

MEKONG PROJECT 4 ON WATER GOVERNANCE
Challenge Program for Water and Food Mekong

WATER GOVERNANCE SYSTEMS IN CAMBODIA, LAO PDR AND VIETNAM

Sokhem Pech and Himesha Ranamukhaarachchi

Mekong Program on Water Environment and Resilience

July 2013



TABLE OF CONTENTS

LIST OF TABLES	2
LIST OF FIGURES	2
LIST OF ACRONYMS	3
1.0 INTRODUCTION	6
2.0 REGIONAL AND NATIONAL STAKEHOLDER MAPPING	8
2.1 ANALYSIS OF THE STATE OF THE REGIONAL INSTITUTIONS AND ORGANIZATIONS	8
2.2 ANALYSIS OF THE STATE OF THE NATIONAL INSTITUTIONS AND ORGANIZATIONS	17
2.3 HYDROPOWER DEVELOPMENT, RESETTLEMENT, COMPENSATION AND ENVIRONMENTAL PROTECTION	19
2.3.1 Cambodia.....	19
2.3.2 Lao PDR.....	22
2.3.3 Vietnam	26
2.4 WATER RESOURCES MANAGEMENT AND IRRIGATION	30
2.4.1 Cambodia.....	30
2.4.2 Lao PDR.....	32
2.4.3 Vietnam	33
2.5 FISHERIES	34
2.5.1 Cambodia.....	34
2.5.2 Lao PDR.....	36
2.5.3 Vietnam	36
3.0 ASSESSMENT OF ORGANIZATIONAL CAPACITIES FOR WATER RESOURCE MANAGEMENT.....	37
3.1 INSTITUTIONAL MANDATES	37
3.2 SCIENCE AND TECHNOLOGY	39
3.3 HUMAN RESOURCES AND CAPACITY	39
3.4 FINANCIAL RESOURCES	41
4.0 NON-STATE ACTORS AND SOCIAL ACTIVISM	42
4.1 MULTI-LATERAL DEVELOPMENT AGENCIES.....	42
4.1.1 Mekong River Commission	42
4.1.2 World Bank, Asian Development Bank and Other Donors	44
4.2 PRIVATE SECTOR	46
4.3 NGOS AND SOCIAL ACTIVISM	47
5.0 CONCLUSIONS AND RECOMMENDATIONS.....	48

LIST OF TABLES

Table 1	Key Asia and Pacific Inter-Governmental Organizations	15
---------	-------------------------------------------------------------	----

LIST OF FIGURES

Figure 1	Major Hydropower Investors in the Mekong River Basin.....	12
Figure 2	Graph A: Level of adherence by Mekong countries to environment treaties; Graph B: Key principles and objectives enshrined in those treaties	14
Figure 3	Schematic illustration of a loose triadic situation in MRC and GMS connected relationships.....	16
Figure 4	Schematic illustration of a triad situation in the MRC and GMS connected relationships at national and local levels in Cambodia.....	18
Figure 5	The EIA process in Cambodia.....	20
Figure 6	Steps in hydropower power concession awards, approval and implementation and monitoring processes in Lao PDR.....	25
Figure 7	Legal framework for energy and hydropower development in Vietnam ²⁹	28

LIST OF ACRONYMS

3SPN	3S River Protection Network
ACMECS	Ayeyawady-Chao Phraya-Mekong Economic Cooperation
ADB	Asian Development Bank
AFD	Agence Francaise de Developpement
AMBDC	ASEAN-Mekong Basin Development Cooperation
ASEAN	Association of Southeast Asian Nations
CARERE	Cambodia Area Rehabilitation and Regeneration Project
CDCam	Conservation and Development in Cambodia
CEPA	Culture and Environment Preservation Association
CFDO	Community Fisheries Development Office
CIA	Cumulative Impact Assessment
CIDA	Canadian International Development Agency
CLMV	Cambodia, Laos, Myanmar, and Vietnam
CNMC	Cambodian National Mekong Committee
CVS	Cambodian Volunteers for Society
DANIDA	Danish International Development Agency
DEDP	Department of Energy Promotion and Development
EDF	Electricite de France
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
EPC	Environmental Protection Commitments
EPF	Environment Protection Fund
EPL	Environmental Protection Law
ERAV	Electricity Regulatory Authority of Vietnam
EVN	Electricity of Vietnam
FACT	Fisheries Action Coalition Team
FAO	Food and Agriculture Organization
FIA	Fishery Administration
FMCs	Fisheries Management Communities
FWUC	Farmer Water User Committees
GDP	Gross Domestic Product
GMS	Greater Mekong Sub-region
GIZ	Deutsche Gessellschaft für Internationale Zusammenarbeit
IDICO	Industrial Distributors International Co.

IEE	Initial Environmental Examination
IEIA	Initial Environmental Impact Assessment
IUCN	World Conservation Union
IWRM	Integrated Water Resources Management
JIBIC	Japanese Bank for International Cooperation
JICA	Japan International Cooperation Agency
LenS	Lao Environment and Social
LEP	Law on Environmental Protection
LMB	Lower Mekong Basin
LNMC	Lao National Mekong Committee
LRP	Livelihood Restoration Plan
LWR	Law on Water Resources
MAF	Ministry of Agriculture and Forestry
MAFF	Ministry of Agriculture, Forestry and Fisheries
MARD	Ministry of Agriculture and Rural Development
MEF	Ministry of Economy and Finance
MEM	Ministry of Energy and Mines
MIME	Ministry of Industry, Mines and Energy
MK	Mekong Project
MOC	Ministry of Construction
MOE	Ministry of Environment
MOF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MOT	Ministry of Transport
MOTI	Ministry of Trading and Industry
MOU	Memoranda of Understanding
MOWRAM	Ministry of Water Resources and Meteorology
MPI	Ministry of Planning and Investment
MR	Mekong Region
MRB	Mekong River Basin
MRC	Mekong River Commission
MRCS	Mekong River Commission Secretariat
MRD	Ministry of Rural Development
MWARP	Mekong Water Resources Assistance Programme

