Power and responsibility

The Mekong River Commission and Lower Mekong mainstream dams

A joint report of the Australian Mekong Resource Centre, University of Sydney and Oxfam Australia by Gary Lee and Natalia Scurrah

The University of Sydney

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The Australian Mekong Resource Centre (AMRC) is a Centre of the University of Sydney, based at the School of Geosciences. The Centre promotes research, discussion and debate on development and environmental issues in the Mekong region. Established in 1997, the Centre is a focal point for information, dialogue and activities in support of an equitable and sustainable development path for the region.

The views in this publication are those of the authors and do not necessarily represent those of Oxfam Australia or the University of Sydney.

We appreciate any feedback, comments or input you may have about issues and cases discussed in this report. Comments can be emailed to mekong@oxfam.org.au

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Cover photo: Timo Kuronen

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Acronyms

ADB	Asian Development Bank
BDP	Basin Development Plan
CNMC	Cambodian National Mekong Committee
DSF	Decision Support Framework
EIA	Environmental Impact Assessment
GoL	Government of Lao PDR
HSAF	Hydropower Sustainability Assessment Forum
IBFM	Integrated Basin Flow Management
IFI	International Financial Institution
IWRM	Integrated Water Resources Management
MoU	Memorandum of Understanding
MRC	Mekong River Commission
MRCS	Mekong River Commission Secretariat
MWRAS	Mekong Water Resources Assistance Strategy
NGO	Non-government Organisation
NMC	National Mekong Committee
PDA	Project Development Agreement
PNPCA	Procedures for Notification, Prior Consultation and Agreement
WFC	WorldFish Center
WUP	Water Utilisation Programme
WUP-FIN	A complementary project to the MRC Water Utilisation Programme, funded by the Ministry for Foreign Affairs, Finland

Contents

Executive summary

Photo: Timo Kuronen

The revival of plans to build up to 11 hydropower dams on the Lower Mekong mainstream focuses attention on the Mekong River Commission (MRC), an international river basin organisation assigned with the task of ensuring the sustainable use and management of water and related resources of the Lower Mekong Basin. Although questions regarding MRC's role have been posed since its inception, the proposed mainstream dams signal an especially critical time for MRC. How MRC addresses key concerns and balances different interests in the basin will have significant bearing on MRC's perceived relevance to its member states, donors and the people of the basin.

This report focuses on two aspects of MRC's structure and activities in relation to mainstream dams: its governance role and its role as a knowledge-based organisation. In regard to governance, MRC asserts that it is an intergovernmental organisation, not a supranational one and, as such, its role is primarily to serve its member states. This position calls for a better understanding of MRC power and responsibilities, and whose interests the MRC serves.

MRC's governance structure has implications for a river basin organisation that portrays itself as an independent producer of knowledge and science. There are many areas of knowledge in which MRC can use its science to help manage and develop the river more equitably and sustainably. This report reviews MRC's fisheries research and modelling of development scenarios and examines how MRC acts on its knowledge base to influence planning and decision making on mainstream dams.

The final section examines the responsiveness of MRC to the wider basin community and the opportunities and challenges arising from its recent efforts to engage various stakeholders more actively.

Drawing heavily on MRC's own research and statements, this report seeks to inform and open discussions regarding MRC's role in relation to the proposed lower mainstream dams.

Key findings

Mekong mainstream dams: new trends in hydropower development

- Up until the impacts of the current global financial crisis began to be felt in Southeast Asia, the Mekong region was experiencing a boom in hydropower development.
- Contributing factors for renewed attention on damming the Mekong mainstream include:
  - government forecasts predicting significant increases in future electricity demand, particularly in Thailand and Vietnam;
  - emphasis by the governments of Lao PDR and Cambodia on hydroelectricity exports as a source of foreign exchange;
  - increased availability of quasi-public and private sector finance and the proliferation of new hydropower developers, including from within the Mekong region; and
  - expected increase in dry season flows from the development of dams on the Upper Mekong in China.
- Projected increases in electricity demand, and ways of meeting it, are heavily contested by energy analysts and civil society organisations in the region.

Photo: Glenn Daniels/Manna Gum

Mekong River Commission's role: responsibilities and expectations

- Several Articles of the 1995 Mekong Agreement place responsibilities on MRC with regard to mainstream dams.
- There are different understandings and expectations of MRC's role among its member states (Cambodia, Lao PDR, Thailand and Vietnam), donors and civil society.
- Under its charter, MRC is accountable to member states and is not directly accountable to the public.

Fisheries knowledge

- A 1994 Mekong Secretariat fisheries evaluation of the Lower Mekong mainstream dams concluded that more knowledge was needed to make reliable assessments of the potential impacts of the dams.
- Since 1995, donors have invested substantially in fisheries research by the MRC Secretariat. MRC Secretariat research confirms the immense value and productivity of the Mekong's capture fisheries, which are contingent on maintaining the ecological integrity of the Mekong river system.
- The proposed Mekong mainstream dams are a threat to sustainable fisheries, as they would obstruct fish migration and degrade aquatic habitats.
- There are no known effective mitigation measures against the barrier effect of dams on fish migration in the Mekong.

Modelling the impacts of mainstream dams

- The MRC's Basin Development Programme is also assessing the impacts of the mainstream dams through its development scenario analysis, which assesses the likely changes in flow and their effects on key environmental and social indicators.
- To date, MRC's scenario analysis has focused on limited aspects of the Mekong's ecology and society. Efforts are currently underway to further develop and refine the scenario analysis including integrating the environmental, social and economic impacts.

Photo: Timo Kuronen

- Lack of transparency and public engagement in MRC modelling has raised questions about the reliability and credibility of the results and a wider understanding of the assumptions used to determine the findings.

Using knowledge to inform decisions

- The mainstream dams present a challenge to MRC in terms of how it uses its knowledge base to inform debates and decisions around mainstream dams.
- In response to this challenge, the MRC Secretariat is undertaking a number of activities in relation to mainstream dams:
  - basin-wide assessments, including a strategic environmental assessment of the mainstream dams;
  - advice on individual projects on request of member states;
  - administering Procedures for Notification, Prior Consultation and Agreement; and
  - facilitating dialogue at different levels.

Each of these activities raises key issues and concerns regarding MRC's ability to demonstrate that its knowledge can influence decisions over mainstream dams.

MRC and the wider community

- Recent reviews of MRC and its strategic plan have all emphasised the need for MRC to improve its public engagement strategy if it is to become an effective and engaged river basin organisation.
- Recent policy changes have been proposed to increase MRC's engagement with non-state actors.
- There are considerable challenges to realising meaningful stakeholder engagement, given that MRC is not directly accountable to the public according to its institutional mandate.
- Consideration of MRC's role must be made in light of the rapidly-changing development context in the Mekong region, in which MRC is just one of many players.

Introduction

The Mekong River runs through or borders six nations: China, Myanmar (Burma), Thailand, Lao PDR (Laos), Cambodia and Vietnam. The Mekong River Commission (MRC) was established with the signing of the 1995 Mekong Agreement by the governments of the Lower Mekong countries — Cambodia, Lao PDR, Thailand and Vietnam — to ensure the sustainable use and management of water and related resources of the Lower Mekong Basin.

Whereas China is halfway through constructing a cascade of large hydropower projects on the Upper Mekong (Lancang Cascade) mainstream, the lower stretch of the river has so far remained free flowing. This may soon change, however, with studies currently underway on up to 11 hydropower dams planned for the Lower Mekong mainstream.

The proposed mainstream dams pose significant threats to the ecology of the Mekong River Basin and the livelihoods of local communities dependent on the river and its resources. Given that MRC is an intergovernmental organisation which, under the 1995 Mekong Agreement, has a mandate to "cooperate in all fields of sustainable development, utilization, management and conservation of water and related resources of the Mekong River Basin," attention has focused on the role of MRC in relation to the proposed mainstream dams.

Since 2007, civil society organisations and MRC donors* have issued statements expressing concern over MRC's effectiveness in proactively addressing threats to fisheries and food security posed by developments in the basin. In response, MRC has consistently claimed that it is an intergovernmental organisation, not a supranational one, and that its primary role is to support and serve its member states as it is requested to do. More recently, however, under the guidance of a new chief executive officer, MRC has undertaken to engage more directly with critical issues surrounding hydropower development in the basin and, specifically, the mainstream dams.

Advocating for a more transparent and inclusive river basin organisation is crucial to ensure that decisions regarding the use and management of river-related resources consider the interests and rights of multiple water users, particularly those who are most economically and socially marginalised.

This report examines the governance and knowledge role of MRC in relation to mainstream dams. The overall aim of the report is to demonstrate what MRC knows about the impacts of mainstream dams and to clarify its governance role in terms of decision making in relation to these dams. Written at a key time in the region's development, this report draws on research produced by MRC and relevant discussions at the international conference on "Mekong mainstream dams: People's voices across borders" held in Bangkok, Thailand, in November 2008. The report aims to deepen understanding of, and inform discussions on, MRC's roles and responsibilities in relation to mainstream dams.
The report is structured as follows:

- **Section 1** provides a brief overview of the changing development context in the Mekong region and factors contributing to renewed attention on hydropower development, including on the Mekong mainstream.
- **Section 2** outlines MRC's governance and knowledge roles, and examines aspects of the 1995 Mekong Agreement relevant to the mainstream dams, including its different interpretations.
- **Sections 3 and 4** summarise publicly-available knowledge that has been produced by MRC, in particular research carried out under its Fisheries Programme and its modelling of development scenarios.
- **Section 5** analyses and raises questions regarding how MRC acts on its knowledge base to inform planning and decision-making processes in the basin.
- **Section 6** explores the challenges and opportunities arising from MRC's recent efforts to improve its engagement with various stakeholders in a rapidly-changing development context.

* *MRC donors include: Asian Development Bank (ADB); World Bank; ASEAN; Australia; Belgium; Denmark; European Commission; Finland; France; Germany; Japan; Netherlands; New Zealand; Sweden and USA*

1. Mekong mainstream dams: new trends in hydropower development

1.1 The latest hydropower boom

The economies of the Mekong region continue to grow. As a result, government planning agencies and state power utilities are predicting significant increases in future electricity demand, particularly in China, Thailand and Vietnam. Up until the early months of 2009, when the impact of the global financial crisis began to be felt in Southeast Asia, the government of Thailand estimated that electricity demand would double by 2021, while in Vietnam the government predicted a quadrupling of electricity demand by 2015.[1]

To meet those projected demands, Thailand planned to import at least 14,000 megawatts of electricity,[2] much of which would be sourced from hydropower dams in Lao PDR, Myanmar (Burma) and China, while Vietnam planned to develop most of its domestic hydropower potential over the next 20 years, as well as import electricity from Lao PDR, Cambodia and China.[3]

Meanwhile, hydropower development of the major rivers flowing through Yunnan province is a feature of the Chinese government's plans to meet the country's increasing energy demand. For example, China is halfway through constructing a cascade of large hydropower projects on the Upper Mekong mainstream, known as the Lancang Cascade.[4] There are also plans to import electricity from hydro projects located geographically close to China's south-western border region — namely in Myanmar's (Burma) Salween and Irrawaddy basins and in northern Lao PDR. However, many of the Chinese-sponsored hydropower projects in the Lower Mekong Basin are actually planned for either domestic electricity consumption or for export to Thailand and Vietnam. Thus, while Chinese developers and financiers are playing a prominent role in the renewed push for hydro development in the Mekong region, China's projected massive growth in electricity demand has played less of a role in shaping electricity demand and supply patterns in the Lower Mekong Basin than the needs of Thailand and Vietnam.

The governments of Lao PDR, Cambodia and Myanmar (Burma) have responded to the growth in regional energy demand by developing their hydropower potential for electricity export and domestic consumption, and to support their own economic growth. Indicative of the importance placed on electricity exports as a means of generating revenue in Lao PDR and Cambodia, government officials from both countries have stated their intentions to become the "batteries of Southeast Asia".[5]

While the rapid acceleration in Mekong hydropower proposals seen in 2007 and 2008 is currently slowing down in response to the global economic crisis, the expectation is that regional electricity demand will continue to grow in the long term, and plans for extensive hydropower development will be pursued as a means of meeting that demand.

