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PROJECT PERFORMANCE ASSESSMENT REPORT

THE MEKONG RIVER COMMISSION

WATER UTILIZATION PROJECT

(TF-23406)

June 28, 2012

*Public Sector Evaluation
Independent Evaluation Group*

Currency Equivalents (annual averages)

Year	US\$	Cambodia <i>Cambodian Riel</i>	Laos <i>Lao Kip</i>	Thailand <i>Thai Baht</i>	Vietnam <i>Vietnamese Dong</i>
1999	1	3816.56	7094.75	37.89	13940.99
2000	1	3836.08	7622.88	40.18	14166.43
2001	1	3839.61	8589.19	44.50	14816.31
2002	1	3835.00	9935.55	43.10	15264.90
2003	1	3858.25	9935.55	41.58	15507.47
2004	1	3925.85	10590.49	40.28	15738.66
2005	1	4033.93	10627.42	40.27	15853.12
2006	1	4060.81	10167.04	37.10	15990.43
2007	1	4004.91	9605.56	33.20	16084.55
2008	1	4022.10	8754.15	33.07	16435.45
2009	1	4146.59	8515.90	34.34	17798.36

Abbreviations and Acronyms

ADB	Asian Development Bank
BDP	Basin Development Program (MRC)
CNMC	Cambodia National Mekong Committee
DCG	Donor Consultation Group
DSF	Decision Support Framework
GEF	Global Environment Facility
GEO	Global Environmental Objectives
ICR	Implementation Completion and Results Report
IEG	Independent Evaluation Group
MRC	Mekong River Commission
NMC	National Mekong Committee
PAD	Project Appraisal Document
PPAR	Project Performance Assessment Report

Fiscal Year

Cambodia:	January 1 – December 31st
Lao PDR	October 1 – September 30th
Thailand	October 1 – September 30 th
Vietnam	May 1 – April 30 th

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This report was prepared by Lauren Kelly who assessed the project in December 2010. Peer and Panel Reviews were provided by Kenneth Chomitz (who accompanied the mission) and George T. Keith Pitman, respectively. Research Assistance was provided by Ms. Tu Chi Nguyen. Romayne Pereira provided administrative support.

Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	n.a.	Moderately Unsatisfactory
Risk to Development Outcome	Negligible to low	n.a.	Significant
Bank Performance	Satisfactory	n.a.	Moderately Unsatisfactory
Borrower Performance	Satisfactory	n.a.	Moderately Satisfactory

* The Implementation Completion and Results Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEG product that seeks to independently verify the findings of the ICR. *Forthcoming*.

Key Staff Responsible

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About this Report

The Independent Evaluation Group assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEG annually assesses 20-25 percent of the Bank's lending operations through field work. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEG staff examine project files and other documents, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

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Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High, Significant, Moderate, Negligible to Low, Not Evaluable.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Preface

This is a Project Performance Assessment Report (PPAR) of the *Water Utilization Project (TF-23406)*, financed by a Global Environment Facility grant of US\$11 million made available to the Mekong River Commission. The grant was approved in February 2000 and closed in June 2008, a year later than planned, at which time US\$57,749 was cancelled. The Mekong River Commission is a river basin organization involving the governments of Cambodia, Lao PDR, Thailand, and Vietnam that provides assistance and advice to member countries on the development, utilization, conservation, and management of the Mekong River Basin water and related resources. China and Myanmar are observers. Its headquarters are located in Vientiane, Laos, and Phnom Penh, Cambodia.

This report is based on a review of project documents, including the Implementation Completion and Results Report, Project Appraisal Document, legal document and project files, and on discussions with World Bank staff involved in the project. An IEG mission visited Cambodia, Lao PDR, Thailand, and Vietnam from November 26-December 22, 2010. The IEG team held meetings with the Commission Secretariat – its Chief Executive Officer and technical staff – in both Vientiane and Phnom Penh. In each member country, the IEG team met with representatives of the National Mekong Committee, other relevant Government Officials, donor partners, and NGOs.

Mission coordination was facilitated by Ms. Viktoriya Yevsyeyeva in extensive cooperation with country counterparts: Ms. Khanh Linh Thi Le, Ms. Hoa Chau Nguyen, Ms. Nuong Dieu Nguyen, Ms. Dung Thi Thuy Dao, Ms. Phuong Minh Le, and Ms. Khai Hoan Nguyễn in Viet Nam; Mr. Thalavanh Vongsonephet (Teng) in Lao PDR; Ms. China Chhun in Cambodia; and Ms. Poonyanuch Chockanapitaksa and Ms. Vacharas Pasuksuwan in Thailand.

The mission is grateful to Mr. Alessandro (Alex) Nguyen Thanh Nha, for highly professional translation services that were provided in Vietnam and to Ms. Romaine D. Pereira for administrative support.

Following standard IEG procedures, copies of the draft PPAR were sent to government officials and agencies and comments received are attached as Annex C.

Summary

This is a project performance assessment of the *Water Utilization Project* implemented by the World Bank and financed with a Global Environment Facility grant of US\$11 million made available to the Mekong River Commission. The objective of the project was to assist the Mekong River Commission (MRC) to establish mechanisms to promote and improve coordinated and sustainable water management in the Mekong River Basin, including reasonable and equitable water utilization by the countries of the Lower Basin (Cambodia, Laos, Thailand, and Vietnam) and protection of the environment, aquatic life, and the ecological balance of the Basin.

Attempts to coordinate the sustainable development of the lower Mekong Basin began in 1957 with the establishment of the Committee for Coordination of Investigations of the Lower Mekong Basin (the Mekong Committee), at that time involving Cambodia, Laos, Thailand, and Vietnam. Relationships in the Lower Mekong Basin shifted with the end of the Vietnam War and the rise of the Khmer Rouge in Cambodia in the 1970s, resulting in a restructuring of the Mekong Committee. As Cambodia slipped into the role of a “non-participating but active” member of the riparian arrangement, an Interim Mekong Committee was formed by the three remaining countries (Thailand, Vietnam, and Laos) – an arrangement that would last from 1978–1995. Following the Cambodian Peace Agreement in 1992, Cambodia requested reactivation to the Committee. In 1995, the original members of the Mekong Committee (Cambodia, Laos, Thailand, and Vietnam) signed the Agreement on Cooperation for the Sustainable Development of the Mekong River Basin.

The Agreement established the Mekong River Commission (MRC), a regional facilitating and advisory body governed by water and environment ministers of the four Lower Riparian countries. The aim of the MRC is to ensure that the Mekong water is developed in the most efficient manner that mutually benefits all Member Countries and minimizes harmful effects on people and the environment in the Lower Mekong Basin. It is composed of a Secretariat, with 150 staff members, lodged within the two Secretariat offices in Phnom Penh, Cambodia and Vientiane, Lao PDR and the four National Mekong Committees, comprised of Government representatives and technical staff, located within each of the member countries.

With assistance from the United Nations Development Program, the MRC prepared its first Strategic plan (1999-2003) that identified five medium-term goals, the first of which was to assist with the formulation of Rules for Water Utilization and procedures for the notification and consultation of proposed water uses; maintenance of flows on the mainstream of the Mekong River, in particular with regard to dry season flows based upon an analysis of the natural flow regime; water quality criteria, rules, and measures for the protection of beneficial uses, including the aquatic eco-system; monitoring water use and diversions in the Mekong Basin; and information exchange and monitoring.

The Water Utilization Project was designed to help the MRC implement the first goal of its strategic plan through a multi-pronged approach. The project logic included support for data gathering, basin modeling, and the development of a knowledge base to improve countries’ understanding of the interaction between the physical and biological features

of the Mekong River, in order to facilitate enhanced cooperation and agreement around a set of water use and quality rules. The project also supplied technical assistance to facilitate discussions, negotiations and drafting of the water utilization rules by the four member countries. Agreement on these rules, and an associated set of technical procedures, was expected to lead to improved and coordinated sustainable management of the Mekong River and the Mekong Basin systems.

Results. The project partially achieved its objective of assisting the MRC to establish mechanisms, but by and large they are not yet being used to promote and improve coordinated and sustainable water management in the Basin. The project also supported policy and institutional reforms that improved the management effectiveness of the Mekong River Commission and facilitated some engagement with non-MRC members, China and Myanmar.