NTFP	non-timber forest products
NGO	non-governmental organization
NHP	National Hydropower Planning
NMC	National Mekong Committee
Norinco	China North Industries Corporation
NSEDP	National Socio-economic Development Plan
NTPC	Nam Theun 2 Power Company
NWRC	National Water Resources Council
PEI	Poverty-Environment Initiative
PIMD	Participatory Irrigation Management and Development
PNPCA	Procedures for Notification, Prior Consultation and Agreement
PPC	Provincial People's Committee
RAP	Resettlement Action Plans
RBC	River Basin Committee
RBO	River Basin Organizations
RC	Resettlement Committees
RCC	Rivers Coalition Cambodia
RMU	Resettlement Management Units
SEA	Strategic Environmental Assessment
SEARIN	Southeast Asia Rivers Network
SEIAD	Social and Environmental Impact Assessment Department
SIA	Social Impact Assessment
Sida	Swedish International Development Cooperation Agency
SMMP	Social Management and Monitoring Plan
TA	Technical Assistance
TERRA	Toward Ecological Recovery and Regional Alliance
UMNCIP	Upper Mekong Commercial Navigation Channel Improvement Project
UNDP	United Nations Development Program
UNHCR	United Nations High Commissioner for Refugees
VEPF	Vietnam Environmental Protection Fund
WFP	United Nations World Food Programme
WREA	Water Resource and Environment Administration
WWF	World Wide Fund for Nature

1.0 INTRODUCTION

Development of the hydroelectric potential of the mainstream Mekong River and its tributary systems has become a significant strategic issue in the Greater Mekong Sub-region (GMS). With an estimated hydropower potential of 30,000 MW, dam development in the Mekong River Basin (MRB), will meet a significant portion of the region's energy demand, which is expected to increase at the rate of 7 percent per year over the next 20 years. A strong demand for electricity comes from the rapidly industrializing countries of China, Thailand and Vietnam, and electricity supplied from the hydropower sector is expected to drive growth in industries and national economies in the region.

Recognizing the revenue generating potential of hydropower, countries in the Upper and Lower Mekong Basin (LMB) have committed to the development of their vast water resources. Lao PDR itself has signed over 60 Memoranda of Understanding (MOU) for mainstream Mekong and tributary projects. Cambodia has developed a master plan, which identifies 5,300 MW of electricity-generating capacity through 14 projects. Vietnam's Hydropower Master Plan outlines plans for developing 2,500 MW of electricity over the next decade. These countries have oriented their investment regimes to facilitate greater involvement of private sector in the energy industry, in order to augment the GDP growth and economic development. During the past decade, private investors in China, Thailand, Vietnam, Malaysia and Russia have become involved in hydropower plans in the region.

The process of building large dams in the MRB, however, is complicated by the highly interdependent linkages that exist between the Mekong River system, and natural resources and livelihoods in the region. Costs and benefits of dam construction on livelihood options, agriculture, fisheries, biodiversity, transportation and other sectors have not been comprehensively evaluated to date. Over 65 million people in the region depend on the Mekong River system and its tributaries for economic sustenance, and construction of dams for electricity generation can have profound and lasting impacts on people's livelihoods and ecosystems.

As a result, hydropower development in the MRB has become a subject of heated debate in the region. Water and hydropower decision-making, planning and implementation in the region are considered to be non-inclusive and ineffective by many actors. Efforts by regional organizations, such as, the Mekong River Commission (MRC) to facilitate dialogue and inform local governments of the likely impacts of dams have had little impact on patterns of dam development.

Water governance refers to the way in which power is distributed, organized, shared, and negotiated in society, the interactions of stakeholders and decision-making processes involved in how water resources are to be developed and utilized, and benefits and involuntary risks distributed. This includes political, administrative, and policy structures, both at the formal and informal levels that are embedded in and influence decision-making and management practices. It also involves the processes of setting agendas, the values, norms and institutions influencing decision-making, and implementation of policies and practices for day-to-day management of water.

Countries in the LMB also have different legal and administrative systems governing hydropower, water resource management and livelihoods, in terms of the level of experience, scope and coverage of provisions, capacities of institutions and personnel, as well as the broader economic, social and political contexts. Water governance in the Mekong is not the responsibility of the State alone, and it is not confined to a political administration. National governments and agencies, banks and financiers, politicians, rent-

seeking businessmen, technical consultants, infrastructure operators, consumers, organized civil groups, academics, and international NGOs all demonstrate strong interests in Mekong water politics. Within the current context of prospective hydropower development in the LMB, these actors interact dynamically in various roles related to the facilitation and impedance of dam construction, the evaluation of its impacts, and the dissemination of information.

Mekong Project (MK) 4 Output 1 activities have identified government decision-making frameworks related to water governance and water resource management in Cambodia, Lao PDR and Vietnam. Detailed reviews of legal instruments and institutional and administrative arrangements pertaining to the three issue fields of hydropower, water allocation and livelihoods was provided in three separate country assessment reports by the three countries. These reports aimed to understand the national decision-making processes on dam projects, especially those that influence the actual outcomes of hydropower projects on environmental sustainability, social equity, water allocation and livelihood planning in the LMB. They have also explored the overarching gaps and weaknesses in policies and practices that have served to weaken the consideration of environmental and socio-economic impacts of hydropower and other water-related infrastructure, and the advancement of sustainable development.

Given the extensive scope of information presented in each country report, this report will not repeat the description and analysis of the existing legal and administrative arrangements found in the country reports. Instead, it synthesizes and summarizes the potential areas for mutual learning and strengthening identified in country assessment reports of Cambodia, Lao PDR and Vietnam, and their implications for sustainable hydropower and water allocation planning in the three countries. Key policy and implementation challenges are identified for the hydropower, irrigation and water resources, fisheries, and water supply and sanitation sectors. The national reports explore the organizational capacities of key government agencies responsible for water governance in terms of institutional mandates, human resource capacities, scientific and technological capacities, and financial capacities. Furthermore, the roles of non-state actors, including multi-lateral and bilateral institutions, the private sector and socially active NGOs and civil organizations are also discussed. This report synthesizes these findings, and presents a regional profile and characterization of water resource governance in the Lower Mekong Basin.