Irrespective of periodic economic slumps, projected increases in electricity demand, and ways of meeting them, are heavily contested by energy analysts and civil society organisations in the region, who argue that large hydro projects are founded on unrealistic expectations of future electricity demand growth in Thailand and Vietnam. They cite a flawed and closed energy planning process, strongly influenced by monopoly electricity utilities that have incentives to overestimate demand, as key factors that favour the expansion of large centralised power plants and impede the adoption of policies and reforms promoting cleaner, more cost-effective and less environmentally and socially damaging ways of meeting the region's energy needs.[6]

Alongside projected increases in electricity demand, new sources of private sector financing from countries such as China, Vietnam, Thailand and Malaysia are driving the rapid expansion of hydropower in the Mekong region. These new hydropower developers, often with the support of export credit agencies and commercial financiers from their own countries, are taking advantage of

Left: Fishers near the site of the proposed Luang Prabang dam on the Mekong River, Lao PDR. Photo: TERRA

the opportunities presented by a renewed push for hydropower development in the region, while filling an "investment vacuum" left by western donors and international financial institutions (IFIs).[7] The importance of international financial institutions such as the World Bank and Asian Development Bank (ADB) as direct financiers of large hydropower projects has declined in recent years, although they continue to promote hydropower as a catalyst for other development projects and investments.[8] The banks have tended to place more emphasis on mobilising private capital through the provision of risk guarantees and funding associated infrastructure (such as transmission lines), technical studies and mitigation (community development) programs.

Photo: Glenn Daniels/Manna Gum

The emergence and proliferation of new project developers and financiers, coupled with changing roles of traditional financiers of large dams, signals a growing complexity and dynamism in the way different actors are becoming involved in decision-making on mainstream dams. This poses significant challenges for civil society as well as institutions such as MRC, which is tasked with sustainably managing and developing the water resources of the Lower Mekong Basin.

To date, financial and technical support to MRC has been justified on the grounds that its role is to facilitate and support informed decision-making. However, the fast-changing development context poses significant challenges for MRC and its ability to influence planning and decision-making processes with respect to hydropower developments in the basin. MRC has responded to questions about its continuing relevance by referring to the 1995 Mekong Agreement, which includes provisions for a formal consultation process between member states prior to any decision being taken on mainstream dams *(see section 5.3)*. MRC has also emphasised its unique capability to provide analysis of the cumulative impacts of hydropower from an integrated basin perspective. Recognising that energy ministers have either remained relatively unaware of the role that MRC can play in terms of facilitating strategic assessments and providing advice on best practice, or see MRC as a hindrance to their development plans,[10] MRC has recently taken steps to clarify its role and mandate by convening regional stakeholder consultations and meeting with energy ministers and developers *(see section 5.4)*.

Concerns that MRC could become further marginalised from decision-making processes about developments in the basin have spurred the organisation to seek greater engagement with the private sector. As Jeremy Bird, the Chief Executive Officer of MRC Secretariat, put it: "Frankly, if we don't engage developers in the same way we engage with governments ... we'll be left at the train station while the train is leaving."[11]

1.2 Lower Mekong mainstream dams

Whereas China is halfway through constructing large hydropower projects on the Upper Mekong mainstream (the Lancang Cascade), the lower stretch of the river shared by Lao PDR, Thailand, Cambodia and Vietnam has so far remained free from hydropower development. However, this may soon change as plans develop to build up to 11 large hydro dams on the Lower Mekong mainstream *(see map on page 15)*.

The location, status, and project sponsors of the proposed dams are summarised in the table below. Most of the proposed mainstream dams will generate electricity for export to neighbouring countries,

Summary of dams planned for the Lower Mekong mainstream			
Dam (country)	**Installed Capacity***	**Project Sponsor (Country)**	**Status****
Pak Beng (Lao PDR)	1,230 MW	Datang International (China) & Government of Lao PDR (GoL)	Memorandum of Understanding (MoU) for feasibility study signed in August 2007.
Luang Prabang (Lao PDR)	1,410 MW	Petrovietnam Power Corporation (Vietnam) & GoL	MoU for feasibility study signed in October 2007.
Xayabouri (Lao PDR)	1,260 MW	CH. Karnchang Public Co. Ltd & PT Construction and Irrigation (Thailand)	MoU for feasibility study signed in May 2007; Project Development Agreement signed in November 2008
Pak Lay (Lao PDR)	1,320 MW	China Electronics Import & Export Corporation; Sinohydro Corp. Ltd (China) & GoL	MoU for feasibility study signed in June 2007.
Xanakham (Lao PDR)	570 MW	Datang International (China) & GoL	MoU for feasibility study signed in December 2007.
Pak Chom (Lao-Thai border)	1,079 MW		Thailand's Department of Energy Development and Promotion is reportedly seeking funding to proceed to feasibility study stage.
Ban Koum (Lao-Thai border)	2,000 MW	Italian-Thai Development Public Co. Ltd. (Thailand); Asia Corp Holdings Ltd (Lao PDR) & GoL	MoU for feasibility study signed in March 2008.
Lat Sua (Lao PDR)	800 MW	Charoen Energy and Water Asia Co. Ltd. (Thailand) & GOL	MoU for feasibility study signed in April 2008.
Don Sahong (Lao PDR)	360 MW	Mega First Berhad Corporation (Malaysia)	Project Development Agreement signed in February 2008.
Stung Treng (Cambodia)	980 MW	(Russia)	According to the Cambodian country presentation at the MRC hydro consultation (in September 2008) an MOU for feasibility study has been signed with a Russian company.
Sambor (Cambodia)	2,600 MW	China Southern Power Grid (CSPG) (China)	Following signing of MoU in October 2006, Guangxi Grid Company, a subsidiary of CSPG, has been conducting studies.

*Installed capacity figures vary according to source. The figures listed here are from the MRC Secretariat newsletter, *Catch and Culture* 14(3): 6–7.
** Status is current at the time of writing (June 2009).

primarily Thailand and Vietnam. As can be seen in the table, the companies involved in developing them are public-private entities largely from within the region.

This is not the first time hydropower projects have been proposed for the Lower Mekong mainstream. In its 1970 Indicative Plan, the Mekong Committee, the precursor to MRC, presented plans for a cascade of seven large multi-purpose dams on the Lower Mekong mainstream. With a total capacity of 23,300 megawatts, the so-called Mekong Cascade would have transformed much of the Lower Mekong River into a series of large reservoirs capable of storing more than one-third of the Mekong's annual flow. While the plans did not materialise due to geopolitical conflicts in the region and concerns over the potential social and environmental impacts, the Mekong Committee and Secretariat continued to earmark significant resources for "revised" plans.

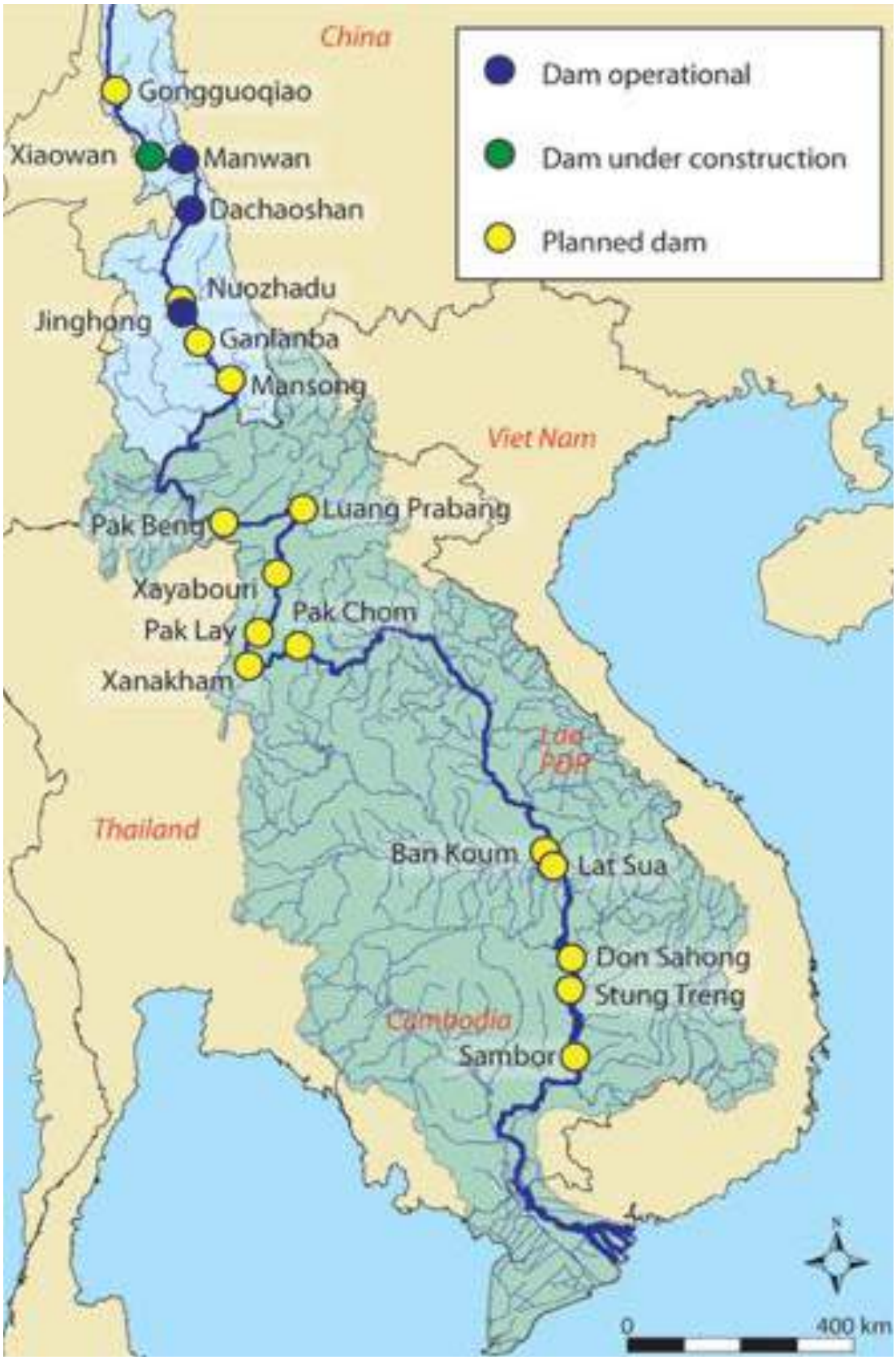
Svay Katana setting up a basket fish trap on the Mekong River. Photo: Timothy Herbert/OxfamAUS

In 1994, a few months before the signing of the 1995 Mekong Agreement, the Mekong Secretariat published a study outlining plans for up to 11 "run-of-river" hydropower dams on the Mekong mainstream, which were presented as a lower impact alternative to the cascade proposed by the Mekong Committee two decades earlier.[11] MRC continued to seek funding to conduct pre-feasibility studies for three of the mainstream dams proposed in the 1994 study, but the plans came to a halt after the 1997 Asian financial crisis caused a sudden decline in Thailand's electricity demand.

In the years that followed, the mainstream dam proposals were not acted upon, and many people came to consider the dams an unlikely reality, particularly given the new doctrine of "sustainable development" espoused by MRC. For example, in 2000, Joern Kristensen, the then Chief Executive Officer of MRC Secretariat, noted that "big schemes on the mainstream are probably out of the question now";[12] while MRC's 2003 State of the Basin report states that "no plans are currently being considered for damming the mainstream in the lower basin".[13]

Nonetheless, the last two years have seen the revival of the mainstream projects. While all but one of the 11 dams now being considered for the mainstream were identified in the 1994 study published by the Mekong Secretariat, these projects have for the first time advanced to pre-feasibility and feasibility stages. The most advanced of the proposed dams are Don Sahong and Xayabouri in Lao PDR, for which investors signed project development agreements with the Lao government in February and November 2008, respectively.