However, consensus was not reached on key technical guidelines, on minimum flow and quality levels, that are needed to achieve the project objective of ensuring coordinated and sustainable water management in the Mekong Basin. The premise built into the Mekong Agreement is that Parties would be able to define clear-cut criteria on water flows and quality and establish basin standards; and that, with those consensus rules in hand, they could assess the compliance of any proposed development plan. But no one party has wanted to pre-commit to criteria that would result in automatic approval or rejection of a development proposal. Rather, parties to the Agreement have wanted to run the model supported by the project the other way: by looking at specific development proposals and then using the outputs supported by the model to decide whether or not to go forward with the proposal.

Ratings. The Outcome of the project is rated **Moderately Unsatisfactory**, based on the assessment of the relevance of the objectives and design, efficacy, and efficiency. Although the objective of the project was substantially relevant, the relevance of design was modest since it was based on the unrealistic premise that a fully scientific approach could replace case-by-case negotiations. Additionally, the project design did not pay adequate attention to national level adoption and implementation of project outputs, and did not put in place sufficient mechanisms to extend knowledge generated by the modeling to decision and policy makers outside of the National Mekong Committees. Project efficiency, hampered by a lack of donor coordination and poor sequencing, was also modest. While internal risks have been addressed with regard to ownership and cooperation within the MRC, significant external risks exist with regard to hydropower developments both upstream and along the tributaries.

Bank Performance is rated Moderately Unsatisfactory. While the project was well-aligned with the MRC's first Strategic Plan, *quality at entry* was undermined by the way the project inputs were structured and used. In the initial part of the project, these inputs could have been better used to design a facilitation framework for country-level decision-makers; later to facilitate better understanding of the pros and cons of international obligations of members. Interviews conducted for this review suggested that it may have been more effective to have first supported workshops at the country through informal meetings in order to increase awareness about basin dynamics before proceeding to support international negotiations. Bank *supervision* was strengthened through a decision

to decentralize task management towards the end of the project – a move that shifted more support towards capacity building and training at the country level – and that began preparations for follow-on work with other donors that would address the gaps in country level implementation that were identified under the project.

Borrower Performance is rated Moderately Satisfactory. All four countries cooperated with the MRC in implementing the project: the countries assigned qualified staff to establish a riparian team at the MRC and established a national team within their respective NMCs. The Mekong River Commission showed strong commitment to the project objectives and has recently begun to develop an M&E framework to measure achievement of organizational goals. Human resource capacity of the MRC has been hampered by staff rotation rules however and more could have been done by the MRC to disseminate the results of the project both nationally and among civil society across the riparian member countries.

Lessons

- **The development of a Decision Support Framework to assist Mekong countries make more informed decisions about water resource management has demonstrated the opportunities and limits of bringing scientific and technical innovation to bear in an environment fraught with political economy constraints.** The premise that scientifically determined acceptable levels of water flow and quality and related modeling could replace case-by-case, negotiated water resource management decisions proved unrealistic. Rather, the models have been used to determine the winners and losers of proposed basin development projects in the context of negotiations that have focused on country-specific, rather than basin-wide interests.
- **Human Resource development at the national level is critical for the effective implementation of international and regional water resource agreements.** Participating nations require strong water expertise. Donor programs that seek to support effective implementation of water resource agreements at the international and regional level should consider how to support skills enhancement and training of water engineers, hydrological experts, water resource planners, and social and environmental specialists correspondingly at the national level.

Caroline Heider
Director-General
Evaluation

1. Background

1.1 The Mekong River stretches for 4,180 km from its source in the highlands of Tibet to the South China Sea, Figure 1. The river flows south from China's Yunnan province alongside the Myanmar-Laos and the Thai-Laos borders, and then descends onto the Cambodian flood plain, where it is regulated by the storage of the Tonlé Sap, a large lake that contracts and expands seasonally from 2,700 km² to 16,000 km² in response to flooding from the head reaches of the river. As a consequence, the lake supports one of the most productive natural fisheries in the world and provides 40-60 percent of the protein intake of the Lower Mekong Basin population (White 2002). Below Cambodia, the river splits into several distributaries that form the 39,000 km² Mekong Delta. The proportion of the total annual average flow in the Mekong River by country varies considerably. Three of the six countries contribute 71 percent of the flow: Laos contributes 35 percent, Cambodia 18 percent and Thailand 18 percent. Vietnam contributes 11 percent, and upstream, China contributes 16 percent and Myanmar only 2 percent.

1.2 Attempts to coordinate the sustainable development of the lower Mekong Basin began in 1957 with the establishment of the Committee for Coordination of Investigations of the Lower Mekong Basin (the Mekong Committee). At that time, the Mekong was one of the only remaining unexploited large rivers in the world, besides the Amazon. Early intergovernmental cooperation in the lower Mekong Basin was limited to hydro-meteorological investigations and pre-investment studies of tributary development projects and a cascade of large international reservoirs along the main river. An Indicative Basin Plan, drawn up in 1970 by the Mekong Committee, presented a menu of hydropower and irrigation projects to international donors, of which only a handful were funded due to the political insecurity that characterized the region during that decade. This piecemeal development—representing the project-led thinking that dominated intergovernmental dialogue and donor relations at the time - would continue to characterize decision-making.

1.3 Cooperation in the Lower Mekong Basin eroded with the end of the Vietnam War and the rise of the Khmer Rouge in Cambodia in the 1970s, resulting in a restructuring of the Mekong Committee. As Cambodia slipped into the role of a “non-participating but active” member of the riparian arrangement, an Interim Mekong Committee was formed by the three remaining Lower Mekong basin countries (Thailand, Vietnam, and Laos) that would last from 1978–1995. Following the Cambodian Peace Agreement in 1992, Cambodia requested reactivation to the Committee.

1.4 In 1995, the original members of the Mekong Committee (Cambodia, Laos, Thailand, and Vietnam) signed the Agreement on Cooperation for the Sustainable Development of the Mekong River Basin. The Agreement established the Mekong River Commission (MRC) and includes provisions for the Commission to formulate "Rules" for Water Utilization and procedures for the notification and consultation of proposed water uses; maintenance of flows on the mainstream of the Mekong River, in particular with regard to dry season flows based upon an analysis of the natural flow regime; water quality criteria, rules, and measures for the protection of beneficial uses, including the

aquatic eco-system; monitoring water use and diversions in the Mekong Basin; and information exchange and monitoring.

Figure 1: The Mekong River Basin



Source: World Bank 2012.

1.5 With assistance from the United Nations Development Program, the Mekong River Commission prepared its first Strategic plan (1999-2003) that identified five medium-term goals: (1) establish the "Rules"; (2) formulate a Basin Development Plan; (3) establish MRC environmental management policies and guidelines; (4) complete and evaluate on-going programs and projects; and (5) improve the capacity of the Commission. Designed as a regional technical assistance project, the \$11 million Water Utilization Project, financed by the Global Environment Facility (GEF) and executed by the World Bank, supported the implementation of the first medium-term goal: establishment of the Rules.

2. The Objectives, Design, and their Relevance

Relevance of Objectives

2.1 The Project's development objectives as stated in the Project Appraisal Document were to “assist the MRC to establish mechanisms to promote and improve coordinated and sustainable water management in the Basin, including reasonable and equitable water utilization by the countries of the Basin and protection of the environment, aquatic life and the ecological balance of the Basin.”¹

2.2 The project development objectives were and remain substantially relevant. Mekong River basin planning, historically, has proceeded without analyses that integrate existing ecosystem and human livelihood vulnerabilities with projections of regional natural resources and climate change impacts. Moreover, reliable data on lower Mekong basin natural resources have been difficult to obtain because they have not been collected and government transparency has and continues to be inadequate (Grimbine and Xu 2011). The project objective was substantially relevant in so far as it sought to support countries to overcome this dearth of credible data and culture of mistrust to foster sustainable and equitable water utilization in the Mekong Basin. The project objective was and remains consistent with the GEF's International Waters Program that emphasizes cooperative planning and use of globally significant natural resources. At the time of project appraisal, the GEF had selected the South China Sea region as one of its priority regions within its International Waters portfolio.