The following three country assessment reports developed by the National Research Teams from Cambodia, Lao PDR and Vietnam provided the basis for this report:

- Policies and Administrative Mechanisms in Water Governance in the Kingdom of Cambodia (Phyrom and Keartha 2011, Draft);
- Policies and Administrative Mechanisms in Water Governance in the Lao People's Democratic Republic (Sisouvanh et al. 2011, Draft);
- Policies and Administrative Mechanisms in Water Governance in the Socialist Republic of Vietnam (Nam et al, 2011, Draft)

The analysis also relied on other reports exploring water governance structures in the LMB (including, among others, IUCN, 2009; MK1 Final Report, 2011, Ministry for Foreign Affairs, Finland, 2010; ADB Technical Assistance Consultant's Report, 2007; ADB Technical Assistance Consultant's Report, 2009; CPWF, 2010; FAO, 2009; Pech *et al*, 2010b; Dao Trong Tu *et al*, 2010b).

Key actors in water resource management and power development, and key laws and regulations governing the issue fields of water valuation, dam cascades and resettlement of livelihoods are briefly discussed and outlined in the section below on sectoral performance challenges.

2.0 REGIONAL AND NATIONAL STAKEHOLDER MAPPING

The discussion of natural resources management in the Mekong Basin and LMB must be structured around numerous interests and differentiated perspectives within each country and in the entire region:

1. Multi-jurisdiction: Six countries in the Mekong River and hundreds of communities and interest groups;
2. Multi-scale: Multiple interests at the community, sub-catchment, basin, regional, national and global scales;
3. Multi-perspective: Different economic, political, and social objectives and unequal financial and technological capacities, which currently prevail in all Mekong countries define perspectives that vary from country to country, province to province, by resource sector, by socio-political actors and by the scale of orientation.
4. Multi-disciplinary: Numerous disciplines and point of views are involved (of policy makers, resources planners, developers, and the scientific community).¹ Many key players—riparian countries and their government agencies, basin communities, civil society organizations, the private sector, funding agencies and development institutions—have a legitimate stake in all of them.

2.1 ANALYSIS OF THE STATE OF THE REGIONAL INSTITUTIONS AND ORGANIZATIONS

The Mekong Region (MR) incorporates land and people within six riparian countries – Yunnan province and Guangxi Zhuang Autonomous Region of China, Myanmar, Laos, Thailand, Cambodia and Vietnam with a total population of over 330 million.² The Mekong River Basin (MRB)—one of the most important international river basins in MR—is home to over 70 million people, a number that is projected to increase rapidly.³ In the region, series of large-scale development projects are at different stages of planning and implementation.

¹ Pech, S and K. Sunada. 2006. The Governance of the Tonle Sap Lake, Cambodia: Integration of Local, National and International Levels”, *Int’l Journal of Water Resources Development*, Vol. 22 No. 3, pp. 299-416.

² ADB, 2005. *Key Indicators 2005: Labour Markets in Asia: Promoting Full Productive, and Decent Employment*, Asian Development Bank, Manila, available at www.adb.org/statistics/mdg.asp accessed on 01 December 2005

³ *State of the Basin Report*. 2003. Mekong River Commission: Vientiane.

In the present-day Mekong Region, there are many actors with very different interests and powers, demonstrating contrasting behavior, and armed with varying degrees of influence.⁴ First of all, there are the six Mekong Region countries – China, Myanmar, Lao PDR, Thailand, Cambodia and Vietnam. They have different economic, political, social and cultural objectives that define the range of perspectives in the natural resources management. Moreover, perspectives are differentiated by country, by resource sector, by socio-political actor and by the scale of orientation.⁵ From the socio-economic point of view, all the three countries studied—Cambodia, Lao PDR and Vietnam—are at different levels of development. There are differences in the levels of income even between those living within the Mekong Basin area and their peers living in other areas.^{4,6}

Box 1 - Major Mekong Regional Initiatives and Fora (Pech & Sunada, 2006)

Mekong River Commission (MRC) was established by the four countries of the Lower Mekong Basin—Laos, Thailand, Cambodia and Vietnam— in 1995 to replace Mekong Committee (1957-1975) and Interim Mekong Committee (1977-1992). The Mekong Committees were “infamous” for their large-scale plans for “harnessing the mighty Mekong”. MRC (at least from 2000-2006) attempted to move away from its earlier image of being sectoral, closed, and hydropower-focused, to become an organization supporting integrated river basin management. China and Myanmar are currently observers to MRC.

Greater Mekong Sub-Region (GMS) established in 1992 is the largest program to promote trade, investment and infrastructure development in the GMS. The GMS is the only regional forum in which all six Mekong riparian countries participate. While the MRC operates only within the MRB hydrological boundary, the GMS program extends beyond it to cover the whole of Yunnan province, Guangxi Zhuang Autonomous Region of China, Myanmar, Laos, Thailand, Cambodia, and Vietnam.

Upper Mekong Commercial Navigation Channel Improvement Project (UMNCIP) under the Quadripartite Agreement on Commercial Navigation Lancang-Mekong is so far the only treaty directly related to the Mekong River resources that China is a party to. According to it, the river stretch of over 886 km from the Samoa port in Jinghong, China, to Luang Prabang in Laos, is open to free navigation by the commercial vessels of the state parties, namely, China, Myanmar, Laos and Thailand. There are more than 100 shoals, rapids and reefs in that section, of which 11 major rapids and 10 reefs pose a serious threat to navigation, and have to be removed. But work in Thailand and some sections of Laos was halted due to growing public protest.