Among the factors behind the renewed interest in the mainstream dams are increased volatility of gas and oil prices, which has made hydropower more economically competitive as a source of energy, and the predicted increase in dry season flows as a result of the Lancang Cascade currently under construction in Yunnan province, China. Preliminary results presented by MRC Secretariat at its Hydropower Programme Consultation in September 2008 indicate that average dry season flows in northern Lao PDR and Thailand, where six of the 11 mainstream dams are proposed to be built, will increase by 30 to 50 per cent.[14] The predicted increase in average dry season flows translates to an increase in dependable capacity for run-of-river projects currently proposed for the mainstream, making them more economically-attractive propositions from an investor's point of view. At the same time, MRC's Initiative on Sustainable Hydropower Work Plan (draft March 2009) states: "The regulation of flows in the Lancang River and implementation of any or all of the proposed mainstream projects in the Lower Mekong basin could have profound and wide-ranging impacts in all four riparian countries." [15]



Existing and planned hydropower dams on the Upper (Lancang) and Lower Mekong mainstream.
Source: Mekong River Commission Secretariat May 2009.

2. The roles of MRC: responsibilities and expectations

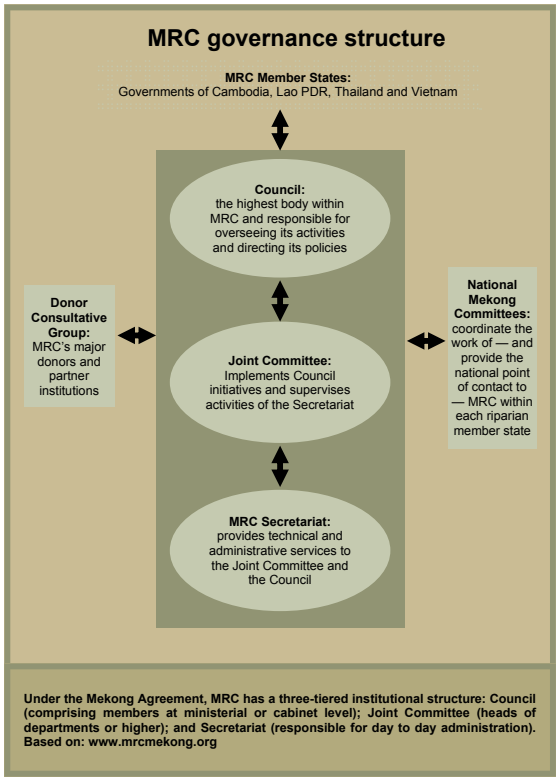
The revival of plans to dam the Mekong mainstream focuses attention on the governance role of MRC as an international river basin organisation with the task of ensuring the sustainable use and management of water and related resources of the Lower Mekong Basin. MRC member states, the MRC Secretariat, donors and civil society all continue to draw on the 1995 Mekong Agreement to make claims about what MRC should and should not be doing and what type of river basin organisation it ought or ought not to be.

While questions regarding MRC's role have been posed since its inception, revived proposals for damming the main stem of the river signal an especially critical time for MRC. How MRC addresses key concerns and balances different interests in the basin will have significant bearing on MRC's perceived relevance to its member states, donors and the people of the basin.

2.1 MRC's responsibilities and obligations with respect to mainstream dams

The 1995 Mekong Agreement, signed by the four Lower Mekong governments, establishes MRC as the institution through which international cooperation is to be achieved (Article 11), and outlines its governance arrangements, through an MRC Council, Joint Committee and Secretariat (Articles 18, 24, 30).[16] The Agreement outlines a number of principles and commitments for cooperation in the sustainable development and management of the Lower Mekong Basin. Those of particular relevance to mainstream dams are outlined below.

- **Recognition of multiple uses:** The Agreement clearly recognises that there are different uses and users of water and related resources in the Lower Mekong Basin, and that sustainable development requires coordination across a range of sectors in order "to optimize the multiple-use and mutual benefits of all riparians and to minimize the harmful effects ..." (Article 1). Implicit in this Article is that planned interventions in one sector (such as hydropower) must be compatible with others (such as fisheries).
- **Basin Development Plan:** Article 2 states that MRC should focus on joint and/or basin-wide projects and programs and that this should be done by drawing up a Basin Development Plan (BDP). The BDP is the framework under which MRC can be informed of, and assess and prioritise, proposed developments, in particular those considered to have significant basin-wide implications. The assessment and prioritisation of projects are intended to contribute to an integrated water resources management-based strategy for developing and managing the basin's water resources. Since the proposed mainstream dams were not included in the development scenario analysis of the first phase of the BDP, assessments of their potential impacts are currently being "fast-tracked" under the second phase, "BDP2".[17] If the BDP is to remain meaningful, dams should not go ahead without reference to the plan.



Under the Mekong Agreement, MRC has a three-tiered institutional structure: Council (comprising members at ministerial or cabinet level); Joint Committee (heads of departments or higher); and Secretariat (responsible for day to day administration). Based on: www.mrcmekong.org

- **Ecological responsibility:** Articles 3 and 7 underline MRC's responsibility "to protect the environment, natural resources, aquatic life and conditions and ecological balance of the Mekong River Basin," including "making every effort to avoid, minimize and mitigate harmful effects that might occur" from the development and use of the river. This includes recognition of the need to

Left: Riverbank gardens near the site of the proposed Ban Koum dam. January 2009. Photo: TERRA.

MRC procedures

- **Procedures for Information Sharing and Exchange,** approved in 2001, provide a framework for operationalising data and information exchange among the four MRC member countries, with the secretariat as custodian and manager of the MRC Information System (MRC-IS). The Guidelines on Custodianship and Management of the MRC-IS, adopted in July 2002, define key operating principles and activities of data custodianship and management.
- **Procedures for Water Use Monitoring,** approved in 2003, provide a framework for implementing intra- and inter-basin water use monitoring.
- **Procedures for Notification, Prior Consultation and Agreement (PNPCA),** approved in 2003, outlines the scope, timeframe, content, format and institutional mechanism for administering a formal consultation process between member states *(see section 5.3).*
- **Procedures for Maintenance of Flows on the Mainstream,** approved in 2006, provides a framework for technical guidelines, institutional arrangements, directions and information to enable MRC to maintain and manage flows on the Mekong mainstream as required by Articles 6 and 26 of the Mekong Agreement. Technical guidelines that define acceptable flows to be maintained at specific locations are yet to be established. "Rules for Maintenance of Flows on the Mainstream" were renamed "procedures" at the 11th MRC Council meeting in December 2004.

These procedures were developed under the Water Utilisation Programme, which ran from 2000 to 2008. The procedures are available at: www.mrcmekong.org/programmes/wup.htm

Nam Lik River Dam. Photo: Timothy Herbert/OxfamAUS

maintain certain flow regimes on the Mekong mainstream important for fisheries productivity and other environmental considerations (Articles 6 and 26).

- **Water utilisation:** Agreement for use of water from the Mekong mainstream rests on the principle of "reasonable and equitable" utilisation (Article 5). Precise rules as to what is "equitable" and "reasonable" are not outlined. While there are provisions in the Agreement stipulating that rules will be formulated (Article 26, 5B), these presently take the weaker form of informal "procedures".

A number of procedures have been agreed to by the four member governments *(see box "MRC procedures").* Of particular importance for the Lower Mekong mainstream dams are the Procedures for Notification, Prior Consultation and Agreement (PNPCA), which outline a formal consultative process among member states with a view to reaching an agreement for developments on the mainstream *(see section 5.3).* However, these procedures are not rules enforceable under the Agreement on which parties could rely if and when a dispute arises over mainstream dams. MRC does not wield authority over countries when it comes to the management of major projects in the Lower Mekong Basin such as the proposed mainstream dams.

Perspectives on MRC's role

"The 1995 Agreement mentions that there has to be development. We must have dams to regulate the river. The BDP is a development project and not a regulation project."

— Vietnamese Joint Committee member, 2005.[18]

"[T]he countries have been lately showing more impatience at the MRCS' weak record in helping the countries identify opportunities for development and helping facilitate investment."

— World Bank–ADB, MWRAS Working Paper, June 2006.[19]

"Donors are concerned about the direction towards increased emphasis on MRC becoming an organisation that drives investments. In our view the MRC should maintain and strengthen its unique role as a knowledge-based river basin organisation to support decisions on developments in the basin."

— Donor group statement, December 2005.[20]

"Development Partners are particularly concerned that public and private stakeholders are not being consulted, and that the cumulative impacts of dams on fisheries and food security are not being given adequate attention. In this regard, we request the MRC Council to provide information on how the procedures for notification, prior consultation and agreement are being applied."

— Statement by Development Partner Consultative Group, 15 November 2007.[21]

"It is also evident that member countries are looking for practical outcomes to improve their understanding of the MRC as an organisation that is helping plan for development in the river basin — it is not, in other words, just a body undertaking scientific studies."

— AusAID, Mekong Water Resource Strategy, September 2007.[22]

"We are not set up as a development finance organization. We have a role to support development in the basin. We do not have an enforcement role, we have a facilitation role."

— Chief executive officer of MRC Secretariat, May 2008.[23]

"It is now time that the MRC's role is reviewed to ensure it is acting in the manner befitting an objective, scientific river basin management organization that it was set up to be. An important first step would be for the MRC to publicly call for a dam development moratorium until scientific evidence of the individual and cumulative impacts of dam development is in the public domain and all party stakeholders including public consensus has been achieved on the best way forward."

— Statement by Thai People's Network for Mekong and Rivers Coalition of Cambodia, September 2008.[24]

2.2 Interpretations of MRC's governance role

The 1995 Mekong Agreement gives MRC an outline of responsibilities, but descriptions of its functions and authority are vague. The Agreement was designed as a loose agreement because of the political conditions at the time of the formation of MRC and because of the very limited scope for MRC to take authority over and above what the member governments provided space for.

Partly because of the looseness of the Agreement there are many different understandings and interpretations of MRC's role and authority, and these expectations differ both among and between MRC donors, member governments and civil society from within and outside the region (see box "Perspectives on MRC's role"). These various expectations of what MRC is or should be — and no doubt there are more — are not mutually exclusive, but the emphasis is different from one group to another. Although some of the statements were made prior to the renewed interest in mainstream dams, they reflect the diversity of views and understandings of MRC among different parties, and this diversity persists.

Photo: Glenn Daniels/Manna Gum

MRC is an intergovernmental organisation, whose strategic direction, policies and decisions are decided by the Joint Committee and Council, made up of the four member governments, while the secretariat plays an advisory role *(see MRC governance structure, p.17)*. MRC has no statutory supranational authority, so in a formal sense, MRC has no regulatory authority. MRC is instead driven by the national interests of its member governments,[25] which are officially represented through the National Mekong Committees (NMCs), but more commonly reflect the interests of other ministries that are more powerful and involved in national decision-making than those currently sitting on MRC Council. These interests tend to focus on the economic benefits countries think they can extract from the river, and it is primarily this that drives member states' views about MRC's function and purpose (for example, the view that the commission play an investment facilitation role).

At the same time, MRC is still largely a donor-funded organisation. Some 90 per cent of MRC's funding comes from international donors, who have their own expectations about what the money is going to be used for and about what kind of organisation they're supporting. In this sense, MRC is also a donor-driven organisation, and the expectation from donors is that MRC should be sufficiently empowered by its member states to support decision-making processes in the interest of the broader public and the river system, beyond the narrower interests of individual states.

While MRC is a "governed" rather than a "governing" organisation, this is not always understood by civil society groups in the region, who have called on MRC — and the Secretariat in particular — to act on the Agreement and intervene in its own right to address concerns or resolve grievances arising from developments with transboundary impacts.

While there has been much heated debate around MRC taking on a regulatory versus investment facilitating role, there is less controversy around the idea of MRC evolving into a knowledge-based organisation that provides objective scientific knowledge to inform decision-making and planning processes in the basin. Linked to this is the expectation that MRC should be an Integrated Water Resources Management (IWRM) agency trying to integrate different sectors and stakeholder groups,

a role which most people see as important for any organisation working in a basin as complex as the Mekong.

In summary, MRC is:

- an intergovernmental organisation owned and governed by the will of its four members states; and
- capable of generating knowledge that can be used to assess individual projects in a basin-wide context.

MRC is not:

- a supranational organisation with regulatory power;
- an organisation that can make decisions or intervene in its own right; or
- accountable directly to the broader public.

