laos and Thailand, existing project operators, project developers, financiers and civil society to discuss working towards a triple bottom line approach (economic, environmental and social) for the Laos hydropower sector (World Bank, 2007a). The forum indicated a move by the World Bank to address the fact that hydropower projects subsequent to Nam Theun 2 were failing to replicate its standards. The forum issued a joint communiqué, co-signed by Thailand's minister for energy and the Laos minister of energy and mines, which indicated a commitment to work towards 'enhancing the quality of investments to make the hydro power sector both environmentally and socially responsible and sustainable in Laos'. The governments agreed to form a bilateral task force to develop an action plan, and a second forum is planned for late 2008. Whether these commitments will translate into action on the ground remains to be seen.

Discussion and conclusions

We are witnessing a revived rush to develop hydropower in the Mekong region, a rush fraught with pitfalls for project developers, financiers, host governments and, most of all, for communities whose livelihoods would be affected. The legacy of many earlier projects already stands testament to the environmental and social costs of large dams.

Despite this, the new hydropower proponents have so far demonstrated little commitment to social and environment standards or to public participation in decision-making.

Have the ADB and World Bank raised hydropower project standards?

While the ADB and World Bank claim to have strong environmental and social policies, as well as commitments to public participation, in reality these measures have often proven inadequate to mitigate the risks of large dams. Existing hydropower projects backed by the ADB and World Bank have failed to ensure that project impacts were mitigated and livelihoods restored, let alone that the project's benefits were shared. Recent examples include the Theun-Hinboun and Nam Song dams in Laos and the Pak Mun Dam in Thailand (where impacts were lessened only after multiple rounds of protest by affected people and their advocates; see Chapter 3). While the banks' most recent project, the Nam Theun 2 in Laos, has substantially raised the bar compared to earlier project studies of environmental and social impacts, it remains to be seen whether promises made to affected communities can be kept or will be adequate. Early indications are that they will not be (see Chapter 4).

Both the ADB and World Bank have invested considerable time and resources into hydropower development in the Mekong region, including cross-border power trade through the GMS programme. Hydropower helps to provide electricity necessary for economic growth, but also undermines the livelihoods of the rural affected communities. The failure of the GMS programme to adequately address the environmental and social impacts of its projects, as well as the issues of equity (between GMS countries and between rural and urban), ultimately undermines sustainable development and remains its biggest shortcoming (Cornford and Matthems, 2007; UNEP and TEI, 2007).

Indeed, in some instances, the ADB's GMS programme is directly incongruous with the ADB's own country-level programmes. In Cambodia, for example, the ADB's country programme has identified the Tonle Sap Basin as its geographical focus, recognizing the area as one of Cambodia's poorest and most environmentally sensitive regions (ADB, 2005a). Yet, extensive regional hydropower development promoted under the GMS programme constitutes a serious threat to the lake's

ecosystems and its fishery productivity – and, ultimately, therefore, to efforts to alleviate poverty (CNMC and WorldFish Centre, 2007).

The evolving role of the old players

The entry of new hydropower developers and financiers into the Mekong diminishes the influence of 'old actors' such as the development banks and donor agencies, as well as some NGOs. But it does not make them wholly irrelevant.

As reviewed above, both the ADB and World Bank have new hydropower projects in their lending pipelines. Yet, given the large number of projects planned in the Mekong region by the new hydropower developers and the wide array of private-sector and government-backed financing options available to them, it is clear that the role of the ADB, the World Bank and Western bilateral donors as project developers and financiers has significantly lessened.

The efficacy of the development banks in their self-assigned new niche as knowledge providers and purveyors of best practice remains to be seen. As relatively minor and, now, replaceable financiers, it will be challenging for the banks to make 'best practice standards' attractive enough to appeal to the short-term interests of the new hydropower proponents and, perhaps even, the region's governments.

A recommendation, for example, of an ADB-supported cumulative impact assessment (CIA) completed in early 2008 for the proposed Nam Ngum 3 Dam was that several smaller dams proposed for the Nam Ngum Basin not be built in order to protect fisheries vital to livelihoods. This advice, however, has been ignored by other hydro-developers in the basin (and apparently also by the GOL), who are pushing forward with construction of contentious projects on the Nam Lik River (Norplan, 2008).