2.3 The project objectives are also in line with the Country Assistance Strategies (CAS) in Cambodia and Lao PDR during the project period, but was less relevant to Vietnam's Country Partnership Strategy (CPS). Cambodia's CAS (2005-2008) prioritized wise management of water resources and particularly the Mekong watershed, noting that it is critical for security and poverty reduction in Cambodia. It points to Cambodia's vulnerability as a downstream country to upstream developments and the high priority the government places on improving its administrative capacities for water resource management and its bargaining position in the Commission. The Lao PDR CAS (2005-2008) sought Bank support for improved water management in the Mekong basin by

1. The objective of the GEF grant agreement is identical, except that it omits the part at the beginning about “establishing “mechanisms.”.

developing the country’s administrative capacities for water resource management, citing the technical assistance provided by the Water Utilization project as a key contribution to this effort. The Vietnam CPS (2007-2011) places very little emphasis on the project objectives, although integrated river basin management is featured in the strategy’s Natural Resource and Environmental Management Pillar.

Box 1: Objectives and Components of the Water Utilization Project (TF-23406)

Project Development Objective	Project Components
<p>“Assist the MRC to establish mechanisms to promote and improve coordinated and sustainable water management in the Basin, including reasonable and equitable water utilization by the countries of the Basin and protection of the environment, aquatic life and the ecological balance of the Basin.” (PAD p. 2)</p>	<p>A. Basin Modeling and Knowledge Base. (Appraisal: US\$9.1 m; Actual: US\$11.41 m). Designed to support the development of the necessary analytical tools to improve the understanding of the interaction between the physical and biological features of the Mekong River, it had three sub-components: (i) Information and Knowledge Base Development, aimed at collecting preliminary data and assessing needs for developing a numeric model for basin hydrology; (ii) Basin Modeling Package aimed at developing a transboundary hydrological model; and (iii) Environmental, Economic, and Social Transboundary Analysis to identify environmental issues, priorities, explore best practices in river basin management.</p> <p>B. Rules for Water Utilization. (Appraisal: US\$1.2 m; Actual: US\$1.53 m) The component aimed to provide the Mekong River Commission (MRC) with technical assistance to facilitate discussions, negotiations and drafting of the water utilization rules by the four member countries. The component, focused on the development of the “rules” essential for the water utilization, had two subcomponents: (i) Data and information exchange protocols (data and information exchange; water use monitoring; prior notification, consultation and agreement); and (ii) Physical rules (i.e., maintenance flows on the mainstream and water quality).</p> <p>C. Institutional Strengthening. (Appraisal: US\$4.7 m; Actual: US\$5.48 m). This was designed to support project management as well as institutional strengthening for the MRC and the four member countries and had four subcomponents: (i) Project and Program Management; and (ii) Technical Training and Capacity Building for MRC and the concerned officials of the four member countries; (iii) Communication, Participation and Public Awareness to disseminate the knowledge obtained by the MRC and promote the exchange of ideas; and (iv) Participation in GEF Regional and Global Programs to exchange experiences with other GEF supported international water programs within and outside the region..</p>

Relevance of Design

2.4 The project included three components, addressing the Commission’s modeling and knowledge base, the rules for water utilization, and support for institutional strengthening (Box 1).

2.5 The relevance of project design to the objectives is rated **Modest**. The project design lacked attention to national level adoption and implementation of the project outputs and sufficient mechanisms were not put in place to extend knowledge generated by the modeling to decision-makers outside of the National Mekong Committees. These decision-makers, such as those located in the national Ministries of Energy and Power, are engaged in investment and planning decisions that are taking place outside of the governance and management structures of the MRC and the National Ministries represented in the National Mekong Committees. The project also did not plan for the financing of activities associated with the dissemination of the Rules at the country level. The project was extended in part to conduct this activity, and reallocated some funds to each National Mekong Committee to carry out dissemination.

2.6 Funds were split between facilitating the negotiation of the water use and quality rules and building a basin planning model, but only a small amount of finance and priority was placed in supporting the work of the Environment Division in the Mekong River Commission Secretariat.

2.7 Beyond these omissions, the project's weak results framework did not link the technical assistance provided by this project and its outputs (modeling and the agreement on a set of water use rules) to the ultimate objective of improving water resource management for the economic and social development of the Mekong Basin.

3. Monitoring and Evaluation

3.1 *M&E Design.* The project adopted simple, time-bound output-oriented indicators to measure its progress against its aim of supporting the development of the rules and procedures to implement the Mekong Agreement. Monitoring and evaluation (M&E) design did not include measures of project outcome. The key performance indicators against which the achievements were to be measured were:

- The development of a functional, integrated basin modeling package by 2003;
- Development, installation and testing of a functional and integrated knowledge base and information systems on water and related resources, with a communication system linking the NMCs with the MRC Secretariat by 2003;
- Adoption of Rules for information exchange, water use monitoring, and preliminary notification/consultation procedures by 2004;
- Adoption of provisional in-stream flow "rules" (including minimum flows), notification/consultation/agreement on protocols by July 31, 2005;
- Adoption of provisional water quality rules by 2006.

3.2 The project's M&E system was missing intermediate outcome indicators, such as implementation of the Rules and adoption of the models *at the national level* so as to enable qualitative measurement to assess progress towards the stated basin level project objectives or indicators of the quality and reliability of data in the information system. In consequence there was no measure on how cooperation on essential data and information built trust among Parties. The institutional strengthening goals of the project were not reflected in the key performance indicators. The project implemented some activities that helped to build national capacity (such as modeling skills), but it lacked indicators to measure them, and hence they were not captured strongly enough in the project's overall results reporting.

3.3 *M&E Implementation.* The MRC did not have an M&E system in place during the project period and as such, was not able to monitor and evaluate the contributions of this GEF financed project against its overarching organizational goals.

3.4 *M&E Utilization.* Information stemming from the monitoring of the project's implementation progress was not used as part of the project's communication, participation and public awareness strategy. M&E utilization did not include an open dissemination of the knowledge obtained by the MRC, including peer review and

external validation of the Decision Support Framework (DSF, discussed below) and associated data. However, except for a few stakeholder workshops that were designed to disseminate information about rules adoption and the technical guidelines, information was largely buried within the MRC Secretariat. Knowledge gained by the NMCs and the working groups could have also been exchanged, as planned, through participation in GEF Regional and Global Programs to exchange experiences with other GEF-supported international water programs within and outside the region.

3.5 The quality of monitoring and evaluation, based on M&E design, implementation, and use of the data, is rated **modest**.

4. Implementation

4.1 The project was originally implemented by the Office of the Chief Executive Officer of the MRC in coordination with multi-national working groups organized through the National Mekong Committees. The working groups played a critical role in discussing and negotiating various technical matters, drafting the various procedures, and making recommendations to senior management of the respective governments and to the MRC. However, due to an internal reorganization during the project period, the responsibility for implementing the project was transferred from the Chief Executive Officer to the Planning Division of the MRCS. The purpose was to integrate the project under this line division, and achieve better coordination and increase synergy with the UNDP-supported Basin Development Program, which aimed at developing a series of scenarios regarding infrastructure development and water utilization.

4.2 Work on the Basin Development Program (BDP) got underway shortly after the signing of the Mekong Agreement. The BDP was viewed as an “umbrella” under which all other programs, projects and activities should operate. However due to a slow start, the BPD fell behind schedule. While work proceeded steadily on the development, negotiation, and adoption of the rules and procedures, basin modeling and associated simulations that would be required to inform these negotiations lagged behind.

4.3 *Timing:* The project was approved on February 3, 2000, became effective on March 30, 2000, and closed on June 30, 2008, a year later than planned. The project implementation period was extended by one year. The extension was considered to be necessary to: (a) develop technical guidelines to implement the Rules regarding water quality and minimum flow, (b) increase capacity of the riparian countries to utilize hydrological models for infrastructure development, and (c) disseminate the outcome of the Project to direct stakeholders in the basin, particularly local governments and communities.

4.4 *Fiduciary Aspects:* Overall financial management and disbursement functioned satisfactorily. During implementation, there were no significant procurement or financial management issues. The fiduciary part of the project was managed by the Financial and Accounting Section of the MRCS, which is independent from the project technical team and has qualified staff.