Grey areas of MRC's authority are:

- the allowable extent of public engagement and accountability;
- its role as a proactive knowledge-based river basin organisation;
- its responsiveness to knowledge requests by the public; and
- its capacity to inform or influence development decisions in the basin.

2.3 The knowledge role of MRC

The emphasis on MRC as a knowledge-based organisation raises a number of important questions regarding the process of knowledge generation and the accessibility and use of that knowledge in informing decisions. MRC's Strategic Plan 2006–2010 asserts that "MRC needs to engage actively and visibly in large national projects with significant basin-wide implications", and that its contribution in this role is its knowledge base and assessment tools.[26] Given the emphasis on the knowledge role of MRC, it is worth examining MRC's potential use of this capacity in the context of the proposed mainstream dams.

There are many areas in which MRC can use its accumulated information and knowledge, and the considerable resources that have gone into producing that information and knowledge, to help manage and develop the river more equitably and sustainably. There are two areas of scientific knowledge of particular relevance to mainstream dams. One is research carried out under MRC's Fisheries Programme, and the next section asks specifically what MRC studies conducted so far tell us about the implications of mainstream dams on fisheries.

Another area of knowledge concerns the assessment and modelling tools developed under MRC's Water Utilisation Programme (WUP), which are being applied to assess the cumulative impacts of mainstream dams. While it may be too early to ask what MRC's models tell us about the implications of mainstream dams on factors that influence the overall productivity of the Mekong (such as water flows, sediment and water quality), the discussion in section 4 explores issues surrounding the accessibility and transparency of the modelling process and the reliability and representation of the results released to date.

3. Fisheries knowledge

Since MRC's inception in 1995, millions of dollars have gone into its Fisheries Programme in generating knowledge of the Mekong's fish and fisheries. Although not specifically addressing the impacts of mainstream dams, the Fisheries Programme has produced a wealth of information regarding the size and value of the Mekong fishery, its economic and livelihood significance, the ecological processes and functional characteristics that support fisheries, and the principal threats to the ongoing productivity and sustainability of the Mekong's fishery. More recently, with the renewed focus on mainstream dams, the Fisheries Programme has been conducting a number of activities examining the implications of mainstream dams for fisheries, the results of which are planned to be released throughout 2009.[27]

3.1 Size and value of the Mekong's fishery

Aquatic biodiversity

Although estimates regarding the Mekong's inland fish biodiversity range from 785 to 1,500 species depending on the source, it is widely recognised that the Mekong hosts one of the most diverse aquatic faunas in the world, with high rates of endemic species.[28] The high diversity of fish and other aquatic species is intimately linked to the Mekong's complex ecosystems, and is a major factor contributing to the exceptionally high fisheries productivity and yield.[29]

Fish productivity and yield estimates

The growing recognition of the importance of the Mekong's fish and fisheries is reflected by estimates of total yield, which has increased significantly since the early 1990s. Growing estimates presented in MRC Fisheries Programme research and annual reports over the years can been seen in the table on page 24.

Recent published estimates indicate a yield of more than 3 million tonnes per year, of which more than 80 per cent comes from wild capture fisheries. This has led experts to affirm that the Mekong is the largest inland fishery in the world,[30] representing about 2 per cent of the total world marine and freshwater capture fishery.[31]

Economic value

The Mekong fishery has an estimated value of USD $2–3 billion per year,[32] contributing significantly to the economies of all Lower Mekong countries. Even so, MRC notes that this estimate "certainly understates the macro-economic significance of the fisheries sector because it does not include the incremental value derived from resale, exports or associated industries".[33] Thus, "allowing for multiplier effects the fishery is worth several times that figure, and its replacement value is far higher".[34] Women play a particularly important role in value-adding through their involvement in processing fish and fishery products, as well as marketing and trade. Yet, their vital contribution to the industry is often undervalued.[35]

Livelihood and nutritional value

Fisheries yield estimates and their contribution to national economies still do not truly capture the value of fisheries in terms of household income, nutrition, livelihoods and culture. MRC research states, "All official data of fisheries yield are less than estimates derived from consumption data. National data exclude or under-report the important artisanal and subsistence fisheries which make a major contribution to yield".[36] In its 2003 State of the Basin report, MRC also notes, "It has become obvious

Left: A Chinese survey boat near the site of the proposed Pak Lay dam. Photo: TERRA

that people in the region are far more dependent on the Mekong's fishery for household nutrition, income and livelihoods than was previously believed".[37]

Survey results have shown that between 64 and 93 per cent of rural households in the Lower Mekong Basin are involved in fisheries, with wild capture fisheries a significant contributor to household nutrition and income generation.[38] The consumption of fish and other aquatic animals provides 47 to 80 per cent of animal protein intake, depending on country,[39] and is a major source of "essential elements (including calcium, iron and zinc) and vitamins — particularly vitamin A".[40]

Estimates of fish yield in the Lower Mekong Basin

Year	Yield/tonnes
1991	approx. 356,000
2000	> 1 million
2002	> 2 million (1.53 million tonnes from capture fisheries)
2005	> 3 million (2.64 million tonnes from capture fisheries)

Source: MRC Fisheries Programme Annual Reports 2001:4; 2002:4; 2005:4-5

While difficult to quantify, the nutritional value of fish and aquatic animals are economically significant, given that the "economic consequences of these deficiencies are a cycle of malnutrition, low productivity and poverty".[41] There is no readily available substitute for fish in the diets of people in the Lower Mekong Basin.[42] Moreover, despite large investments in aquaculture, it is estimated that 90 per cent of consumption is derived from capture fisheries, indicating limited capacity of aquaculture to replace wild capture fisheries.[43]

This importance was reaffirmed by Chris Barlow, the then Manager of MRC Fisheries Programme, at the mainstream dams conference in November 2008: "Aquaculture is never a full replacement for capture fishery There are added costs with aquaculture and there are different beneficiaries. The people who are catching fish on the river at the moment are not the people who are going to be developing big aquaculture operations".[44]

An abundance of research points to the importance of fisheries in rural livelihood strategies, particularly for the poorest.[45] The bulk of the fish caught in the basin is by subsistence or part-time fishers.[46] For these people fisheries provide an important source of food, nutritional security and supplementary income. As a 2002 MRC technical paper notes, "The cost of replacing this essentially-free resource with another source of food, income and employment would be prohibitive. With this perspective, it is clear that the conservation of capture fisheries is crucial to maintaining food security and social stability."[47]

3.2 Fish migrations

Fish migrations play an important role in the functioning and productivity of the Mekong's ecosystem. Eighty-seven per cent of Mekong fish species for which information is available are migratory.[48] Many species travel long distances, often crossing national borders, to reach feeding, refuge and spawning habitats at different times and stages of their life-cycles. The reliance of fish on seasonal habitats that are geographically separated is considered a driving force behind fish migrations.[49]

The intimate link between the Mekong's hydrological regime, the life cycles of fish, and their migration between widely separated habitats is evident in the strong correlation between mass migrations of fish and the annual Mekong flood–drought cycle. The size and extent of the flood has significant influence on fisheries productivity. Generally, fish yields are higher when there is "a larger flood, which lasts for a longer period and which occurs when fish are ready to reproduce".[50]

Change in water level (and discharge) is the most commonly cited "trigger" for fish migrations. Although a review of fish migration triggers published by MRC in 2006 notes that there is little knowledge of the physiological or environmental factors that trigger migration, of the species for which migration cues are known "ninety per cent respond to changes in water level or in discharge".[51]

From subsistence-based to large commercial operations, Mekong fisheries are largely based on and have adapted to the capture of migratory fish. In Cambodia, for example, migratory stocks constitute a dominant part of the annual harvest, which averages an estimated 400,000 tonnes per year.[52] Similarly, the bulk of the annual catch in Khone Falls, one of the most important fisheries in Lao PDR, is comprised of migratory fish.[53] At a basin-wide level, it has recently been estimated that 40 to 70 per cent of the total fish catch in the Lower Mekong Basin is dependent on long distance migratory fish.[54]

Given the importance of migrations to fish life-cycles and fisheries, the MRC Fisheries Programme has called for an "ecosystem approach" to fisheries management in the Lower Mekong Basin. This approach focuses on protecting the ecological integrity of the river system, maintaining the connectivity between critical habitats (migration corridors) and emphasises the importance of the annual hydrological pattern, including its role in the creation of seasonal floodplain habitats which are considered the main "fish production sites".[55]

Community Fishery Project, Laviphangdeang village, Lamam District. Photo: Jerry Galea/OxfamAUS

3.3 Dams as a threat to Mekong fisheries

Although unsustainable fishing practices place pressure on fishery resources, it is now widely agreed that the principal and most irreversible threats to the Mekong's fisheries arise from developments in the basin that alter the natural flow regime, damage or destroy fish habitats, and/or block or restrict fish migrations.[56] "Dams and flood control schemes in particular diminish river-floodplain fisheries, as they cause all of these impacts."[57]

The threat that dams pose to the future sustainability of the Mekong's fisheries has been increasingly acknowledged by MRC and others. A 2004 MRC technical paper identifies the impacts of water infrastructure as "The overriding threat to the future of the Mekong's fish and fisheries".[58] Similarly, a 2007 report published by the Cambodian National Mekong Committee (CNMC) and the WorldFish Center (WFC) asserts that "Dams are the main type of structure having an impact on fisheries production, through their negative impact on fish migrations".[59] Dams built to date in the Mekong basin have had significant impacts on migratory fish *(see box "Key fisheries impacts of three existing dams in the Lower Mekong Basin").* Migratory fish are particularly vulnerable to the impacts of dams, "because of their dependence on many different habitats, their extensive distribution area and reliance on migration corridors connecting different habitats".[60]

Although the extent of the impacts that dams have on fisheries' productivity depends on the dams' location, size, design and operation regime, the proposed dams on Mekong mainstream are of particular concern given that the Mekong mainstream is a corridor for most long distance migrations.[61]

3.4 Implications for mainstream dams

In 1994, when the Mekong Secretariat published its study outlining plans for up to 11 "run-of-river" hydropower dams on the Lower Mekong mainstream, it also commissioned an evaluation of the likely impacts of mainstream dams on fish and fisheries.[62] While the study highlights the lack of fisheries baseline data as a major constraint to adequately assessing the impacts of mainstream dams, it does raise several points of concern that suggest the proposed "run-of-river" dams carry significant risks for the future viability and sustainability of the Mekong fisheries.

Key fisheries impacts of three existing dams in the LMB

[excerpts from MRC State of the Basin: 2003, p.112.]