In addition to hydropower dams, the ADB and World Bank are financing or planning to finance several regional transmission lines that will facilitate bilateral power trade between Laos, Thailand, Vietnam and Cambodia. These transmission lines will export power from numerous private-sector hydropower projects that do not meet each country's regulatory standards, let alone the banks' safeguard policies. The banks are able to indirectly support (and therefore subsidize) these hydropower projects because of the lack of clarity surrounding how their safeguards apply to 'associated facilities'. Exploiting this loophole, the development banks appear increasingly keen to support associated transmission lines rather than hydropower projects directly.

The ADB and World Bank, and its donors, also continue to support regional-level meetings and to undertake studies that promote regional integration of the electricity sector, to which hydropower development is central. An ADB study, now being finalized, recommends that regional integration should be expanded to the wider energy sector, including natural gas, coal and oil (Nangia, 2008). These studies largely build on existing government plans, providing justification to move

mostly large infrastructure-intensive plans forward, yet incorporate the same lack of vision of alternative scenarios to meet energy needs.

The Mekong River Commission has struggled to define its role as a basin management organization, especially in the face of the current wave of extensive hydropower development plans. The MRC has only recently funded its hydropower programme in 2008, and, alongside other programmes such as the Environment Programme and Fisheries Programme, it is uncertain to what extent the MRC can project its scientific knowledge to influence the politicized decision-making process.

The need for international standards for new hydropower proponents

The new Mekong hydropower developers – predominantly energy and construction companies from Thailand, Vietnam, China, Russia and Malaysia – have yet to commit to international best practice standards, such as those outlined in the recommendations of the World Commission on Dams (WCD) report (WCD, 2000). These developers are not even striving to meet the ADB and World Bank's social and environmental standards and commitments to public participation, which are notably weaker than the WCD's recommendations. Very few project developers have developed and published corporate social responsibility (CSR) policies. The companies that have, such as Thailand's EGCO and Ratchaburi, have adopted a very narrow interpretation of CSR that provides only limited support for affected communities (and, apparently, only for those in Thailand).

Amongst the commercial banks from Vietnam and Thailand that are known to be financing hydropower projects, none have adopted environmental and social standards, such as the Equator Principles, or hold an equivalent set of standards.[4] In China, the Equator Principles are only just beginning to gain momentum: the Ministry of Environmental Protection has embraced them as part of its domestic green credit policy. Amongst the new export credit agencies actively supporting hydropower projects in the Mekong region, only China's Exim Bank is known to have an environmental policy and guidelines, released in April 2007 and August 2007, respectively. There is little evidence, however, of its rigorous implementation on the ground.

These frameworks could reduce the risk of developing poorly conceived projects. Given the massive interest in developing hydropower throughout the region, the region's governments are in a strong position to only select those developers of sound reputation. In general, best practices address issues of concern to wider society through eliminating or minimizing externalities and sharing project benefits. While, in principal, such practices also reduce project developer risk – for example, from protests or legal measures that could delay project construction or add unforeseen additional cost – where the rule of law is weak, corruption high or

local protest stifled, such risks appear smaller to project developers; therefore, they have less impetus to implement best practices. Commercial or strategic short-term interests favour poor practices that constantly override consideration or application of precautionary measures or standards. Past dam projects, unfortunately, confirm that all the compensation schemes and other concessions from dam builders and governments have been secured only after substantial mobilization or protest.

The need for better electricity and water planning practices

Environmentally sustainable and socially desirable solutions to meeting the Mekong region's energy needs do exist, although, at present, they are not a part of any regional energy plan (Greacen and Footner, 2006; VUSTA, 2007). The planning processes currently in place both at the national and regional levels fall well short of international standards in electricity planning.

Hydropower projects begin as abstractions, as a series of numbers, drawings and equations shaped by experts (Foran, 2006; Greacen and Palettu, 2007). How these coalesce over time to establish a particular hydropower plant as an attractive option to expanding energy supply is one of the most difficult and important questions. This difficulty stems from a number of factors.

First, the financial incentive structure of power utilities is a 'rate-of-return' structure. All utility costs are periodically submitted for review to a regulator; if approved, the organization will be permitted to recover its costs, plus a profit margin, by passing them on to captive customers (Foran, 2008a). This incentive structure rewards utilities for investing in power plants, not for saving energy through energy efficiency programmes.