4.5 *Operational Policies/Safeguards*: This technical assistance grant did not include any physical investments. The project was in compliance with relevant Bank policies, i.e. OP/BP 10.02 on Financial Management, Procurement, and OP/BP7 .50 on International Waters.

5. Achievement of the Objectives

5.1 The efficacy of the project is evaluated against its objective of achieving improved coordination and sustainability of water resource management in the Mekong Basin, including reasonable and equitable water utilization by the countries in the Basin and protection of the environment, aquatic life, and the ecological balance of the Basin. Based on the evidence below, the objective was *modestly* achieved. The project partially achieved its objective of assisting the MRC to establish mechanisms, but by and large they are not yet being used to promote and improve coordinated and sustainable water management in the Basin. It supported the development and negotiation of a set of Rules to help facilitate the implementation of the Mekong Agreement, however consensus was not reached on key technical guidelines, or minimum flow and quality levels, that are needed to achieve the project objective of ensuring coordinated and sustainable water management in the Mekong Basin

5.2 The extent to which the project improved the coordination and sustainability of water resource management depends, first, on the extent to which the modeling and knowledge base, the rules for water utilization, and the institution-building measures – the project’s outputs – were delivered and, second, the extent to which they were being put to use to improve equitable use of water resources and protect the environment.

Outputs

5.3 The project facilitated the development and negotiation of a set of Rules to help facilitate the implementation of the Mekong Agreement – it provided analytical tools, technical capacity support to the MRC and at the country level, and international legal expertise. The specific progress achieved by the project in achieving regional consensus on the Rules that govern the Mekong Agreement are assessed below:

5.4 The *Procedures for Notification, Prior Consultation, and Agreement* calls on countries to jointly review any development project proposed for the mainstream of the Mekong River to reach consensus on whether or not it should proceed. The Rule was approved in 2003, however details concerning its application are ambiguous. At the time of project closure, the Bank supervision team expressed concern about ambiguity in the interpretation of some terminologies that affects their application, such as the definition of a “small” and “domestic” project, for which the procedure does not apply, or the definition of a “significant tributary” for which it does apply. The Bank also expressed concern about the lack of guidance as to whether notification, prior consultation, and agreement should take place at the feasibility or identification stage.

5.5 Nevertheless, these ambiguities have not prevented the procedure from being implemented as evidenced by the thirty-five notifications and one prior consultation that

has exercised thus far. Interim outcomes related to inter-governmental cooperation are discussed in the section below.

5.6 ***The Procedures for Water Use Monitoring. A Protocol for Water Use*** Monitoring was approved in 2003, a year earlier than planned, but guidelines and implementation methods are still being developed. The implementation of this procedure has been hampered by uneven capacity to perform data collection across the countries.

5.7 The ***Procedure for Water Quality*** was approved in January 2011, the last procedure supported by the project to be approved. Adoption was delayed by five years due to the political situation in Thailand. The MRC has made progress on developing the Technical Guidelines for this Procedure; the Technical Guidelines for Water Quality were under development at the time that this review was conducted. Implementation of these guidelines will require further institutional strengthening in both Lao PDR and Cambodia. The development and adoption of this procedure involved a more lengthy technical and political process than envisioned since the regional agreement had to be compatible with national water quality standards in each riparian country.

5.8 ***Procedures for Maintenance of Flows on the Mainstream.*** Under the 1995 Mekong Agreement, the countries agreed to establish rules for water utilization that prevent an unacceptable reduction in dry season flows, unacceptable increase in wet season flood flow, and maintenance of mainstream flows at Kratie (Cambodia) adequate to support the Tonle Sap reversal and acceptable inundation of the Tonle Sap Great Lake. The provisional in-stream flow rules were adopted in 2006, but no agreement was reached on the definition of normal, minimum or medium flow thresholds; an appropriate approach for analyzing peak floods and droughts; or the application of the real-time daily data (on flow and/or level) for monitoring purposes. The descriptions of the existing flow regimes of the Mekong are based on historical data.

5.9 **A Decision Support Framework (DSF) model** was developed to inform the negotiation of the Rules and Technical guidelines that govern the implementation of the Mekong Agreement. The DSF is comprised of a Knowledge Base, a suite of Simulation Models, and a set of Impact Analysis Tools, including environmental and transboundary analysis (Box 2).

5.10 All MRC member countries and the MRC have formally adopted the Decision Support Framework package. Fifteen licensed copies of the DSF have been issued; three to the MRC Secretariat and three to each member country. The model describes the hydrology of the entire Lower Mekong Basin, including the Tonle Sap and the Mekong Delta. The project supported this mechanism as a means to build trust between parties to more effectively inform negotiations around the Rules and Technical guidelines – with the belief that if the data being shared and modeled were reliable, comprehensive, credible, and easy to use and extrapolate - parties to the Agreement would better be able to reach consensus on key water resource management issues. However, the data it contains lack many of these attributes that would be required to build this trust necessary for collective action.

5.11 The project supported the MRC with the development of an *Integrated Basin Flow Management Tool* that sought to objectively assess the flows that should be maintained on the mainstream to protect economic, social and environmental interests of affected communities.

5.12 *Capacity Development.* The project supported an internship program which engaged junior water resources engineers nominated by the member countries in developing the hydrological, simulation and hydro-dynamic models. These engineers have since returned to the National Mekong Committee (NMCs) of their respective governments. Also, during the project extension period, the Project focused on increasing the technical capacity of the NMCs by developing hydrological, simulation and hydro-dynamic models at the national level. The project implemented a case study approach where technical experts of the MRC and the government staff jointly developed detailed and focused hydrological, simulation and hydro-dynamic models for high priority areas of development (for example, hydropower, flood mitigation, irrigation).

Box 2: The Development of the Decision Support Framework

The Decision Support Framework (DSF) comprises three main elements accessed through a single user-interface: a Knowledge Base; a suite of Simulation Models; and Impact Analysis Tools.

The Knowledge Base contains core data, pre-defined models (new model configurations can be set up by specialist modelers), selected outputs from the model simulations and the results of analyses conducted with the Impact Analysis tools. The core data have been drawn principally from the MRC Secretariat's databases, with some directly from individual country sources.

The suite of Simulation Models enables the prediction of impacts of changes in conditions within the Mekong River Basin on the river system. Three basic types of model have been developed:

- (1) **Hydrological models**, based on the SWAT software of the US Department of Agriculture, to simulate catchment runoff based on estimates of daily rainfall and the topography, soils and land cover of each sub-basin.
- (2) **Basin simulation models**, using the hydrological models as inputs, based on the IQQM software originally developed for the Murray-Darling Basin in Australia. The models route catchment flows through the river system, making allowance for control structures, such as dams and irrigation abstractions. Information on daily discharges is generated throughout the system and particularly at the primary outfalls of Kratie on the mainstream and the Great Lake in the Tonle Sap basin. The IQQM software also draws from data in the Knowledge Base to estimate irrigation demands throughout the Lower Mekong Basin.
- (3) A **hydrodynamic model**, based on ISIS software, to simulate the river system downstream of Kratie (Cambodia), including the Tonle Sap and the East Vaico in Vietnam, where wet season flooding extends beyond the Lower Mekong Basin boundary. The hydrodynamic model represents the complex interactions caused by tidal influences, flow reversal in the Tonle Sap River and over-bank flow in the flood season with the varying inflows from upstream. Typically it generates hourly data for water levels and discharges throughout the main channels and distributaries in the delta. A salinity intrusion model has also been set up with the ISIS software drawing on the results of the hydrodynamic model. ISIS also has capability to simulate other water quality parameters, including sedimentation, but at present there are insufficient data to warrant setting up these models.

Spatial Impact Analysis Tools enable the prediction of environmental and socio-economic impacts in response to changes in condition of the river system. Information derived from the mapping tools can be overlain on a range of appropriately formatted spatial data using ArcView (provided with the DSF) to make direct assessments of impacted population, land areas or sites of specific interest.

Source: www.mrcmekong.org

Intermediate outcomes: use of the rules, data, and tools for more equitable water utilization and acceptable water quality.