Nam Song dam, Lao PDR: *"Following completion of the Nam Song weir in 1996, 40 fish species disappeared and 20 transboundary migratory fish species were lost from catches in neighbouring countries. Of these, 20 species were transboundary migratory (TBM) or long distance migratory species (LDM)."*

Pak Mun dam, Thailand: *"Before filling the Pak Mun Dam... 265 fish species were recorded in its diverse variety of aquatic habitats, and the fish spawning grounds were accessed by fish from the Mekong mainstream. Following the construction of the dam, only 96 fish species have been recorded upstream of the dam, and of those, 51 fish species have declined in abundance. The construction of the dam has caused the upstream extinction of long distance transboundary migratory species, which previously returned annually to spawn in the rapids."*

Theun-Hinboun dam, Lao PDR: *"Many Mekong River fish species in the Cyprinidae and Gyrinocheilidae families feed primarily on periphyton (algae attached to substrate)... Increased water levels caused by the Nam Hinboun and the Theun-Hinboun hydropower projects in Lao PDR wiped out periphyton communities and with them, the periphyton-feeding fish species."*

Key findings from the 1994 Mekong Secretariat fisheries evaluation of mainstream dams

- With respect to the six projects proposed for northern Lao PDR and the Lao–Thai border area (Pak Beng, Luang Prabang, Pak Lay, Xayabouri, Chiang Khan–Xanakham, Pa Mong–Pak Chom), the authors of the study note that if all six dams were built, "they will remove almost all of this reach as a free-flowing stream and convert it into a cascade system that will inundate spawning areas, remove wetland and littoral habitat, increase downstream incubation drift time, block upstream migration, cause turbine mortality, flood the confluences of tributaries, and induce species changes and reduce biodiversity".[63]
- The study describes Khone Falls, the area of the proposed Don Sahong dam in Lao PDR, as "an ecologically unique area that is essentially a microcosm of the entire lower Mekong River Such a site is so rare in nature that every effort should be made to preserve all of Khone Falls from any development".[64]
- Regarding Sambor dam in Cambodia, the study states, "The Sambor project [will] impact upstream and downstream [fish] migration. Target species will be separated from spawning areas between Sambor and Stung Treng. Not only will spawning migrations be eliminated but increased water level behind the dam will affect the migration of young fish into (wet season) and out of (dry season) floodplain habitat The effect of isolating fish stocks from historical spawning and rearing areas will have effects far upstream to perhaps Pakse and beyond, and on the Great Lake fishery".[65]
- Noting that the proposed Sambor dam site would be located within a "highly complex migration and rearing corridor and floodplain", the study states the project "will require an effective passage system for all migratory fish species to avoid or minimize significant impacts. Effective fish passage may be a remote possibility, requiring substantial research and development that may not prove fruitful".[66]

- The study highlights the potential consequences of the barrier effect of mainstream dams to fish migrations: “This one impact alone may cause a wholesale decline in the fishery throughout the Lower Mekong River. Blocking migration cuts out a critical link in the biological chain of migrating species”.[67]

Other studies pointing to impacts of mainstream dams on fisheries

Although MRC has undertaken an economic evaluation of fisheries impacts and a review of a preliminary draft environmental impact assessment (EIA) of the Don Sahong dam, and has initiated a range of assessments of the mainstream dams (including strategic environmental and cumulative impact assessments),[68] these have not yet been made publicly available. Nevertheless, other research published by MRC and other institutions makes reference to the implications of mainstream dams on fisheries. For example:

Mrs Kong Heang with some fingerlings to be laid out to dry. Photo: Lee Fitzroy/OxfamAUS

- A 2007 science brief published by the WorldFish Center (WFC) highlights the especially important role Hou Sahong channel, site of the proposed Don Sahong dam, plays in fish migrations basin-wide. Drawing on 28 scientific studies, the brief asserts, “Obstructing fish migration at Khone Falls therefore would have social, ecological and economic implications basin-wide”.[69]
- According to MRC’s 2003 State of Basin report, “A mainstream dam, on the Mekong below the Khone Falls ... would prevent the migration of adult white fish from the floodplains and others to their spawning grounds upstream in northeast Cambodia At these times [of peak migration] at least 50,000 fish per minute are swimming past a given point in the Tonle Sap River. No existing fish ladder design could cope with these numbers of fish”.[70]
- Highlighting the importance of deep pools and rapids in Sambor, a 2002 MRC technical paper on fish migrations states that, “[Sambor dam’s] impacts on migratory fish stocks would be significant”.[71] Reasons include: change in hydrology upstream and downstream, which would “lead to deep pool refuge habitats filling up with sediment and disappearing”; blocking or significant impairment of migration corridors between floodplain and refuge habitats; and “interference with the larval drift system, causing increased direct mortality as well as indirect mortality”.[72]
- A paper presented at the 6th Technical Symposium on Mekong Fisheries in 2003 was more direct in its analysis of Sambor dam’s potential impacts on fisheries, stating, “Any dam on the Mekong mainstream in this part of Cambodia could be disastrous for fisheries, but this site [Sambor] is the worst possible location from this perspective”.[73]
- In a paper presented at the First Asia and Pacific Forum on Poverty in 2001, Joern Kristensen, the then Chief Executive Officer of MRC Secretariat, stated, “A dam on the main stream could in its worst case scenario cause the collapse of the resource system around the flood plains in central Cambodia and the Mekong Delta of Viet Nam. The fish migrations are vital to these resource systems. The systems would probably recover only slowly and partially from constructions that might cut off large spawning habitats (and then only if given a chance)”.[74]

- An article published in MRC's *Catch and Culture* in December 2008 estimates that "the migratory fish resource at risk from mainstream dam development in the Mekong is in the range 0.7–1.6 million tonnes per year that amount of fish is equivalent to 1.6–3.5 times the entire beef production of Cambodia, Lao PDR, Thailand, and Vietnam".[75]
- The World Bank–ADB (2006) draft working paper for the Mekong Water Resources Assistance Strategy (MWRAS) notes: "The Mekong River in Cambodia has potential for mainstream hydropower, but even a run-of-the-river dam would inundate a comparatively large area and would have major impacts on fish migration in that stretch of the river. Such development would pose serious ecological, social and economic risks that could outweigh the potential benefits from power generation".[76]
- According to a hydrological analysis of potential development scenarios commissioned by the World Bank as part of the MWRAS, "any development which directly impedes fish migration in the mid and lower reaches of the river will have significant negative impacts on fish production. Mainstream dams or weirs in the mid and lower Mekong are therefore most unlikely to be part of any balanced development scenario that complies with the objectives of the [1995 Mekong] Agreement. It is also clear that floodplain connectivity is fundamental to fisheries production and river health and must be protected".[77]

Photo: Timothy Herbert/OxfamAUS

3.5 Can the impacts of mainstream dams on fisheries be mitigated?

Despite various attempts to mitigate fisheries impacts of tributary dams, a 2007 report by the Cambodian National Mekong Committee (CNMC) and WFC "found no examples of positive long-term impacts of dams on fisheries, nor any effective mitigation measures in the Mekong Basin".[78] Commonly-proposed measures to mitigate fisheries impacts include the establishment of reservoir fisheries and the construction of fish passes to facilitate migration past the dams. The 2007 CNMC and WFC study states, "Out of the hundreds of species in the Mekong Basin, only nine are known to breed in reservoirs", and a reservoir fishery "usually does not compensate for the loss of downstream fisheries". Furthermore, "there are no examples of fish passes that work in the Mekong Basin".[79]

In light of growing concerns over mainstream dams' impacts on fisheries, MRC Secretariat convened a meeting of fisheries experts to examine the barrier effect of mainstream dams on fish migration in preparation for its Hydropower Programme Consultation in September 2008. According to Patrick Dugan, Deputy Director of WFC and chair of the two-day meeting, "the meeting concluded that current fish-passage technology would not be effective in maintaining the migration of the large number and diverse fish species in the Mekong".[80] The meeting also concluded that "compensation for loss in yield from river fisheries is impossible to achieve through the development of reservoir fisheries".[81]

Despite the recognition that there are no effective mitigation measures for fisheries, discussions at the MRC Hydropower Programme Consultation in September 2008 continued to focus on trade-offs and mitigation.[82] In particular, the experience of Columbia River was raised as a successful mitigation operation, despite questions about its applicability to the Mekong context. "Columbia River is home to between five and eight salmanoid species, rather than 1,300 species identified in the Mekong".[83]

The issue of mitigation was further discussed at the mainstream dams conference in November 2008. While acknowledging that the barrier effect of mainstream dams on fisheries cannot be mitigated with existing technologies, Jeremy Bird, Chief Executive Officer of MRC Secretariat, emphasised that it was still necessary to discuss mitigation with developers early on in the planning process. Given that measures directed at facilitating fish migration would represent a forgone opportunity for developers in terms of power generation, he said, “Developers need to be made fully aware of the ramifications of mitigation measures”.[84]

However, concerns that focusing on mitigation may add more weight to the proposed mainstream dams were raised by another panellist, Professor Philip Hirsch, Director of the Australian Mekong Resource Centre at the University of Sydney: “When we start to bring mitigation into the discussion in an area where we know on existing evidence produced by the organisation that mitigation is not possible, we make it much more likely and politically acceptable that such projects go ahead”.[85] Chris Barlow’s presentation on the same panel emphasised the value of the fisheries and demonstrated in a review of various types of fish passes that the fisheries impacts of dams cannot be mitigated under existing technologies, nor those that may be developed within the timeframe in which current proposals for dams are being discussed.[86] Philip Hirsch then posed the question of whether there is “a role for a more proactive use of knowledge in which MRC uses its science to inform the debate in a balanced way, and perhaps challenging some of the more dominant voices”.[87]

Photo: Chau Doan/OnAsia for Oxfam America

4. Mekong River Commission models and assessment tools

The blocking of fish migration routes constitutes only one aspect of the impacts that mainstream dams are likely to cause. In order to assess their impact on a range of other factors that affect ecosystem productivity such as flow, sedimentation and water quality, MRC has recently included the proposed mainstream dams in its basin-wide scenario analysis. The results are intended to inform planning and decision-making processes and assist in the formulation of the Basin Development Plan (BDP).

According to Jeremy Bird, Chief Executive Officer of MRC Secretariat, the assessment of cumulative impacts through its scenario analysis as well as the strategic environmental assessment *(see section 5.1)* of the Lower Mekong mainstream dams "will provide an overall framework of understanding and trends within which to review individual proposals as and when they are initiated for prior consultation".[88] *(See also section 5.3).*

At the core of MRC's basin-wide scenario analysis is the Decision Support Framework (DSF), a suite of hydrological models and impact assessment tools which predict the likely changes in flows from proposed developments and their effect on key environmental and social indicators. These analytical tools have been developed by MRC to assist in assessing the magnitude of changes arising from proposed developments and their likely costs and benefits.

The preliminary results of MRC's modelling of flow changes in the Lower Mekong mainstream arising from various development scenarios were presented at MRC's Hydropower Programme Consultation in September 2008. They indicate that the Lancang Cascade in China will result in an increase in average dry season flows by 10 to 50 per cent, with the most significant increases in northern Lao PDR and Thailand (30 to 50 per cent); while average wet season flows are predicted to decrease by 3 to 15 per cent.[89]

While concluding that the Lancang Cascade will be the main cause of flow changes in the Mekong, the preliminary results also indicate that the Mekong River's seasonal flow regime — that is, its pattern of distinct dry and wet season flows — will be maintained. Furthermore, the preliminary results suggest that further downstream such as in the Tonle Sap Lake in Cambodia, the Lancang Cascade will only marginally change the volume, duration and timing of the annual flood, which constitute "a fraction of the historically observed natural year-to-year variability".[90]

For the 11 dams planned for the Lower Mekong mainstream, the results indicate that because these are proposed as run-of-river schemes,[91] they "will not change the hydrological regime of the river over and above the Definite Future Scenario" (that is, the Lancang Cascade), and thus will "not affect the flood pulse, flooding and salinity intrusion".[92]

According to MRC's Hydropower Programme Consultation proceedings, however, "Several participants focused on the fact that only flow simulations have been made so far, and that siltation issues (including sediment monitoring), impacts on the delta (salinity and sediments), water quality issues and the impact of daily regulations, rather than just averages, need to be considered".[93] In response, "MRCS reiterated that these issues are indeed on the agenda to be addressed by relevant MRC programmes over the next 12 months".[94] This agenda includes incorporating the results of its research on fisheries, sedimentation and water quality into its scenario analysis, and undertaking a strategic environmental assessment of the mainstream dams *(see section 5).*

Given that the modelling and assessment tools will underpin MRC Secretariat's knowledge input to formal consultations between member states around mainstream dams (through the Procedures for Notification, Prior Consultation and Agreement), it is important to point out some of the questions and concerns that have been raised to date with respect to the accessibility and transparency of MRC modelling process, and the reliability and representation of the results.

Left: Seng Yuvann of Koh Phdau village in Cambodia, is one of the many fisherfolk along the Mekong River who rely on fishing to support their families. Photo: Maureen Bathgate/OxfamAUS

4.1 Limitations of the Decision Support Framework models

While the models developed under MRC's Water Utilisation Programme (WUP) "created an expectation that social, economic, environmental impact analysis would also be undertaken by the MRC", the recently published mid-term review of MRC's Strategic Plan 2006–2010 notes that "Scenarios and CIA [Cumulative Impact Assessment] are so far largely focused on hydrological considerations".[95] In other words, MRC's scenario analysis to date has focused on limited aspects of the Mekong's ecology (that is, water quantities), with insufficient attention paid to other crucial ecological and social factors.