Association of Southeast Asian Nations (ASEAN) is another regional body set up in 1967 to promote free-market principles and regional security. ASEAN now includes all the 10 countries of Southeast Asia. In 1996, ASEAN inaugurated the Basic Framework of the ASEAN-Mekong Basin Development Cooperation (AMBDC). In

⁴ ADB and SEI, 2002 Strategic Environmental Framework: Integrating Development and Environment in the Transport and Water Resources Sectors, Vol. II, III and IV, Asian Development Bank & Stockholm Environment Institute, Manila.

⁵ Pech, S. 2010. Cambodian and Mekong Water Resources Governance, in Sato J (ed.) Transboundary Resources and environment in Mainland Southeast Asia, Institute for Advanced Studies on Asia, the University of Tokyo.

⁶ MRC, 2010a. Synthesis of initial findings from Assessments: Assessment of basin-wide development scenarios (Work in Progress), Basin Development Plan Programme, Phase 2, Mekong River Commission Secretariat, Vientiane, Lao PDR

2000, ASEAN launched Initiatives for ASEAN Integration (IAI) to help its four new member countries along the Mekong River—Cambodia, Laos, Myanmar, and Vietnam (CLMV)—narrow the development gaps and fully integrate into the ASEAN. At the fifth ASEAN + China Summit in November 2001, then Chinese Premier Zhu Rong Ji declared his support and commitment to strengthening the cooperation in the Mekong Basin, free trade and the navigation channel improvement project. The ASEAN-China Free Trade is being finalized.

World Bank and ADB Mekong Water Resources Partnership Programme (MWARP):

In 2004, the World Bank initiated an effort to redefine the Bank's approach to the Mekong Region. The output of this effort will be the Mekong Water Resources Assistance Programme (MWARP). From the perspective of the WB and Asian Development Bank (ADB), it is a five- to seven-year engagement providing the mechanism to implement and further develop this cooperation framework under four strategic results areas: balanced development and investment; environmental and social safeguards; integrated water resources management; and governance. Initially, it will focus on the four LMB countries with particular emphasis on the three transboundary sub-basins between Thailand-Laos, Cambodia-Laos-Vietnam, and Vietnam and Cambodia, and on hydropower, infrastructure, irrigation and agriculture, navigation and transport, flood and wetland nexus, and capacity building (World Bank & ADB, 2006).

UNESCAP is a UN Regional Body whose long history of promoting economic development in the Mekong region dates back to 1949. In 2000, ESCAP declared 2000–2009 as the Decade of the Greater Mekong Sub-region Development Cooperation. It was especially active in promoting transport and navigation.

Ayeyawady-Chao Phraya-Mekong Economic Cooperation (ACMECS) was formalized at the 12 November 2003 Summit of the heads of the governments from Cambodia, Laos, Myanmar and Thailand, which took place in Bagan, Myanmar. At the 2005 Summit where Vietnam joined it, ACMECS adopted a vision of “five countries, one economy”.

Donor community and international funding institutions: There are host of multilateral and bilateral donors and funding agencies, and private investment groups. They support and fund a multitude of projects and programs through various Mekong initiatives/organizations or bilateral channels covering different parts of the Mekong Region.

Non-Governmental Organizations and Programs: A number of international non-governmental organizations have developed basin-level initiatives to strengthen the capacity of governments, civil society groups and other key stakeholders to work together at the regional level to find solutions to basin-wide and transboundary environmental problems. These include the International Union for Conservation of Nature (IUCN), the World Wide Fund for Nature (WWF) and Oxfam. There is also a good network of research. M-Power water governance network is one of the examples of collaboration among NGOs, international organizations, and academic and research community carrying out joint research in the region.

The sudden groundswell of hydropower development by private power producers and private financing, along with the revitalization of the once-abandoned hydropower dam projects along the Mekong Mainstream in the Lower Mekong Basin in 2008, took many observers, including major regional organizations such as the MRC, and international financing institutions, by surprise.⁵ These private project developers are mainly from

Thailand, Vietnam, China, Malaysia, and Russia, with limited commitment to international social and environmental performance standards⁷. Massive inflows of bilateral and private funds from Thailand, Korea, Kuwait, Qatar, China, and India for irrigation and water diversion are a reality in Cambodia and Lao PDR.⁸ This is happening as there are significant vested bureaucratic, political and business interests behind the hydropower industry and large-scale water diversion. These interests work to promote large dams and water diversion projects even where better energy and farming options exist.⁹

Flush with nearly a trillion dollars in hard currency reserves, and eager for stable friends and influence in Southeast Asia, China issues big loans for big projects to countries in the region, an activity that used to be the sole preserve of Western donors, such as, the World Bank, Asian Development Bank, the United States and Japan.^{5,10} The bilateral trade and investment between China and Vietnam, and China and Thailand makes it impossible for these more developed Mekong countries (Thailand and Vietnam) to openly challenge China.¹¹

⁷ A report prepared by the World Bank and Asian Development Bank (ADB) in 2006 did not foresee that such aggressive development of hydropower dams on the mainstream in parts of the Mekong Basin (other than in China) was feasible from environmental, financial and political standpoints (World Bank and ADB, 2006). Rather, the 2006 report predicted that the countries' rapidly growing need for power would be met through cooperation in cross-border hydropower sharing on tributaries, and through other alternatives.

⁸ Dore, J. 2010. Personal communication.

⁹ Pech et al, 2010, Review of the Mekong River Commission's Basin Development Plan Program Phase 2, Panel of Experts Report prepared for the Mekong River Commission Secretariat, Vientiane, Lao PDR.

¹⁰ Pech and Sunada, 2008, Book Chapter: Is Sharing and Caring Mekong Region Possible? - Institutional Capacity Assessment for Sustainable Policy Scenarios. In: the Modern Mekong Myth Book, Finnish Academy of Sciences, Helsinki University of Technology (TKK), pp. 135-148.