Implementation of the Mekong Agreement Rules

5.13 IEG interviews with members of the National Mekong Committees affirmed that the process of drafting and negotiating the Rules helped to establish an initial level of working relations among line ministries and the national committees, as well as a level of trust amongst the States. However, consensus was not reached on key technical guidelines that were needed to implement the Rules and achieve the project objective. More progress was made during the project period in reaching agreement on the procedural guidelines - the Procedures for Data and Information Exchange and Sharing, Water Use Monitoring, and Notification, Prior Consultation and Agreement -- than on physical rules on the Maintenance of Flows on the Mainstream, the guidelines for which are still being developed, or on Water Quality.

5.14 The *Procedure on Notification, Prior Consultation, and Agreement* recently has been tested with the commencement of the construction of the 1,260 megawatt Xayaburi dam in Lao PDR, estimated to cost US\$3.5 billion. Prior Consultation among the member states between November 2010-April 2011 resulted in a request by some member countries to postpone the building of the dam. Cambodia claimed that the prior-consultation was not finished and that the additional study would be required and the result is further consulted to fill the knowledge gap on hydrology, sediment transport, fisheries, trans-boundary and cumulative impact. Vietnam cited the concern that its fisheries could experience a decline by 200,000-400,000 tons per year due to negative effects of the dam. As a result, Vietnam endorsed a 10-year moratorium on dam building in the lower Mekong Basin – a key recommendation of a Strategic Environmental Assessment commissioned by the MRC during the project period.

5.15 A critical issue concerning information sharing emerged during this process concerning the quality and distribution of the environmental impact assessment prepared for the Xiaburi dam proposal. The Procedure's guidelines only require a summary of the Environmental Impact Assessment to be made available to members. There is no requirement in the guidelines that the assessment be made public. A Joint Development Partner Statement that included the World Bank (dated January 26, 2011) called for full public disclosure of all technical reviews and impact assessments submitted to the MRC. Meanwhile, the technical features and potential cross-border and cumulative impacts of China's dams have not been made available.

Application of the Decision Support Framework

5.16 The premise built into the Mekong Agreement is that Parties will be able to define clear-cut criteria on water flows and quality and establish basin standards. With those consensus rules in hand, they could then assess the compliance of any proposed development plan. But this approach has proved to be too abstract to negotiate. No one party has wanted to pre-commit to these criteria that would result in automatic approval or rejection of a development proposal. Rather, parties to the Agreement wanted to run the model supported by the project the other way: by looking at specific development

proposals and then using a variety of model outputs to decide whether or not they like the proposal.

5.17 The Decision Support Framework was conceived as a basis for negotiation and for the formulation of the rules and corresponding technical agreements. Its users therefore have to be confident that it accurately represents the hydrological behavior of the Basin. Data updating is a critical issue. The effective implementation of the procedures that have now been put in place requires this, but country-level data are not always being made available in a timely fashion. The DSF should adequately and comprehensively represent the Basin characteristics and behaviors of interest. It models water flow—the major focus of the MRC - but it does not include a model for capturing levels of sedimentation, which is a key process affecting agricultural and fisheries productivity.² Sediment transport is critical for the productivity of the Tonle Sap fishery, the seasonally flooded rice fields, and marine fisheries offshore from the Mekong's mouth. Uncertainty about how development plans will affect sediment flows emerged as a major concern in the Strategic Environmental Assessment. The DSF also lacks the ability to assess the impact of alternative development plans on fish migration and thus on the viability of riverine fish stocks and the survival, for example, of the critically endangered giant Mekong catfish.³ These ecosystem issues have emerged as key points of uncertainty and contention.

5.18 The ability to apply the model across all Mekong member countries is uneven. While each riparian country has formally adopted the DSF package, Lao PDR and Cambodia require a greater degree of support from the MRC Secretariat modeling team than Thailand and Vietnam.⁴ The DSF was originally conceived as three different but integrated platforms. Yet the integration of these models proved costly and the MRC thus opted for the use of multiple platforms. While less costly, this suite of three different models is not particularly easy to use. A separate model for the Delta is also needed because of the complexity of that system. Additionally, Vietnam uses its own modeling for the Vietnam Delta.⁵ Vietnam's Southern Institute of Water Resource Planning, responsible for planning water resources management in the Vietnam Delta, also undertakes detailed Delta modeling.

² As noted by the Bank team, while recognizing that sediment is an important factor that affects livelihoods and river morphology, sediment is perhaps one of the most difficult elements to be modeled. Good sediment data are not uniformly available and coverage is patchy. Some initiatives to address sediment modelling are on-going by a group of researchers at US universities in collaboration with the MRC; in the meantime the World Bank is supporting Vietnam in collecting sediment information and to prototype a model under the follow-on World Bank project, the *Mekong Integrated Water Resource Management Project*.

3. The giant Mekong catfish (*Pangasianodon gigas*), the world's largest catfish, is on the IUCN Red List of Critically Endangered Species. The population has fallen by 80 percent over the last 14 years.

4. It should be noted that Lao PDR, which did not have official hydrological models at project completion, has since adopted the DSF platform and is using it for its own modeling and capacity building with the support of the follow-on World Bank project, the Mekong Integrated Water Resource Management Project.

5. Vietnam utilizes the DSF for its national assessments – they rely on the SWAT and IQQM for their upstream assessments – however for the Delta, it uses the VRSAP instead of the ISIS modeling. The VRSAP provides a much more detailed representation of the Delta.

5.19 The quality and accuracy of the Decision Support Framework have not been independently reviewed, undermining the credibility of its results and the trust of all parties in the trans-boundary context. For the model to be credible, its structures should be clear and auditable and its assumptions and limitations should be understood. Parameters and input data should be accessible so that the interested public can obtain and use the model. Two of the models are open source and well documented. ISIS software - used to develop the hydrodynamic model - is expensive and proprietary, which inhibits the widespread distribution and validation of the Basin modeling package. The Decision Support Framework requires continuing validation and scientific review. It has never been publicly peer reviewed despite repeated calls for an independent peer review posed by networks and dialogue groups, such as M-Power, and donors, such as Danida.⁶ Finally, the DSF does not appear to give graphic, map-style output that is easily interpreted by policymakers and negotiators.

5.20 *Application of the Integrated Basin Flow Management (IBFM) Tool.* The transboundary flow assessment was carried out using the DSF and has contributed substantially to a better and more objective understanding of the hydrological aspects of the Mekong. However the use of this approach has been constrained due to the difficulties to finalize agreed technical guidelines to implement the procedures for water flow and quality.

Engaging the Dialogue Partners

5.21 The project aimed to encourage the participation of the upper riparian countries, China and Myanmar, in MRC political dialogue and in project-related technical activities, including basin modeling. China and Myanmar are dialogue partners with the MRC – they meet formally with the member countries once per year in a Dialogue Meeting in conjunction with the MRC Joint Committee Meeting but they are not formal members. Overall cooperation, including data and information sharing between China and the MRC member states, has been partially enhanced under project support for the MRC.⁷

5.22 China has provided upstream hydro-meteorological data during the wet season since 2002 that helps to inform flood forecasting. The MRC modeling team visited China for discussions on model comparisons with Chinese counterparts, and China has provided information on the planning and design of its hydropower projects to MRC's BDP program and the Initiative on Sustainable Hydropower. China also partly sponsored a delegation of MRC Member Countries and MRC Secretariat officials in June 2010 to visit the recently built Xiaowan – the second largest hydroelectric power station in China after the Three Gorges Dam – and the Jing Hong dams on the Lancang-Mekong River, offering further information on its hydropower projects.

6. The Mekong Program on Water, Environment and Resilience (M-POWER) is a network of collaborating organizations and individuals working to democratize water governance in the Mekong Region. See www.mpowernetwork.org.

7. This assessment did not find any attributable evidence of enhanced cooperation with Myanmar. As noted by the Government of Cambodia, there is an on-going agreement on the sharing of hydrological data during flood season between China and the MRC.

5.23 However, China's construction of the Xiaowan reservoir has occurred outside of the framework of the Mekong Agreement. Tensions that have ensued highlight the urgent need to engage China as a full MRC member and full steward of this vital water resource, especially as its hydropower developments begin to come fully on stream. Mistrust during a period of extremely low flow conditions in the Lancang-Mekong River in 2010, for example, prompted China to share hydrological data in what has been described by the MRC Secretariat as a special measure of cooperation. But the Xiaowan reservoir, with a storage capacity of roughly 15 billion m³, has just begun and may take up to ten years to fill.