Eng Paally weeds her dry season vegetable garden on the banks of the Mekong River. Photo: Timothy Herbert/OxfamAUS

Narrowness of studies

The construction and operation of hydropower dams not only influences flows, but also affects a range of other factors, such as water quality and the supply of sediment and nutrients downstream, which have significant bearing on the functioning of the Mekong ecosystem as a whole. Because the DSF does not include the assessment of these other parameters, the models' capacity to provide relevant insights into the impacts on environment, fisheries, and people's livelihoods has been questioned.[96] This is particularly the case given the growing recognition that ecosystem productivity in the Mekong is driven by a complex interplay of various factors, and that meaningful impact assessments need to examine the cumulative or combined impacts of hydropower developments in an integrated manner.[97] Yet, few if any existing impact assessment processes in the Mekong are able to encompass the magnitude of cumulative or combined impacts of development in different parts of the basin and at different scales.[98]

Uncertain hydrological impacts

Even on purely hydrological grounds, there are uncertainties surrounding the estimates of flow changes from hydropower development produced by DSF models. Peter Adamson, a hydrologist consultant currently working with MRC, has noted, for example, that while the general direction of changes to the hydrological regime (that is, an increase in dry-season flow) predicted by the DSF may be accurate, "the magnitude [of change] would have to be treated with caution as there would be significant levels of uncertainty linked to the estimate".[99]

Adamson has also pointed to the shortfalls in the ability of the DSF to simulate impacts of hydropower development, stating that " the DSF would not be the modelling system of choice on which to base an assessment of the consequences for the regional hydrological regimes of hydropower expansion in the Mekong Basin Meaningful hydropower simulations needs operational data and dedicated simulation models that are far more sophisticated than the relevant modules within the DSF".[100]

Because of the uncertainties and limitations of existing basin-wide impact assessments, there have been calls to compare the results of DSF with other available models and assessment tools in order to gain a more comprehensive understanding of the possible impacts of hydropower development on the Mekong basin and its people.[101] As noted by members of the WUP-FIN project (a complementary project to the MRC Water Utilisation Programme, funded by the Ministry for Foreign Affairs, Finland), "widening the platform to an ensemble of models for different scopes, involving model comparison and cross validation would most likely lead to increasing credibility and additional usefulness of the DSF".[102]

While different cumulative impact assessments undertaken in the basin to date all point to an increase in dry-season flows and a reduction in peak wet-season flows as a result of upstream hydropower development, they have produced different estimates of the magnitude of changes this will likely cause.[103] These differences are linked to the different development scenarios and assumptions on which the models are based, as well as differences in the models and tools themselves.[104]

For example, three different impact assessments have produced different estimates of the impacts that increased dry-season flows will have in terms of increased water levels in the Tonle Sap Lake in Cambodia, with figures varying from 16cm to 60cm.[105] Likewise, the same three studies have produced different estimates of the area of floodplains that will be reduced as a result of a reduction in peak wet season flows, with figures ranging between 10 and16 per cent.[106] While these differences may seem small, MRC/WUP-FIN studies reveal that the damage can be significant, as even relatively small rises in water levels will permanently inundate disproportionately large tracts of gallery forests surrounding the lake.[107]

The permanent inundation of surrounding forest and reduction of seasonal floodplains would have significant ramifications for the productivity of the Tonle Sap. MRC's own research under its multidisciplinary Integrated Basin Flow Management (IBFM) initiative[108] indicates that a high development scenario would result in 20 to 30 per cent reduction in the productivity potential of the Tonle Sap Lake and surrounding floodplains.[109] Although difficult to quantify, this will likely translate to significant losses in fisheries, with widespread implications for Cambodia in terms of livelihood, economy and food security.

Photo: Timothy Herbert/OxfamAUS

4.2 Masking uncertainties, downplaying risks

Given the uncertainties and shortcomings of existing models and assessment tools, it is of utmost importance that models and accompanying planning processes are transparent and that they take into account the broad range of impacts at different scales. This means that not only the results, but also the methods and assumptions built into the models — which can significantly influence outcomes — are placed in the public domain, including acknowledgement of the limitations and uncertainties.

However, to date, MRC has not been proactive in this regard. The scenario analysis conducted under the first phase of the BDP and its IBFM work, for example, has not been publicly released. When results have been published they have been presented with little or no information about the assumptions on which they are based, limiting opportunities for public debate and independent verification of results and their interpretation.[110]

Fisher along the Mekong River in Laos.
Photo: TERRA

The lack of transparency and space for public engagement in MRC's modelling process has raised questions about the credibility and reliability of the results. Hydrologists who worked on the MRC/WUP-FIN modelling project, for example, have noted that there is still a lot of work to do in making DSF a credible modelling platform and that "MRC would benefit greatly from continuing validation and scientific review of the model system."[111]

Credibility issues aside, there is always room for the manipulation in the interpretation of modelling results to justify particular development directions or policy action, as demonstrated in the case of the Mekong Water Resources Assistance Strategy (MWRAS), a joint initiative of the World Bank and ADB. Drawing on the results of scenario analysis commissioned by the World Bank in 2004, which used data and models developed by MRC, the MWRAS joint working paper asserts that "the analytical work on development scenarios has, for the first time, provided evidence that there remains considerable potential for development of the Mekong water resources".[112] While little information was made available with respect to the criteria for assessing which factors were included or omitted from the models and why, a hydrograph showing that the Mekong's distinct patterns of wet and dry season flows are maintained even under a high development scenario was widely used by the World Bank and ADB.

As noted earlier, hydrological impacts alone cannot be a proxy for drawing conclusions on the ecological, social and economic consequences of proposed developments. Nevertheless, the hydrological analysis and hydrograph were presented as "evidence" of the Mekong river system's "significant tolerance for development, including hydropower and water diversion for irrigation".[113]

The results and interpretation of the MWRAS scenario analysis were criticised by civil society organisations for overestimating the potential benefits and underestimating the risks, including masking potential impacts at the local level.[114] Questions were also raised over the robustness of the models, with convenors of a regional water dialogue where the MWRAS was discussed noting that "hydrograph scenarios are themselves yet to be widely accepted in the wider basin community".[115]

In much the same way, the preliminary results of MRC's scenario analysis of mainstream dams and

their interpretation presented at the Hydropower Programme Consultation need to be viewed with caution. While efforts are currently underway to further develop and refine the scenario analysis, including integrating environmental, social and economic impacts, unless the assumptions and uncertainties are made more explicit, questions over the accuracy, transparency and credibility of the results will remain unresolved.

Recognising that "the credibility of the MRC modelling and assessment tools as perceived by the NGOs, line agencies and development partners [is a particular concern]", MRC has recently stated its commitment to a more transparent and open process.[116] This includes hiring a consultant to ensure MRC assessments are scientifically robust, publishing results of models and assessment tools together with information on limitations and credibility, and providing opportunities for groups to follow up and review the modelling process and results, including assumptions.[117] This commitment is certainly a step in the right direction, and it is hoped that MRC will fulfil its promises and facilitate a more open and participatory process in the formulation of its scenarios and models, and in discussions of their outputs and interpretation.

Luang Nam Tha dam, Lao PDR. Photo: Marcus Rhinelander

5. Using knowledge to inform decisions: linking MRC's knowledge and governance roles

The previous sections have examined two areas of MRC's knowledge production — fisheries and hydrological models — in an attempt to pinpoint what MRC knows and does not know about the likely impacts of the proposed Lower Mekong mainstream dams. But what does this knowledge mean in terms of MRC's governance role?

Emphasis on MRC as a knowledge-based organisation raises important questions over how it acts on that knowledge to influence planning and decision making in the basin. While significant resources have been devoted to building the knowledge base of MRC, up until now this strategy has not had much effect in terms of informing decisions or policy, nor has MRC proactively used its knowledge to facilitate open and participatory discussions regarding development directions in the basin. As noted by Jeremy Bird, Chief Executive Officer of MRC Secretariat, "Whereas in the past we may not have been very effective in getting that knowledge out of our doors, I think we now have this as a commitment which we recognise we need to improve."[118]

If this commitment is to have any basis, then a key question to consider is the extent to which MRC is able to be more proactive and less reactive in the use of its knowledge. Related to this is the issue of access to publicly funded knowledge — accessibility in terms of who has rights to ask for or demand knowledge produced by MRC, and also in terms of how to make science more intelligible to non-specialist stakeholders. Public disclosure of scientific and economic analyses should be the policy position for MRC; where confidential commercial issues are raised there should be clear justification of this on the public record.

MRC has made some recent efforts to clarify its role and initiated or "fast-tracked" a range of activities focused specifically on mainstream dams. As stated by Jeremy Bird in June 2008, "[A]cross all our work there is already a push to meet the challenge posed by the mainstream dams".[119] Areas or roles where MRC claims to be using its knowledge base to inform discussions and decisions over mainstream dams include basin-wide assessments, providing advice upon request for individual projects, administering the Procedures for Notification, Prior Consultation and Agreement (PNPCA) and facilitating dialogues. MRC's activities in relation to these four areas and related issues are discussed below.

5.1 Basin-wide assessments of mainstream dams and the strategic environmental assessment

One area where it is commonly agreed that MRC has a comparative advantage over other institutions is its capacity to undertake basin-wide assessments of the proposed mainstream dams, drawing on the knowledge base that has been built since 1995. As Jeremy Bird explains, a particularly important role for MRC is "to move away from these projects being looked at on a case-by-case or project-by-project basis, and to ... undertake a more strategic basin-wide assessment of the implication of these projects".[120]

To do this MRC has initiated a number of studies to assess the potential implications of mainstream dams on, among other things, fisheries, sediment and water flows, which will culminate in a Strategic Environmental Assessment of the dams.[121] These activities are being "fast-tracked" so as to provide a framework under "which to review individual proposals as and when they are initiated for prior consultation".[122]

According to the MRC Draft Initiative on Sustainable Hydropower Work Plan (March 2009), the main

Left: Mekong River near Ban Koum dam site. Photo: TERRA

objective of the strategic environmental assessment is "to identify clearly the socio-economic and environmental impacts and implications of a range of alternative [mainstream dam] development strategies and thereby assist the governments of Member States in decision-making on this issue".[123] The downstream implications of the Lancang Cascade will also be assessed as part of the strategic environmental assessment.[124]

In addition to formulating "specific policy-level recommendations on whether and how the hydropower projects on the Mekong mainstream should be best pursued", the strategic environmental assessment is said to provide a framework for assessing the individual environmental impact assessments (EIAs) of mainstream dams, and serve as a model for conducting strategic environmental assessments of hydropower developments in the Mekong's sub-basins, which will be carried out as part of the BDP.[125]

Photo: Timothy Herbert/OxfamAUS

Although at the time of writing detailed information regarding the content and process of the strategic environmental assessment were not yet publicly available, the study will be carried out by the International Centre for Environmental Management,[126] and is envisaged to be completed around June 2010.