¹¹ Pech, S and K. Sunada. 2006b, China Natural Resources Demand: Opportunities and Challenges for Mekong Sub-Region, Proc. of Regional workshop "China in Mainland Southeast Asia: Flying with the Dragon", Chiang Mai 17-19 October 2006

Figure 1 Major Hydropower Investors in the Mekong River Basin



Recently, the United States of America (USA) announced its return to the Lower Mekong Region after decades of absence from the region since the end of the Vietnam war.^{12,13} The US advised some Mekong countries not to place all their “eggs” in a single Chinese basket. Similar concerns were raised when World Bank decided to return to the Mekong Region in the late 2000s. But would they be able to make any difference? For this, it is important to monitor and assess the changes in the geopolitics and decision-making quality in the region besides studying the mechanisms for distributing the benefits and risks of hydropower development.

¹² Pech S, 2011b. Examining Legitimacy and Legality in the Context of Multi-lateral, Multi-river Basin Treaty Frameworks - UN Watercourses Convention and Greater Mekong Sub-region, (in press) IHP-HELP Centre for Water Law, Policy and Science (CWLPS), University of Dundee.

¹³ To help strengthen U.S. engagement in Southeast Asia, Secretary Clinton announced the Lower Mekong Initiative (LMI) in July 2009, on the margins of the ASEAN Post-Ministerial Meeting. The LMI aims to engage Cambodia, Laos, Thailand, and Vietnam by helping to build regional capacity in the areas of environment, health, education, and infrastructure in order to facilitate multilateral cooperation among the four countries on issues of mutual concern, such as, the common challenge of effective water resource management.

At the regional level, the existing Mekong regional organizations and initiatives contributed to the regional confidence and trust building by providing important regional platforms for dialogues.^{1,14,15} But during the last decades, the development of the MRB that initially focused only on irrigation, hydropower, flood control and navigation, has been expanded to accommodate more intensive basin development and sub-regional economic integration. In a meantime, new Mekong-related bodies and initiatives emerged. The geopolitical landscape of the MR has eventually become even more complex, and the transboundary issues have increased.¹ The civil society organizations question the relevance, effectiveness and efficiency of several regional governmental institutions and organizations (see e.g. IUCN, TEI, IWMI, M-POWER, 2006).¹⁶ They complain that the regional organizations have been notoriously absent in helping to address the critical transboundary impacts of uncoordinated development, or have chosen to brush important issues under the rug, or have simply displaced them spatially into the future or onto other issue dimensions.¹⁷ The development banks also projected a rather gloomy future for regional cooperation through the Mekong River Commission (MRC) – one of the oldest Mekong regional bodies.¹⁸ They cautioned that MRC was at crossroads and if this cooperation framework was not able to consolidate in the next three to five years, and be seen as efficient and effective by its member countries, it may begin to unravel, which in turn could threaten broader Mekong achievements (World Bank & ADB, 2006).

There are numerous international agreements and institutions dealing with sustainable management of the MRB. Each of them has its own membership, focus, principles or norms that determine how it cooperates and defines its strategic direction and priority. It is regrettable that the coordination and integration are deficit.

An assessment of the international environmental treaties and organizations in the ECOLEX database¹⁹ shows that all or some of the Mekong countries are linked to over 33 environment-related treaties. All six of them are parties or signatories to one-third of them. These treaties deal with biodiversity conservation and climate change, river basin resources development and economic integration, protection of the world cultural and natural heritage, and so forth.

¹⁴ Badenoch, 2002 *Transboundary Environmental Governance – Principles and Practice in Mainland Southeast Asia*, World Resources Institute, Washington, DC.

¹⁵ Pech S, Sunada K and Oishi S, 2007, *Managing Transboundary Rivers: The Case of the Mekong River Basin*, International Water Resources Association *Water International*, Volume 32, Number 4, Pg. 503-523, December 2007.

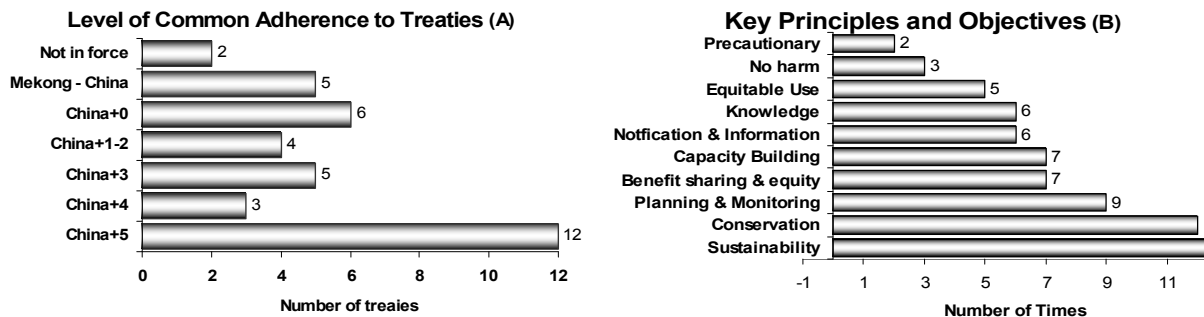
¹⁶ IUCN, TEI, IWMI, M-POWER. 2006. *Feedback to MRC from Mekong Region Waters Dialogue*, M-Power. Accessed at: <http://www.mpower.net.org/>

¹⁷ Hirsh and Jensen, 2006 *National Interest and Transboundary Water Governance in the Mekong*, Australia Mekong Resource Centre, University of Sydney, in collaboration with DANIDA.

¹⁸ World Bank and ADB. 2006 *Future Directions of Water Resources Management in the Mekong River Basin*, WB/Asian Development Bank Joint Working Paper presented at the 2nd Mekong Region Waters Dialogue, on 6 to 7 July 2006 in Vientiane, Lao PDR.