5.24 Chinese reservoirs could regulate roughly 25 percent of the Chinese portion of the Mekong River (PAD p. 16). They could be good for water regulation in the basin, if released properly during droughts and stored during floods. Their storage capacity could have the potential of increasing dry season flows near Vientiane by 50 percent and into the Mekong Delta by 20 percent. They could also store part of the flow during floods. This potentially positive benefit could be magnified under current climate change projections. But even under normal operating conditions, there are still many unknowns. How will the change in water quality and flow affect fish migration patterns? How much nutrient rich sediment will be trapped behind the barrages instead of flowing downstream to enrich the fields of the Mekong Delta rice farmers?

6. Efficiency

6.1 The efficiency of the project is modest. The GEF-financed project used an incremental cost analysis in lieu of an economic or financial rate of return calculation. The incremental cost assessment is based on the assumption that the GEF grant would help the MRC develop and use water utilization rules and analytical tools necessary for sustainable management and development of water resources in the Basin in order to garner substantial specific global environmental benefits. From the point of view of achieving global environmental benefits, this project was only modestly efficient since very little progress was made on the implementation of the rules and application of the tools to achieve this aim.

6.2 The efficiency of the Water Utilization Project was constrained by a lack of planned donor coordination and sequencing. The project attracted a significant level of parallel financing. Parallel financing totaled US\$5.6 million, including US\$4.01 million from Finland, US\$1.0 million from Japan and US\$0.59 million from France. While the leveraged finance is significant, each contribution supported a separate working arrangement within the MRC. The sequencing of activities, although not entirely due to project planning, also caused inefficiencies in project implementation. The implementation of the GEF project, with its focus on facilitating MRC member agreement around a set of "Rules" and "Procedures," outpaced other areas of work at the MRC that were recognized at project design as being critical to achieving MRC's long-term goals.

7. Ratings

Outcome

7.1 The overall outcome of the Water Utilization Project is rated **Moderately Unsatisfactory**. While the project's objectives were and remain substantially relevant, project design was only modestly relevant. The project partially achieved its objective of assisting the MRC to establish mechanisms, but by and large they are not yet being used to promote and improve coordinated and sustainable water management in the Basin. It supported the development and negotiation of a set of Rules to help facilitate the implementation of the Mekong Agreement. However, consensus was not reached on key technical guidelines, or minimum flow and quality levels, that are needed to achieve the project objective of ensuring coordinated and sustainable water management in the Mekong Basin. Project efficiency, hampered by a lack of donor coordination and poor sequencing, was also modest.

Risk to Development Outcome

7.2 There are significant risks associated with the development outcomes supported by the project. Foremost among these is a risk of non-cooperation, or the "business as usual" scenario whereby unilateral or bilateral decisions are taken at the expense of the common regional good. Chapter 2 of the 1995 Mekong Agreement stipulates that the regional decision-making process is "neither a right to veto the use nor unilateral right to use water by any riparian country without taking into account other riparian's rights." States are obligated to negotiate in good faith – but the liberal interpretation of states' obligations under the agreement, due in large part to the failure to agree on clear and binding technical guidelines – has already surfaced as a cause for concern.

7.3 There are also risks associated with sustaining and enhancing the capacity of the MRC technical teams over time due to a staff rule attached to the Mekong Agreement (Article 33) that imposes a limit on the number of years a staff member can be retained. Although the focus of the rule is meant to direct built capacity to the member countries, it has left critical gaps in the technical capacity of the Secretariat.

7.4 Risk to Development Outcome is rated *Significant*.

Bank Performance

7.5 **Quality at Entry: Moderately Unsatisfactory.** While the project was well-aligned with the MRC's first Strategic Plan, quality of entry was undermined by the way the project inputs were structured and used. In the initial part of the project these inputs could have been better used to design a facilitation framework for country-level decision-makers. Once in place, the framework could have been used to facilitate better understanding of the pros and cons of international obligations of members. Interviews conducted for this review suggested that it may have been more effective to have first supported workshops at the country level (with decision-makers, technicians, and members of civil society) through informal meetings in order to increase awareness about

basin dynamics before proceeding to support international negotiations.⁸ Project conception paid adequate attention to building capacity within the MRC Secretariat but not enough within the line ministries of the member countries.

7.6 **Bank Supervision: *Satisfactory*.** The Bank provided technical guidance in the development of hydrological models, monitored the progress of establishing water utilization rules and coordinated with donors in the provision of project funds. The Bank participated in donor consultation group meetings and key management meetings organized by the MRC, during which it provided policy advice. During the last two years (2007-2008), the Bank task management team had been decentralized to the field and focus shifted to finalizing the transitional arrangements, increasing capacity building at the country level, and developing the concept for a follow up operation in order to consolidate and further the results achieved under the project.

7.7 Overall Bank Performance is rated *Moderately Unsatisfactory*

Borrower Performance

7.8 **Government Performance** is rated *Moderately Satisfactory*. The project involved the four governments of the member countries as bodies constituting the MRC: Thailand, Cambodia, Lao PDR, and Vietnam. All four countries cooperated with the MRC in implementing the project: the countries assigned qualified staff to establish a riparian team at the Commission, established a national team within their respective National Mekong Committees, and provided adequate human and financial resources. However, while all of the Rules have now been adopted, the factor that has most constrained effective implementation of the project has been the intractability of positions concerning agreement on the technical guidelines.

7.9 **Implementing Agency Performance** is rated *Moderately Satisfactory*. The Mekong River Commission showed strong commitment to the project objectives. Leadership was demonstrated by the MRC when it recently commissioned a Strategic Environmental Assessment to shed more light on transboundary environmental issues that may be affected by hydropower development planning in the Basin. The MRC has also recently begun to develop an M&E framework to measure organizational goals. Human resource capacity of the MRC was modest and, because of staff rotation rules, trained staff often had to leave the project after a few years. Though largely outside the control of the project, this did affect capacity. More could have been done by the MRC to disseminate the results of the project both nationally and among civil society across the riparian member countries.

7.10 Overall Borrower Performance is rated *Moderately Satisfactory*.

8. As also discussed in the World Bank's Final Supervision Mission June 16-18th, 2008.

8. Lessons

- **The development of a Decision Support Framework to assist Mekong countries make more informed decisions about water resource management has demonstrated the opportunities and limits of bringing scientific and technical innovation to bear in an environment fraught with political economy constraints.**
The premise that water resource management decisions could be based on scientifically determined acceptable levels of water flow and quality and that subsequent modeling could be used to evaluate Basin proposals in line with a minimum set of flow and quality criteria proved to be too constraining. Rather, the models have been used to determine the winners and losers of proposed basin development and subsequent negotiations have focused on individual, rather than collective interests.
- **Human Resource development at the national level is critical for the effective implementation of international and regional water resource agreements.**
Participating nations require strong water expertise. Donor programs that seek to support effective implementation of water resource agreements at the international and regional level should consider how to support skills enhancement and training of water engineers, hydrological experts, water resource planners, and social and environmental specialists correspondingly at the national level.