Key issues and concerns

- While acknowledging the value of MRC's knowledge base and its unique capacity to undertake basin-wide assessments, concerns have been raised about the transparency of the knowledge generation process and accessibility of results, which have implications for its perceived credibility as an organisation providing objective scientific advice *(see also section 4).*

  As noted in the organisational review of MRC Secretariat and the National Mekong Committees published in January 2007, "MRCS is starting to become known (among civil society organisations, scientific organisations), as an institution that will not release information that may illustrate negative environmental and social consequences of development projects. This is a threat to the credibility of the organisation".[127]

- The organisational review also mentioned that a new disclosure policy was being submitted to the Joint Committee. Since then, the disclosure policy has undergone a number of drafts, but no space has been provided for broader public input into the policy to date. A follow-up assessment to the organisational review (February 2009) notes that "Some development partners are concerned about the extent of the disclosure policy" and points to the risks that a restrictive attitude to information disclosure poses for MRC:[128]

  "MRC has a public relations dilemma here. Critical environmental impact analyses and scenarios showing negative impacts of Basin developments on livelihoods are politically sensitive issues. While disclosure may give rise to difficult public debates and possible revisions of development plans, non-disclosure of critical data creates an even worse situation — because leaks will inevitably occur and the resulting loss of credibility will lead to the irrelevance of MRC. The Assessment Team ***recommends*** *(8): the adoption of full openness by MRC on scientific data and analysis produced by MRCS" (emphasis in original).*

This echoes the recommendation of the mid-term review of MRC's Strategic Plan, which states that "MRC should adopt a policy of **more open disclosure and access to information** with regard to its database, reports and other information resources along with a marketing strategy for making its products and services useful to the basin community and available in a timely and effective manner" (emphasis in original).[129]

- With respect to the strategic environmental assessment, it is not yet clear how the information and analysis will be made available to interested parties during different stages, and what opportunities they will have to contribute to the process. Broader public input into the strategic environmental assessment, particularly during the initial scoping phase, is important as this influences the direction and framework of what is included or not in the assessment. This could also contribute to building public confidence in and acceptance of the results later on.
- It is not yet clear whether the strategic environmental assessment will include a comprehensive options assessment whereby the mainstream dams will be evaluated against a range of alternative options for meeting the region's energy needs. There is mention of plans to conduct a regional macro-economic study to "establish the longer term regional demand and hydropower generation capacity and compare cost benefits with other sources of energy",[130] but again, no details have been provided on when and how this study will be conducted.
- There is also the question of how and whether the knowledge produced by MRC will inform decisions, given the insufficient linkages between MRC programs and national planning systems.[131] As noted in the MRC Strategic Plan 2006–2010, "Studies and research work, no matter how well done, will have no impact if they are not used in development planning".[132]

  In its Hydropower Development Strategy 2001, MRC recognises that a limitation of its EIA or strategic environmental assessment work is "its lack of formal link to any decision-making functions of legal or economic character" and that "its value will be dependent on the willingness of the primary decision makers (national political authorities, and international donors and financing institutions) to accept and take into consideration the conclusions and recommendations of the EIA".[133]

Thus, while the strategic environmental assessment terms of reference and plan indicate a new intention to consider basin-wide impacts by MRC, questions remain over the extent to which the results will influence decision-making and planning processes of the member states. As highlighted in the mid-term review of the MRC Strategic Plan:[134]

> *"Rather than taking the lead, MRC activities have been playing 'catch-up' with Member States, who continue to make water resource development planning and decisions independently of dialogue within MRC processes. There seems little evidence that MRCS tools are being used in national planning and decision processes".*

5.2 Providing advice upon request on individual projects

Under Article 30B of the Mekong Agreement, the role of MRC Secretariat is to "provide technical and financial administration and advice as requested by the Council and the Joint Committee". For example, in 2007, the Lao Government's Water Resource and Environment Administration requested the Secretariat to review the draft EIA prepared for the Don Sahong project by a private company.

Independent sources suggest that the MRC Secretariat's review of the draft EIA pointed to a number of weaknesses in the EIA, including: underestimation of the geographic and economic extent of the

project's impact on fisheries; difficulties in proving the effectiveness of proposed mitigation measures to allow fish migration upstream; and overlooking fish mortality through turbines.[135]

The report, however, has yet to be publicly released. In response to a request by civil society organisations to publicly release the report, the Chief Executive Officer, Jeremy Bird stated: "In such cases, we need to seek the concurrence of the commissioning agency prior to releasing our report. However, it would not be appropriate to release the report publicly until the other member countries have had an opportunity to consider this work in detail".[136] Related concerns are discussed below.

Key issues and concerns

- Studies or technical advice on specific projects must be requested by member states. There are currently no mechanisms by which non-state actors can request information or studies on specific projects directly to the MRC Secretariat; such requests must be made through the member states (that is, National Mekong Committees, or NMCs).
- While in principle, community interests are represented by the NMCs, in practice, when a community or national civil society group working with communities has concerns about or has been affected by a development project, it is very difficult for them to get their concerns raised through these administrative structures. As the case of the Yali Falls dam on the Sesan River demonstrates, there is no guarantee that NMCs will take the grievances of communities to MRC in cases of transboundary impacts, including requests for impact studies.[137]
- A staff member of MRC's Fisheries Programme undertook an economic evaluation of the potential loss of fisheries resulting from the proposed Don Sahong dam which, to the authors' knowledge, was not formally requested by a member state. The extent to which the Secretariat or its staff can proactively undertake assessments of individual projects, and how these may be disclosed or used, therefore remains unclear.

5.3 Administration of Procedures for Notification, Prior Consultation and Agreement (PNPCA)

Article 5B (2a) of the Mekong Agreement and related Procedures for Notification, Prior Consultation and Agreement (PNPCA) specify that intra-basin water use on the mainstream of the Mekong River during the dry season shall be subject to arriving at an agreement by the Joint Committee. In other words, all dams proposed on the Mekong mainstream require prior notification and consultation, with the aim of reaching an agreement by the Joint Committee.

According to the 1995 Agreement, "prior consultation" means "Timely notification plus additional data and information to the Joint Committee", and does not include the right to veto. The PNPCA, however, does state that "The notifying State(s) shall not implement the proposed use [of water] without providing the opportunity of the other member States to discuss and evaluate the proposed use". According to the PNPCA, the timeframe for prior consultation is six months from the date of formal receipt of relevant documents, with the possibility of extending the period pending a decision by the Joint Committee.

At the time of writing, no formal notification had been given by member states for any of the proposed mainstream dams.[138] However, in June 2008, the Lao National Mekong Committee provided informal notice, sharing preliminary information on eight planned dams on the mainstream in Lao PDR and the Lao–Thai border.[139]

Key issues and concerns

- Governing all of the notification procedures are general principles of timeliness and good faith and cooperation. However, nowhere in the procedures is "timely notification" or "consultation" explained. The PNPCA only notes that prior consultation should take place before the implementation of projects (again, "implementation" is not defined) and that certain level of studies shall be provided with the notification.[140] Given the ambiguities, clarification on how the PNCPA are being applied in relation to the mainstream dams has been requested by civil society and donors alike.[141]

  In response, there has been some attempt to clarify at what stage of project preparation the PNPCA begins. According to a presentation by Jeremy Bird at the mainstream dams conference in November 2008, the PNPCA should begin sometime after the signing of a project development agreement (PDA), which grants developers exclusive rights to negotiate a concession agreement, but before the signing of a concession agreement and power purchase agreement. For example, he noted that because the PDA for the Don Sahong project was signed in early 2008, "we would expect that the formal notification process would take place within the first three to six months of 2009".[142] Likewise, a presentation by the Lao Department of Electricity at MRC's Hydropower Programme Consultation (September 2008), indicated that the PNPCA process is a requirement prior to approval for project implementation.[143]

- Jeremy Bird has pointed out that because formal notification (and hence disclosure of project-related documents) generally occurs late in the PDA phase, this could potentially cause tensions between the reviewing and consultation process under the PNPCA, and the developers' desire to push ahead and finalise a concession agreement that enables the project to proceed.[144] This raises the question of whether there is much scope for negotiations and consultations under the PNPCA process to significantly influence the design or operation of a project, to delay the signing of a concession agreement, or to prevent the project from going ahead, if concerns are not resolved.

Women crossing Tonle Sap Lake.
Photo: Jonathan Cornford/OxfamAUS

- Most importantly, there is no requirement under the procedures to extend notification and consultation to stakeholders beyond member states, including potentially affected communities. Furthermore, there are no provisions regarding the public disclosure of project-related information before, during or after the PNPCA process.

5.4 Facilitating dialogue

Finally, MRC has recently highlighted the role it can play in facilitating dialogue among different and at times competing interests.[145] According to the MRC website, one of the key activities of the Hydropower Programme (now called the Initiative on Sustainable Hydropower) will be to facilitate dialogues at different levels and between different interests. Activities identified to date include facilitating joint ministerial briefings in each member country to foster discussions and disseminate relevant results of the initiative; dialogue with private investors and financiers; continuing dialogue with China; and multi-stakeholder consultations.

Citing the BDP and Hydropower Programme regional stakeholder consultations, Jeremy Bird claims: "MRC's work plans for its various programmes are increasingly incorporating a broader interpretation of stakeholder participation that goes beyond involvement of government agencies to include representatives of civil society and the private sector."[146] Yet concerns have also arisen in this process.

Key issues and concerns

- Regional multi-stakeholder workshops are no substitute for long-term engagement with and meaningful participation of non-state actors. These regional forums have not included the participation of potentially affected communities.

Photo: Timothy Herbert/OxfamAUS

- Diversity of interests in water and river basin management are not represented through NMCs. Given that MRC is governed by the interests of its member states, its capacity to be responsive to concerns raised by other actors is limited.
- MRC's Strategic Plan 2006–2010 places emphasis on the importance of public involvement in ensuring the success of integrated water resources management (IWRM) in the Mekong basin. However, an organisational review of MRC conducted in 2006 states that "the present attitudes and practices in MRC regard the member governments as the primary, if not the only, stakeholders that should be involved with MRC. A clear commitment and strategy for involving the civil society is lacking".[147] Following the review, MRC has taken some steps to involve stakeholders beyond member states *(see section 6)*.
- MRC highlights the importance of continuing dialogue with China as an upstream country with significant capability to regulate mainstream flows through existing and planned dams (the Lancang Cascade), its role as a sponsor of hydro development in the Lower Mekong Basin, including the Lower Mekong mainstream dams, and also as a potential importer of hydroelectricity from the basin.[148] Yet, there is the question of whose interests are being represented in MRC dialogues with China.

  MRC's 2003 State of Basin Report states that, in light of the potential impacts, the Lancang dams "should be planned and operated in consultation with all countries in a river basin. Ideally such a scheme for consultation and rules for dam operation will be established by 2008-2009 — before the commencement of ponding of Xiaowan reservoir".[149] However, dialogue with China on hydropower development on the Lancang River has mainly been limited to the exchange of water level data to facilitate more accurate flood forecasting.[150]

To date, there is little indication that MRC has raised concerns with China about the risks the Lancang Cascade poses for downstream countries in terms of flow changes, or pursued negotiations aimed at minimising the risks to people in the Lower Mekong Basin. For example, it is conceivable that MRC could facilitate negotiations with China regarding the operational regime of the Lancang Cascade to minimise downstream impacts.

5.5 Knowledge implications

Given its structure and accountability to member states, MRC clearly faces challenges in demonstrating its capacity to act as a river basin organisation that proactively and independently uses its knowledge to advocate for the sustainable and equitable management of the Lower Mekong Basin. Central to this challenge is MRC's ability to recognise and mediate between different interests in the basin and to use its knowledge to advocate fairly and impartially for the river and those dependent on it, beyond the national interests of its member states.

With hydropower development and mainstream dams in particular identified as "the most important issue facing the MRC", its ability to demonstrate that its knowledge can have an impact on decisions on this matter is pivotal in determining the future relevance of the organisation. As stated in the mid-term review of MRC's Strategic Plan 2006–2010, "Unless the MRC can demonstrate tangible influence on this issue, serious questions will continue to be asked about its relevance, impact and effectiveness."[151]

Photo: Glenn Daniels/Manna Gum


Projected status of hydropower in the Mekong Basin
Projected status of hydropower in the Mekong Basin
- includes hydropower dams in operation, under construction and planned

6. Mekong River Commission and the wider community

Despite MRC devoting resources and time over the last 10 years to developing a public participation strategy which subscribes to principles of public involvement and stakeholder consultation, MRC has remained largely inaccessible to the people of the Mekong basin. Recent reviews of MRC and its strategic plan have all emphasised the need for MRC to improve its public engagement strategy if it is to become an effective and engaged river basin organisation that adheres to basic IWRM principles of stakeholder and community involvement in water resources management.[152]

Historically, MRC's lack of responsiveness to NGO and community requests for information and action in addressing transboundary disputes has led many to question MRC's ability to be an objective knowledge-based organisation that acts in the interest of the river and the basin population. Of particular concern is that MRC has remained silent in the public domain about major water resources development in the Lower Mekong Basin, despite the 1995 Agreement assigning MRC a key role.[153] Analysts have pointed to cases such as the Yali Falls dam on the Sesan River in Vietnam, where requests by affected communities and NGOs for MRC to intervene to help resolve transboundary impacts in downstream Cambodia were not responded to adequately;[154] and the Upper Mekong Navigation Improvement Project, where MRC involvement was seen to come relatively late in the process, with little effect.[155] Staff at MRC Secretariat, however, argue that this does not capture the whole picture, as the Secretariat has been proactive behind the scenes — for example, in bringing the Cambodian and Vietnamese governments to the negotiating table in the case of the Yali Falls dam.