¹⁹ www.ecolex.org/index.php

Figure 2 **Graph A: Level of adherence by Mekong countries to environment treaties; Graph B: Key principles and objectives enshrined in these treaties**²⁰



China+0 is for those agreements that China entered into with other non-Mekong countries such as Russia and Mongolia. Number of times refers to how often those particular principles were mentioned in the studied agreements. As also shown in Figure 2(A), China is party to bilateral treaties with Russia, and with Mongolia dealing with their shared rivers and lake basins where China happens to be a downstream country. These treaties enshrine those key international water law principles, such as, equitable use, sharing of benefits, no substantial harm, cooperation and joint development, and sustainable development. It serves as an important measurement of China's practice and application of international law principles and norms in the trans-boundary river and lake basins at least bilaterally. China is also a party to the Upper Mekong Commercial Navigation Agreement with Laos, Thailand and Myanmar (see Table 1). But China is not party to the ASEAN agreements on transboundary haze pollution, and on conservation of nature and natural resources (open for ASEAN member states), and to the 1995 Mekong Agreement (open to China and Myanmar to join if they accept the provisions and obligations under it) (see Table 1).

As shown in Figure 2(B), these treaties and declarations to which China and other Mekong countries are parties to, enshrine existing and emerging international environmental legal principles, such as: i) equitable use and sharing of benefits; permanent right to natural resources, and responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or areas; and ii) precautionary approach and sustainable development.

Through numerous policy declarations at the GMS Summit and food and agriculture treaty, all Mekong countries have made political commitments to take leadership for the sustainable management of their shared resources, and have pledged to implement relevant international agreements on sustainable development, including the Kyoto Protocol and the goals advanced at the World Summit on Sustainable Development (See e.g. GMS Declarations, 2000, 2002; Treaty on Plant Genetic Resources for Food and Agriculture, 2004). The Declarations of the 1st and 2nd GMS Summits contain key principles of international relations, such as, equality and mutual respect, equal partners; common prosperity and equity, sharing of benefits, joint initiatives for human resource development; and sustainable management of the national and shared resources. On many occasions, they also refer to the principle of sustainable development, and integration of the GMS development programs in their respective national systems.

²⁰ Pech, 2011. Examining Legitimacy and Legality in the Context of Multi-lateral, Multi-river Basin Treaty Frameworks - UN Watercourses Convention and Greater Mekong Sub-region, (in press) IHP-HELP Centre for Water Law, Policy and Science (CWLPS), University of Dundee.

Table 1 Key Asia and Pacific Inter-Governmental Organizations

	Name of Organizations	China	Myanmar	Laos	Thailand	Cambodia	Vietnam	Members
1	ASEAN Regional Forum (ARF)	M	M	M	M	M	M	26
2	Greater Mekong Sub Region (GMS)	M	M	M	M	M	M	06
3	UN Economic and Social Commission for Asia and the Pacific (UNESCAP)	M	M	M	M	M	M	53
4	Asian Development Bank (ADB)	M	M	M	M	M	M	43
5	Upper Mekong Commercial Navigation	M	M	M	M			04
6	Asia-Pacific Fishery Commission	M	M		M	M	M	20
7	Asian Productive Organization (APO)	M		M	M	M	M	20
8	Asia Pacific Economic Cooperation (APEC)	M			M		M	21
9	Asia Pacific Tele-community (APT)	M	M	M	M		M	33
10	Mekong River Commission (MRC)	DP	DP	M	M	M	M	04+2
11	ASEAN	DP	M	M	M	M	M	10+3
12	Centre on Integrated Rural Development for Asia & Pacific (CIRDAP)		M	M	M		M	14

(Member = M, Dialogue Partner = DP, Non-Member = 0) Source : Sokhem Pech, 2011

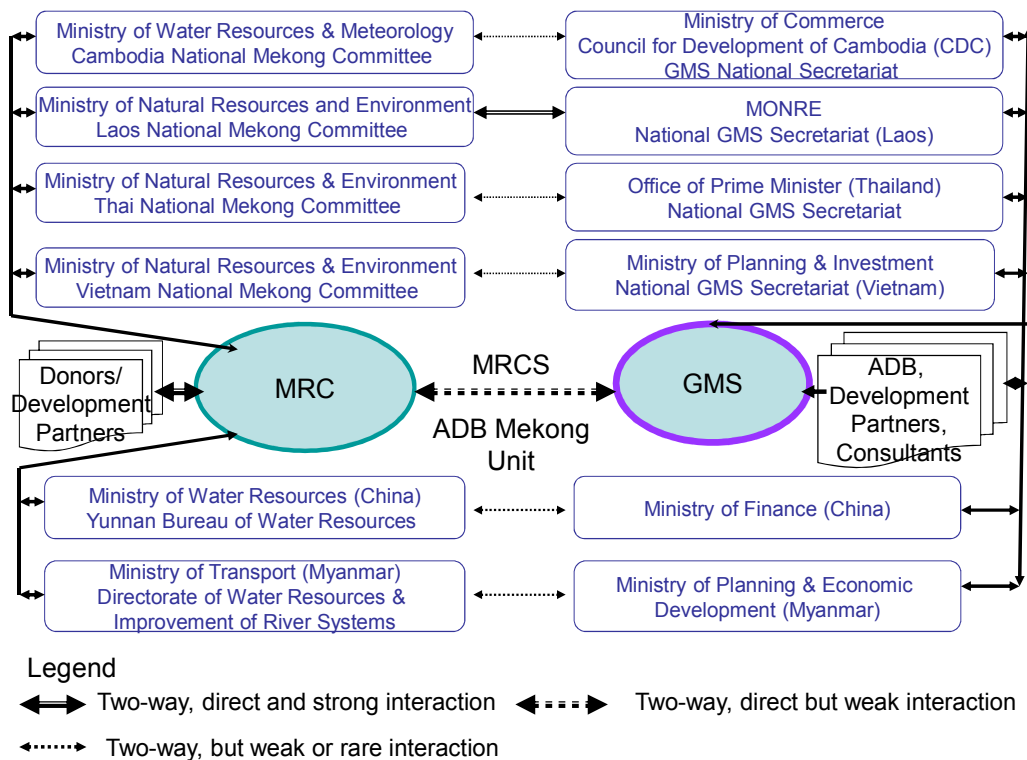
The search for Asia and Pacific Regional Inter-governmental Organizations in the University of Michigan Library Documents Centre²¹ and Electronic Information System for International law (EISIL)²² shows that the Mekong region countries are members of numerous international organizations. Four of the 12 regional economic, security and natural resources development organizations have all the six Mekong countries as members, and China is a member with most of the other Mekong countries in the other five regional organizations. China has the status of a dialogue partner in two regional organizations, MRC and ASEAN, of which all other Mekong countries except Myanmar (it's a dialogue partner in the MRC) are members.