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Annex A. Basic Data Sheet

Mekong River Commission -Water Utilization Project– P045864

Key Project Data (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	16.3	18.43	114%
Loan amount	11.0	10.9	99%
Cofinancing (parallel)	2.8	5.6	114%
Cancellation	-	57.9	-
Borrower	2.5	1.83	73%

Cumulative Estimated and Actual Disbursements

	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>	<i>FY04</i>	<i>FY05</i>	<i>FY06</i>	<i>FY07</i>	<i>FY08</i>	<i>FY09</i>
Appraisal estimate (US\$M)	0.5	1.7	3.7	5.5	7.3	9.5	11	11	11	11
Actual (US\$M)	0.2	1.2	3.2	4.8	6.4	7.6	9.2	10.6	10.8	10.9
Actual as % of appraisal	52%	71%	86%	87%	88%	80%	84%	96%	98%	99%
Date of final disbursement: 07/02/2008										

Project Dates

	<i>Original/Planned</i>	<i>Actual</i>
Negotiations	08/23/1999	11/01/1999
Board approval	11/23/1999	02/03/2000
Signing	03/03/2000	02/29/2000
Effectiveness	03/30/2000	03/30/2000
Closing date	06/30/2007	06/30/2008

Staff Input (staff weeks)

<i>Stage of Project Cycle</i>	<i>Staff Time and Cost (Bank Budget Only)</i>	
	<i>No. of staff weeks</i>	<i>USD Thousand (including travel and consultant costs)</i>
Lending		
FY98	n.a.	122.74
FY99	n.a.	76.75
FY00	20.36	80.27
Total:	-	279.76
Supervision/ICR		
FY00	1.90	7.85
FY01	17.88	83.47
FY02	17.08	76.39
FY03	17.62	71.52
FY04	15.61	78.91
FY05	8.97	43.36
FY06	15.23	97.81
FY07	15.95	71.26
FY08	10.72	42.55
FY09	9.37	62.44
Total:	130.33	635.56

n.a. – Not available

Mission Data

<i>Name</i>	<i>Title</i>	<i>Unit</i>
Lending		
Toru Konishi	Senior Economist	EASIN
Cuong Hung Pham	Senior Water Resources Management Specialist	EASIN
Bun Vesana	Infrastructure Operations officer	EASTS
Khamlar Phonsavat	Climate Change Specialist	EASTS
Manida Unkulvasapaul	Consultant (Environmental Specialist)	EASTS
Vanna Nil	Social Development Specialist	EASTS
Marjory Ann Bromhead	Adviser	ARD
Sybounheuang Phanadanouvong	Social Development Specialist	EASTS
Edward Charles Anderson	Remote Sensing Specialist	EASIN
Viengkeo Phetnavongxay	Natural Resources Management Specialist	EASTS
Oithip Mongkolsawat	Senior Procurement Specialist	EAPPR
Kannathee Danaisawat	Senior Financial Management Specialist	EAPEM

<i>Name</i>	<i>Title</i>	<i>Unit</i>
Chinnakorn Chantra	Senior Procurement Specialist	EAPEM
Seida Hang	Financial Management Specialist	EAPFM
Ron Zweig	Consultant (Fisheries Management Specialist)	EASIN
Garry Thorncrafft	Consultant (Fisheries Migration Specialist)	EASIN
Manuel Cocco	Consultant (Project Analyst)	EASIN
Philippe Floch	Consultant (Water Resources Management Specialist)	EASIN
Phillippe Cacot	Consultant (Aquaculture Specialist)	FAO/CP
Thalavanh	Program Assistant	EACLF
Mara T. Branson	Consultant (Private Sector Development Specialist)	EASIN
Sandra Waltson	Program Assistant	EASIN
Supervision/ICR		
Guy J. Alaerts	Lead Water Resources Specialist	EASRE
Greg J. Browder	Sr. Water Resources Spec.	LCSUW
Toru Konishi	Senior Economist	EASRE
Chinnakorn Chantra	Procurement Specialist	EAPCO
Kannathee Danaisawat	Financial Management Specialist	EAPCO
Yoshiharu Kobayashi	Sr. Water Resources Specialist	MNSSD
Oithip Mongkolsawat	Senior Procurement Specialist	EAPCO
Douglas C. Olson	Lead Water Resource Specialist	LCSEN
Cuong Hung Pham	Senior Operations Officer	EASVS
Manida Unkulvasapaul	Sr. Environmental Specialist	EASRE

Annex B. Persons Consulted

Name	Position	Location
Mekong River Commission Secretariat		
Mr. Jeremy Bird	Chief Executive Officer	Vientiane, Lao PDR
Ms. Klomjit Chandrapanya	Chief of International Cooperation and Communication Section	Vientiane, Lao PDR
Mr. Vithet Srinetr	Officer-in-Charge of Environment Division and Basin Development Plan	Vientiane, Lao PDR
Vietnam		
Dr. Le Duc Trung	Secretary General	Vietnam National Mekong Committee
Hoang Viet Khang	Deputy Director	Ministry of Planning and Investment
Minister Mr. Cao Duc Phat	Minister	Ministry of Agriculture and Rural Development
Mr. Luong The Phiet	Director General	International Cooperation Department, Ministry of Agriculture and Rural Development
Mr. Nguyen Thai Lai	Vice Minister of Natural Resources and Environment; Chairman of Viet Nam National Mekong Committee; Member of the MRC Council for Viet Nam	Ministry of Natural Resources and Environment
Mme. Tran Thi Minh Ha	Director, International Cooperation Department	Ministry of Natural Resources and Environment
Cambodia		
His Excellency Sin-Niny	Permanent Vice -Chairman	Cambodia National Mekong Committee
H.E. Mr. Pich Dun	Secretary General Chairperson of the MRC Joint Committee for 2010/2011, Acting Member of the MRC Joint Committee for Cambodia	Cambodia National Mekong Committee
Dr Son Lam Hung	Program Coordinator for Flood Management and Mitigation Program	Mekong River Commission, Phnom Penh, Cambodia
H.E. Mr. Lim Kean Hor	Minister of Water Resources and Meteorology	Ministry of Water Resources and Meteorology
Lao PDR		
Mme. Monemany Nhoibouakong	Permanent Secretary, Water Resource and Environment Administration, Member of the MRC Joint Committee for Lao PDR	Lao National Mekong Committee Secretariat

Name	Position	Location
Mme. Thippakone Chanthavongsa	Director General, Department for External Finance	Ministry of Finance Lao PDR
Mr. Somchith Inthamith	Director General, Department for International Cooperation	Ministry of Planning and Investment Lao PDR
H.E. Sommad Pholsena	Minister of Public Works and Transport	Ministry of Public Works and Transport Lao PDR
H.E. Mme. Khempeng Phonlsena	Minister of Water Resources and Environment Agency	Ministry of Water Resources and Environment Agency Lao PDR
H.E. Sitaheng Rasphone	Minister of Agriculture and Forestry	Ministry of Agriculture and Forestry Lao PDR
Mr. Xaypaseuth Phomsoupha	Director General, Department of Energy Promotion and Development (EPD)	Ministry of Energy and Mines Lao PDR
H.E. Sommad Pholsena	Minister of Public Works and Transport	Ministry of Public Works and Transport Lao PDR
Dr Phouang Parisak Pravongviengkham	Director of the Planning Department	Ministry of Agriculture and Forestry Lao PDR
Thailand		
H.E. Mr Suwit Khunkitti	Minister of Natural Resources and Environment/Chairman of Thai National Mekong Committee/Member of the MRC Council for Thailand/Chairman of the MRC Council for 2009/2010	Ministry of Natural Resources and Environment Thailand
Mr. Chote Trachu	Permanent Secretary/ Vice Chairman of Thai National Mekong Committee, Member of the MRC Joint Committee for Thailand, Thai National Mekong Committee	Ministry of National Resources and Environment Thailand
World Bank		
Annette Dixon	Country Director, Thailand, Lao PDR, Cambodia	World Bank
Jeeva Perumalpillai-Essex	Sustainable Development Leader, Southeast Asia Sustainable Development	World Bank
Steve Jaffee	Lead Rural Development Specialist	East Asia & Pacific Sector Units, Vietnam Sustainable Development, World Bank

Name	Position	Location
Douglas J. Graham	Senior Environment Specialist	East Asia & Pacific Sector Units, Vietnam Sustainable Development, World Bank
Toru Konishi	Senior Economist	East Asia & Pacific Sector Units, Sustainable Development, World Bank
Bilaterals		
Ms. Helena Ahola	Counsellor, Head of Development Cooperation	Embassy of Finland
Hubert Jenny	Principal Urban Development Specialist	Asian Development Bank
Jelle van Gijn	Urban Water Supply and Sanitation Adviser	Asian Development Bank
John Dore	Senior Water Resources Advisor - Mekong Region	Australian Agency for International Development (AusAID)
Academia		
Dr. Tran Thuc	Associate Professor and Director of Vietnam Institute of Meteorology, Environment (IMHEN)	Vietnam Institute of Meteorology, Hydro Vietnam Institute of Meteorology, Hydrology and Environment
NGOs		
Ms. Rebecca Y. Ng	Program Officer	World Wildlife Fund
Mr. Marc Goichot	Greater Mekong's Infrastructure Coordinator	World Wildlife Fund, Vientiane, Lao PDR

Annex C. Borrower Comments



Kingdom of Cambodia
Nation Religion King

Cambodia National Mekong Committee

#364, Monivong Blvd, Sangkat Phsar Deumthkov, Khan Chamkar Mon, Phnom Penh, Cambodia, P.O.Box 2214, Phnom Penh 3
Tel: (855-23) 216 514, Fax: (855-23) 218 506, E-mail: cnmc@cnmc.gov.kh, Website: www.cnmc.gov.kh

Ref. No. CNMC: 598/12

Phnom Penh, 14 June 2012


Dear Dr. Martha Ainsworth,

Subject: Mekong River Commission: Water Utilization Project (P045864)
Draft Project Performance Assessment Report

With reference to your letter of May 24, 2012 regarding the above-mentioned subject, I would like to thank for your report.