With plans to dam the Mekong mainstream gaining momentum, civil society organisations and MRC donors have issued statements expressing concern over the MRC's effectiveness in proactively addressing the threats the dams pose to river ecology, fisheries and food security. A particular concern is that MRC continues to withhold scientific information of critical interest to the public, which exacerbates feelings of mistrust among civil society groups and gives little assurance of their inclusion in decision-making processes.

In November 2007, a letter signed by 201 civil society organisations and individuals from the Mekong and other countries criticised MRC for failing to uphold the 1995 Mekong Agreement, calling it an "extraordinary abdication of responsibility".[156] Since then, MRC has continued to be a target of civil society actions on mainstream dams, with calls for greater accountability and transparency: "The only way for the MRC to prove that it is capable of generating objective scientific data is to open its results and conclusions to public scrutiny. The MRC's unwillingness to do so is beyond comprehension, but not beyond suspicion."[157]

In response, MRC has consistently asserted that it is an intergovernmental organisation, and that its primary role is to support and serve its member states in ways it is requested to.[158] More recently, with the arrival of a new Chief Executive Officer, Jeremy Bird, and mounting pressure from its major donors to improve its outreach to different actors, MRC has given assurances that it will take steps to make its knowledge more accessible, and work to include a broader range of stakeholders in its activities and program.[159] This was reiterated at the mainstream dams conference in 2008, where the chief executive officer stated that "there is a strong commitment now to broaden the consultations from the MRC in what is going to be a very critical period for the MRC and for its engagement with the various countries and the stakeholders in those countries."[160]

Despite the good intentions, there are considerable challenges to realising meaningful stakeholder engagement, given that MRC's governance arrangement "gives states and not societies the ownership and access rights to the Commission and its decisions".[161] As Philip Hirsch, one of the panellists at the mainstream dams conference, pointed out, this raises the question of how MRC presents itself to

Left photo: Timo Kuronen

stakeholders it is trying to engage, particularly in light of its institutional structure, whereby MRC is not directly accountable to the public.[162]

6.1 MRC structure and public engagement

As noted in section 2, under the 1995 Mekong Agreement MRC is an intergovernmental organisation with a three-tiered governance structure comprising Council, Joint Committee and Secretariat. While not specifically mentioned in the Agreement, National Mekong Committees (NMCs) are supposed to be the points of contact for the public at country level. In practice, however, none of the NMCs has achieved a significant degree of public engagement. Moreover, their ability to influence, coordinate and participate in national policy formulation and planning processes has been hampered by their lack of technical and administrative capacity.[163]

Photo: Glenn Daniels/ Manna Gum

Being the operational arm of MRC, which provides advice and support to, as well as implements decisions taken by, the Joint Committee and Council, the Secretariat has been the main interface between the public and MRC governing bodies. Partly because of its role it is the Secretariat that has been the main target of actions from civil society organisations calling on MRC to address concerns regarding mainstream dams.

At the same time, however, the decision-making bodies of the institution — namely the Joint Committee and Council — have so far remained largely out of the public realm and there is little public awareness of the role they play in shaping MRC's policies and strategic direction. Although some international NGOs and institutions have been granted observer status, Council and Joint Committee meetings are generally held behind closed doors, with little public communication of discussions and decisions taken therein.

An interesting recent development has been the commissioning of a consultant by MRC to develop principles on stakeholder engagement and a policy on engagement with governance bodies — that is, the Joint Committee and Council. This follows on from the Joint Committee's adoption of recommendation 37 of the organisational review, which states the MRC "should consider formalising a stakeholder (NGO and civil society) consultative process as part of its annual meetings".[164]

The discussion paper developed by the consultant in preparation for MRC's regional meeting on stakeholder engagement held in November 2008[165] discusses a number of possible options for engagement including, among others, on-going regular thematic dialogues between MRC Secretariat, member countries and stakeholders; revising and expanding observer status for external parties at Joint Committee and Council meetings;[166] establishing a civil society consultative board to Joint Committee and Council; and creating a platform for regional stakeholders to engage directly in Council meetings.[167]

The establishment of a formalised mechanism for engagement could potentially create opportunities for civil society organisations and other stakeholders to convey their concerns directly to MRC governing bodies. Such a regional platform could provide an avenue for engaging ministers and line agencies, which may not be possible within national contexts due to the limited political space in some countries. It could also present an opportunity to ensure that developments with significant basin-wide

implications, such as mainstream dams, are placed squarely on the agenda of Joint Committee and Council meetings. According to the discussion paper, "The JC [Joint Committee] and Council meetings are not strategically addressing the types of issues that stakeholders are interested in such as current water-related development decisions."[168]

However, it is still uncertain whether the stakeholder engagement policy will actually be implemented in any meaningful way. Participation strategies developed by MRC in the past have not been translated into practice. As the discussion paper points out, there is a "strong risk that the impending [stakeholder] policy and implementation plan will not be implemented due to lack of political will or financial or human resources".[169]

Even if the policy is implemented, there is always the risk that participation in such forums could serve to justify plans and projects without having been influenced by the voices and concerns of actors from civil society. There are numerous examples in the region where consultations have not led to significant changes in policies and projects, yet the claim that "participation" has occurred has been a legitimising force behind decisions for controversial projects moving ahead.

Another issue to consider is whether all those potentially affected by developments in the basin will have an opportunity to engage in such forums, or whether participation will be limited to a number of international, regional and/or national organisations. In the past, MRC has pursued a strategy of selective engagement with more mainstream organisations, formalised through memoranda of understanding or partnership agreements; and more recently, its regional consultations have excluded the participation of local communities.

Furthermore, meaningful participation by diverse stakeholders would necessitate access and transparency of information which, as noted above, has not been the case so far. Of relevance is MRC's Communication Strategy and Policy on Disclosure of Data, Information and Knowledge which, according to the follow-up assessment to the organisational review (February 2009), has undergone several drafts.[170] At the time of writing, the policy has yet to be approved by the Joint Committee as disagreements over the degree of disclosure MRC should adopt remain unresolved *(see section 5.1).* As noted earlier, there has been no public input into this process.

6.2 Is MRC the main game?

The proliferation of private sector finance and its relationship to government decision making at different levels, the increased regionalisation of power development and trade in the Mekong, and the transboundary nature of the impacts of mainstream dams are among some of the factors that pose significant challenges for MRC, civil society organisations and others trying to influence decisions around mainstream dams.

This report is an attempt to contribute to a more informed analysis of MRC, including what it knows and does not know about the likely impacts of mainstream dams, and what it can and cannot do according to its institutional mandate. Yet, the authors also recognise that considerations about MRC's role in relation to the proposed mainstream dams must also be made in light of the rapidly changing development context, in which MRC is just one of a number of players. Moreover, it is an organisation whose role is that of "advisor" and not "decision-maker" when it comes to developments in the basin, including mainstream dams.

Indeed, decision making on mainstream dams will involve a complex interaction between an array of actors and processes, including different government ministries and line agencies, private and quasi-

public development companies and energy utilities, national energy planning processes and a range of bilateral and regional level forums and agreements. As the mid-term review of MRC's strategic plan points out: "At present MRC is a relatively small player sandwiched between larger ones in the business of promoting water related sustainable economic growth and development in the Mekong region.".[171]

MRC's ability to engage with different actors and processes is critical if it wants to influence decisions and remain relevant. Similarly, for civil society groups and others concerned about mainstream dams, an assessment of the importance of MRC in relation to other actors can facilitate more targeted strategies and actions. Attempts by both civil society and MRC to engage with different actors and processes that potentially have a bearing on the proposed mainstream dams are already evident.

Mekong River. Photo: OxfamAUS

For example, a number of civil society organisations are increasingly looking at energy planning and policy, questioning the rationale for large centralised power plants such as hydropower dams, while highlighting available cost-effective alternatives of meeting the region's energy needs. As part of this process, they have been engaging utilities and energy ministries — which tend to have more sway in national planning than ministries and line agencies affiliated with MRC[172] — and calling for a review of national power development plans, more participatory planning and independent regulation of the electricity sector.

MRC has also been making efforts to increase dialogue with ministries and line agencies responsible for energy planning and policy, as well as hydro developers. In December 2008, MRC organised a developers workshop focused on mainstream dams in northern Lao PDR, hosted by the Lao Department of Electricity, in which MRC outlined the areas in which it can contribute as well as the roles and responsibilities of the member states under the 1995 Mekong Agreement.[173] A similar meeting is scheduled to take place in Cambodia in mid-2009.

There have also been efforts to better understand the companies and financiers involved in hydropower development, and explore avenues for raising environmental and social standards of project developers and financiers. These approaches are based on the recognition that more information on and better understanding of the private sector, its relationship to governments and role in decision making, is needed in order to engage more effectively.

Citing the lack of environmental and social safeguard policies among many of the new hydropower developers and financiers involved in the Mekong region, some groups have pointed to the need for governments and private developers and financiers to adopt international frameworks of best practice such as those outlined in the recommendations of the World Commission on Dams report.[174] One potential avenue that has been raised is the adoption of Equator Principles, a voluntary set of environmental and social standards in project financing, which have been adopted by a number of private banks around the world.[175]

Another example of an international initiative which is of interest to MRC, but of which it is not a member, is the Hydropower Sustainability Assessment Forum (HSAF). This has its roots in efforts to produce an enhanced tool for auditing hydropower projects for sustainability across different stages

of national and regional energy and water planning and project implementation. Given that the forum involves private sector, donor and recipient government, multilateral and non-government actors, it is an initiative that has potential to advance better decision making on dams, including the consideration of cumulative and transboundary impacts.

The HSAF audit protocol will likely be trialled in the Mekong region, with MRC playing a facilitation role for regional consultation. MRC also has plans to pilot the assessment protocol in the 3S (Sesan, Sekong and Srepok) sub-basin as part of its Environmental Criteria for Sustainable Hydropower Development initiative, which is being implemented in partnership with ADB and WWF.[176] It should be noted that legitimate critiques have been aired by civil society groups and people's movements regarding the forum. A key concern raised is that the forum should not try to "reinvent the wheel" on decision making on hydro, but rather find a means to implement the guidelines and rights and risks approach of the World Commission on Dams.[177]

The types of initiatives illustrated above point to potential areas in which various actors concerned about the mainstream dams can engage. It is hoped that such initiatives can influence decisions that affect the lives of the basin's population. While beyond the scope of this report, these areas require further attention and analysis.

To remain relevant and effective requires adapting to a fast-changing context in which the private sector is playing an increasingly prominent role. This poses significant challenges for civil society as well as MRC. As stated in a follow-up assessment of the organisational review, "The MRC outside environment is changing very rapidly. However, the MRC is moving very slowly in adjusting itself to respond constructively to that reality. MRC may risk becoming less relevant to Basin development".[178]

Photo: Glenn Daniels/Manna Gum

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166 Currently, a number of international organisations (e.g. IUCN and WWF) and MRC development partners have observer status at MRC governance meetings. One of the areas the current consultancy is exploring is ways of making the observer mechanism more effective and participatory, including the possibility of expanding the observer status to a broader range of organisations.
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171 MRC (2009b) op. cit. 95, p.43.
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174 Middleton et al. (2009), op. cit. 8.
175 For more information on Equator Principles see http://www.banktrack.org/show/pages/the_equator_principles
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177 Oxfam is a member of the HSAF, and has consistently raised concerns with the lack of representation on the Forum from project affected peoples, indigenous groups and Southern NGOs. Oxfam joined the Forum though as an effort to ensure that other stakeholders do take consideration of the WCD and the interests and rights of these non-represented groups into consideration. For further information on the HSAF go to: http://www.hydropower.org/sustainable_hydropower/HSAF.htmlI; and for a critique of the process see: http://internationalrivers.org/en/blog/peter-bosshard/hsaf-process-—-non-starter
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Fisherman on the Mekong River. Photo: Timothy Herbert/OxfamAUS