While being well aware that each regime had multiple actors at different scales, the study specifically evaluated the power relations between MRC and GMS to understand who sets the agenda, and how it is set at the regional or international level, national level and at local or community level, who determines key issues and "common values"; and how these key actors relate to each other. The researchers consulted large volume of records of the key meetings in the GMS database of proceedings of Ministerial, forum and working group meetings, and the minutes of the MRC's Council, Joint Committee, and Dialogue Meetings.

²¹ www.lib.umich.edu/govdocs/intl.html

²² www.eisil.org/index

Figure 3 Schematic illustration of a loose triadic situation in MRC and GMS connected relationships



(Source: Pech S, 2010. Cambodian and Mekong Water Resources Governance, in Sato J (ed.) Transboundary Resources and Environment in Mainland Southeast Asia, Institute for Advanced Studies on Asia, the University of Tokyo).

The analysis showed that at the regional levels, the agenda was determined by and with the influence of the designated lead-ministries/agencies in the member countries, and the donors. The issues of MRC and GMS power relations and connectedness were compounded further by the emergence of the recent World Bank and ADB Water Resources Partnership Program (MWARP).

The focal relationship between the two international regimes plays out at two different levels - between national leading agencies for MRC, and those for GMS, and between the permanent administrative arms of these two organizations – MRC Secretariat and ADB Mekong Department serving as the *de facto* regional Secretariat for GMS (Figure 3). Our analysis found that the two agencies had weak focal relations, leading to poor exchange of information and synergy between the MRC and GMS.²³

As shown in Figure 3, at the national level, Laos is the only country where one of the Ministers in the Prime Minister’s office is in charge of both MRC and GMS cooperation. In other Mekong countries, the MRC and GMS were dealt with by different national agencies with poor interaction and exchange of information/feedback mechanism.¹

At the regional level, the focal relations between Mekong River Commission Secretariat (MRCS) and ADB have been unfortunately restricted by very limited exchange of

²³ Pech S, 2010. Cambodian and Mekong Water Resources Governance, in Sato J (ed.) Transboundary Resources and environment in Mainland Southeast Asia, Institute for Advanced Studies on Asia, the University of Tokyo.

information and meetings between the two even though the 2000 Partnership Arrangement between them provides for a broader exchange.²³ The regular annual meeting took place a few times in 2000-2003, but never again perhaps due to the change in the MRCS senior management.¹

Common adherence by the Mekong countries to international environmental treaties and regional organizations should have generated common expectations and the acceptance among them of those key international water principles and norms. However, at present, the quality of interaction between these countries on sustainable water and related resources development has been minimal. Such a slow progress is mainly due to the fact that:

1. Most of the organizations and treaties mainly focus on trade, security and infrastructure development;
2. Most of the agreements are not strictly for the sustainable development of the Mekong River and other Mekong Region international rivers *per se*;
3. China is not a member of key natural resources regional organizations, such as, Mekong River Commission (MRC) and its 1995 Mekong Agreement; and
4. There is a lack of common or coordinated position among Mekong countries and perhaps lack of proper mechanisms for developing truly “national positions”. This issue will be examined in more detail in the following section.⁵

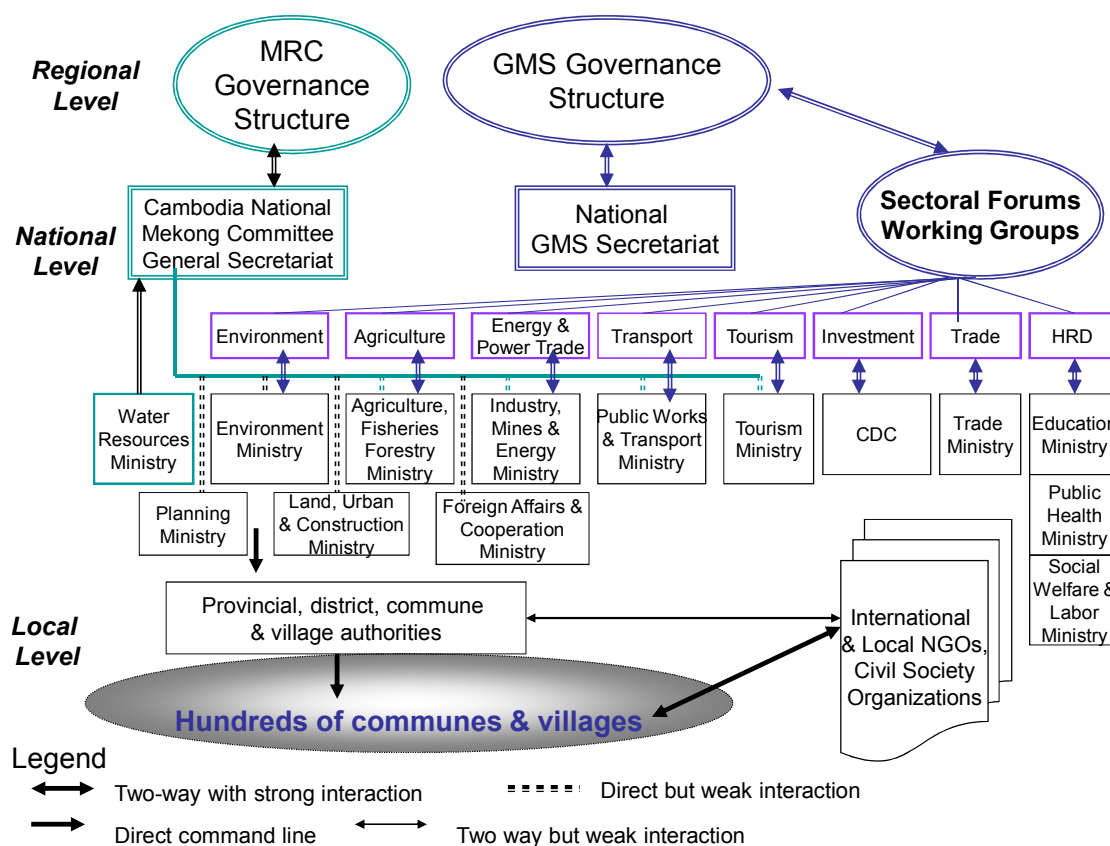
The challenge is how to manage and coordinate the ‘congestion’ of the Mekong-related regional initiatives and frameworks, as well as the access to and trust among users of the knowledge generated by each institution and entity. Among them, GMS and ASEAN Mekong programs have strong impacts (positive and negative) on the basin’s ecology and its communities and livelihoods. While the MRC is mandated by an international treaty to manage the Mekong Basin within its hydrological boundaries among its Member Countries, the GMS is the only regional forum in which all six Mekong riparian countries participate, and its geographical scope encompasses the whole of Yunnan, Myanmar, Laos, Thailand, Cambodia and Vietnam. The proliferation of Mekong-related regional initiatives and institutions continues.