Please find herewith the attached our comments in track changes and needs for some clarification.

I hope our comments would be accepted.

Yours sincerely 



Te Navuth
Secretary General
Cambodia National Mekong Committee

Dr. Martha Ainsworth,
Acting Manager, Public Sector Division
Independent Evaluation Group.
The World Bank, Washington D.C 20433
U.S.A

Borrower comments were received from the Cambodia National Mekong Committee on June 14th, 2012 in the form of track changes to the original document which are presented here in the chronological order in which they appeared in the text.

Preface

“This is a Project Performance Assessment Report (PPAR) of the Water Utilization Project (TF-23406), financed by a Global Environment Facility grant of US\$11 million made available to the Mekong River Commission. The grant was approved in February 2000 and closed in June 2008, a year later than planned, at which time US\$57,749 was cancelled. The Mekong River Commission is a river basin organization involving the governments of Cambodia, Lao PDR, Thailand, and Vietnam ~~and (China and Myanmar are observers)~~ that provides assistance and advice to member countries on the development, utilization, conservation, and management of the Mekong River Basin water and related resources. **China and Myanmar are observers.** Its headquarters are located in Vientiane, Laos, and Phnom Penh, Cambodia.”

Summary

“Following the Cambodian Peace Agreement in 1992, Cambodia requested *readmission** to the Committee. In 1995, the original members of the Mekong Committee (Cambodia, Laos, Thailand, and Vietnam) signed the Agreement on Cooperation for the Sustainable Development of the Mekong River Basin.”

**The comments requested that the word readmission be replaced with the word reactivation.*

“It is composed of a Secretariat, with 150 staff members, split between two Secretariat offices in Phnom Penh, Cambodia and Vientiane, Lao PDR and four National Mekong Committees, comprised of Government representatives and technical staff, located within each of the member countries.”

**The comments requested that the sentence clarify that the 150 staff members include staff within the National Mekong Committees.*

“However, consensus was not reached on key technical guidelines, on minimum flow and quality levels, that are needed to achieve the project objective of ensuring coordinated and sustainable water management in the Mekong Basin. The premise built into the Mekong Agreement is that Parties would be able to define clear-cut criteria on water flows and quality and establish basin standards; and that, with those consensus rules in hand, they could assess the compliance of any proposed development project. **But no one party has wanted to pre-commit to criteria that would result in automatic approval or rejection of a development project. Rather, parties to the Agreement used the outputs of the model supported (DSF) by the project to assess the cumulative impacts of the countries development plans against the range of economic, social and environmental criteria. The model was also used to establish and agree among the member countries on the hydrological basis for the assessment of development projects. ~~specific development projects.~~**”

**Comments requested that the bolded changes are made to the preceding paragraph.*

Ratings in the Summary

The Outcome of the project is rated **Moderately Unsatisfactory???**, based on the assessment of the relevance of the objectives and design, efficacy, and efficiency. Although the objective of the project was substantially relevant, the relevance of design was modest since it was based on the unrealistic premise that a fully scientific approach could replace case-by-case negotiations. Additionally, the project design did not pay adequate attention to national level adoption and implementation of project outputs, and did not put in place sufficient mechanisms to extend knowledge generated by the modeling to water use decision-makers outside of the National Mekong Committee structures **it is not clear expression, please clarify**. Project efficiency, hampered by a lack of donor coordination and poor sequencing, was also modest. There are also significant risks associated with the development outcomes supported by this project. Foremost amongst these is a risk of non-cooperation **it is not clear expression, please clarify**, or the “business as usual” scenario whereby unilateral or bilateral decisions are taken to the detriment of the regional good.

*The comments questioned the project rating and asked for further clarification.

Lessons

“The development of a Decision Support Framework to assist Mekong countries make more informed decisions about water resource management has demonstrated the opportunities and limits of bringing scientific and technical innovation **to bear in an environment fraught with political economy constraints** **it is not clear expression, please clarify!!!**. The premise that scientifically determined acceptable levels of water flow and quality and related modeling could replace case-by-case, negotiated water resource management decisions proved unrealistic. Rather, the models have been used to determine the winners and losers of proposed basin development projects in the context of negotiations that have focused on country-specific, rather than basin-wide interests.”

“ Human Resource development at the national level is critical for the effective implementation of **the 1995 MA. international and regional water resource** agreements. Participating nations require strong water expertise. Donor programs that seek to support effective implementation of water resource agreements at the international and regional level should consider how to support skills enhancement and training of water engineers, hydrological experts, water resource planners, and social and environmental specialists correspondingly at the national level.”

*The comments asked for the preceding clarifications to be made.

Background

The river flows south from China’s Yunnan province alongside the Myanmar-Laos and the Thai-Laos borders, and then descends onto the Cambodian **flood** plain, where it is regulated by the storage of the Tonlé Sap, a large lake that contracts and expands seasonally from 2,700 km² to 16,000 km² in response to flooding from the head reaches of the river.

“Laos contributes 35 percent, Cambodia 18 percent and Thailand 18 percent. China contributes 16 percent while Vietnam contributes 11 percent and Myanmar only 2 percent.” Comments requested that “upstream and downstream” be added.

“Following the Cambodian Peace Agreement in 1992, Cambodia requested **readmission** to the Committee”

**The comments requested that the word readmission be replaced with the word reactivation.*

MAP of the Mekong

*The comments requested that the Map be corrected.

Chapter 2

“Funds were split between facilitating the negotiation of the water use and quality rules and building a basin planning model, but only a small amount of finance and priority was placed in supporting the work of the Environment **Division** in the Mekong River Commission **Secretariat.**”

The purpose was to integrate the project under this line **division**, and achieve better coordination and increase synergy with the UNDP-supported Basin Development Program, which aimed at developing a series of scenarios regarding infrastructure development and water utilization.

“The project supported an internship program which engaged junior water resources engineers nominated by the member countries in developing the hydrological, **simulation and hydro-dynamic models**. These engineers have since returned to the National Mekong Committee (NMCs) of their respective governments. Also, during the project extension period, the Project focused on increasing the technical capacity of the NMCs by developing hydrological, **simulation and hydro-dynamic models** at the national level. The project implemented a case study approach where technical experts of the MRC and the government staff jointly developed detailed and focused hydrological, **simulation and hydro-dynamic models** for high priority areas of development (for example, hydropower, flood mitigation, irrigation).”

The *Procedure on Notification, Prior Consultation, and Agreement* recently has been tested with the commencement of the construction of the 1,260 megawatt Xayaburi dam in Lao PDR, estimated to cost US\$3.5 billion. **Prior** Consultation among the member states between November 2010-April 2011 resulted in a request by some member countries to postpone the building of the dam. Cambodia claimed that the prior-consultation was not finished and that the additional study would **be required and the result is further consulted to fill the knowledge gap on hydrology, sediment transport, fisheries, trans-boundary and cumulative impact. Vietnam cited the concern that its fisheries could experience a decline by 200,000-400,000 tons per year due to negative effects of the dam.** As a result, Vietnam endorsed a 10-year moratorium on dam building in the lower Mekong Basin – a key recommendation of a Strategic Environmental Assessment commissioned by the MRC during the project period.

“Overall cooperation, including data and information sharing between China and the MRC member states, has been partially enhanced under project support for the MRC.”

**Comments requested that the text recognize that there is an on-going Agreement on sharing of hydrological data during flood season between China and MRC.*