Second, electricity planning is done on behalf of society, not by society. Planners report to state-owned power utilities or state energy agencies, not to other branches of the state (such as legislative committees or an independent regulatory body). These two forces – institutionally shaped interests and practices – combine with the aura of technical complexity promoted by insiders. It leads to relatively closed 'state-knows-best' planning processes.

Civil society groups have questioned Thailand and Vietnam's power development plans, which heavily promote the development of new large-scale electricity generation plants (Greacen and Footner, 2006; VUSTA, 2007). They claim that future electricity demands are overestimated, and the role that energy efficiency measures, renewable energy and decentralized energy options could play is downplayed. In Thailand, they argue that existing plans mostly serve the interests of the state-owned electricity utilities, energy companies and the construction industry, rather than the needs of Thailand's electricity consumers. Civil society groups in Thailand are calling for reform of the power planning process towards integrated resources planning (IRP), a process that considers a full range of feasible supply- and demand-side options, as well as the full cost to society – including

social and environmental costs, as well as risk – rather than the lowest commercial cost to investors.

Electricity savings programmes implemented by EGAT between 1995 and 2006 have reduced actual peak demand by 6 per cent. Studies indicate that by 2018, Thailand should be able to avoid adding 7900MW of generation capacity through further savings, offering slightly higher tariffs to renewable energy projects and accepting bids to sell electricity from both renewable and high-efficiency natural gas cogeneration (Foran, 2008b, Tables 31–32; cf. Greacen and Footner, 2006). Vietnam and China likewise have significant energy efficiency and renewable energy potential (USAID, 2007).

Furthering the IRP concept, the WCD put forward a wider framework in the form of a *Comprehensive Options Assessment* that combines sustainable water and energy planning practices with public participation to prepare congruous, sustainable and publicly acceptable electricity- and water-sector plans.

Coupling electricity and water planning is critical to determining the true cost of hydropower development. It is therefore surprising and of serious concern that despite more than 15 years of ADB support for extensive hydropower development and regional power trade, the ADB has failed to evaluate the cumulative impacts of widespread hydropower development on the Mekong River's ecosystems and its people, which are anticipated to be severe (Ratner, 2003; UNEP and TEI, 2007; Lamberts, 2008).

Recognizing the river's existing values

The Mekong region's rivers continue to provide abundant natural resources for the region's riparian peoples, as well as the wider basin population, as they have done for millennia. By changing the river's hydrology, blocking fish migration and affecting the river's ecology, the extensive construction of hydropower dams throughout the Lower Mekong Basin – especially on the mainstream – is likely to have serious repercussions throughout the entire basin, both on the region's economy and its food security (see Chapter 9). According to the MRC, the economic value of the Mekong River's fisheries alone is in excess of US$2 billion per year (MRC, 2005). The value of this natural resource is largely unrecognized in regional infrastructure development plans.

Where a comprehensive and participatory assessment of all options has concluded that a hydropower project is the best option to meet water and energy needs, all parties involved should commit to implementing international best practice standards. An atmosphere that encourages a race to the top, not to the bottom, needs to be fostered. Currently, the region is far from that vision. As new hydropower proponents (such as those from China, Thailand and Vietnam) become increasingly influential in the Mekong region and step onto the global stage, they should accept their international responsibilities and adhere to international standards when developing and financing large infrastructure projects.

NOTES

1 These are loans that are extended on terms substantially more generous than market loans. The concessionality is achieved either through interest rates below those available on the market or by grace periods, or a combination of these (see http://stats.oecd.org/glossary/detail.asp?ID=5901).
2 VLPC is a Vietnamese consortium, formed of Song Da Corporation (49 per cent), PetroVietnam, the Bank for Investment and Development of Vietnam, the PetroVietnam Finance Company and the BIDV Securities Company.
3 This observation is based on comments by Thai bankers during a 2007 forum on Thai–Lao hydropower development sponsored by the World Bank (see World Bank, 2007).
4 The Equator Principles (EP) are a voluntary set of environmental and social standards in development project finance globally that have been adopted by 60 private banks around the world.

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