2.2 ANALYSIS OF THE STATE OF THE NATIONAL INSTITUTIONS AND ORGANIZATIONS

The national institutional arrangement for the management of the Mekong Basin and LMB is rather complex and complicated, with certain rivalries, mismatches and overlaps.

National/central level: The regional congestion of Mekong initiatives and institutions also unfortunately leaves its marks on national institutional set-up. For example, the Mekong and Tonle Sap-related governance structure in Cambodia is highly compartmentalized and lacks a mechanism for feedback and coordination among many key ministries and committees (Figure 4).

Figure 4 Schematic illustration of a triad situation in the MRC and GMS connected relationships at national and local levels in Cambodia



(Source: Pech S, 2010. Cambodian and Mekong Water Resources Governance, in Sato J (ed.) Transboundary Resources and environment in Mainland Southeast Asia, Institute for Advanced Studies on Asia, the University of Tokyo).

At least on paper, the primary government agency coordinating natural resources management in the Mekong Basin and Tonle Sap is the Cambodian National Mekong Committee (CNMC), currently chaired by the Minister of Water Resources and Meteorology (MOWRAM), with membership of 17 other ministries. Externally, CNMC maintains a direct linkage only with MRC. It is tasked to assist and advise the government in all matters relating to water policy and strategy as well as management and development of the water and related natural resources of the Mekong River Basin that cover over 86 percent of the country. But the CNMC has to carry out these ambitious tasks of coordinating different and conflicting priorities, values and perceptions of its highly sectoral member ministries with extremely limited financial and human resources. Consequently, it has often complained about being by-passed or ignored.⁵

In all the Mekong countries, governments have assigned lead agencies the responsibility for coordinating ministerial inputs into the draft national negotiating positions. On many occasions, such integration has failed due to a number of reasons, including lack of proper coordination mechanism and political will, and in-fighting among agencies over their vested interests.¹ The lead ministries or agencies also lead the delegation to join the intergovernmental negotiation process. For example, in the MRC meetings, the delegations are usually headed and/or dominated by the officials from the National Mekong Committees.²⁴ As a result, the concerns and basic needs of all ministries and communities

²⁴ Hou, 2006 personal communication

are not properly articulated in the national “interests/position” at the regional policy making or planning.²⁵ To better understand why this synergy fails, the authors scrutinized Cambodia’s internal institutional dynamics more closely.

The detailed analysis found Cambodia’s focal relationship at all levels to be problematic. The national institutional arrangement for the management of the Mekong Basin was complex, and highly compartmentalized. Mechanism for feedback and coordination among many key Ministries and Committees was poor. Similar situation is believed to prevail in most of the Mekong countries.

Most of these Ministries and agencies in Cambodia have their offices at the provincial and district levels, which should have helped them to have a closer interaction with the local community whom they are supposed to service. But as shown in Figure 4, the interaction or communication between them was mainly top-down, rare or extremely ineffective. Hence, the chance of the community’s involvement in shaping or influencing MRC and GMS agenda was extremely limited or absent.¹ This poor interaction and participation was mainly due to lack of appropriate capacities for public participation, low level of mutual trust, and lack of confidence in the merits of coordination and integration.¹⁸

2.3 HYDROPOWER DEVELOPMENT, RESETTLEMENT, COMPENSATION AND ENVIRONMENTAL PROTECTION

Hydropower development is a burning topic in the area of water governance, due to its potential positive and negative impacts on the environment and people, and the use and allocation of water-related resources. The LMB countries have developed various institutional frameworks to screen, assess, manage and monitor hydropower development and impacts. These institutional frameworks to ensure sustainable hydropower development are subjected to various constraints in the form of unclear/conflicting responsibilities, weak legislative enforcement, limited staff, and poor financial and technical capacities. Factors that impede effective and sustainable water governance in the hydropower sector in Cambodia, Lao PDR and Vietnam are discussed in Sections 2.3.1 to 2.3.3 below. The analysis particularly focuses on the Environmental Impact Assessment (EIA) process, by which environmental and social considerations are integrated into project planning, its implementation, and some forms of monitoring.

2.3.1 Cambodia

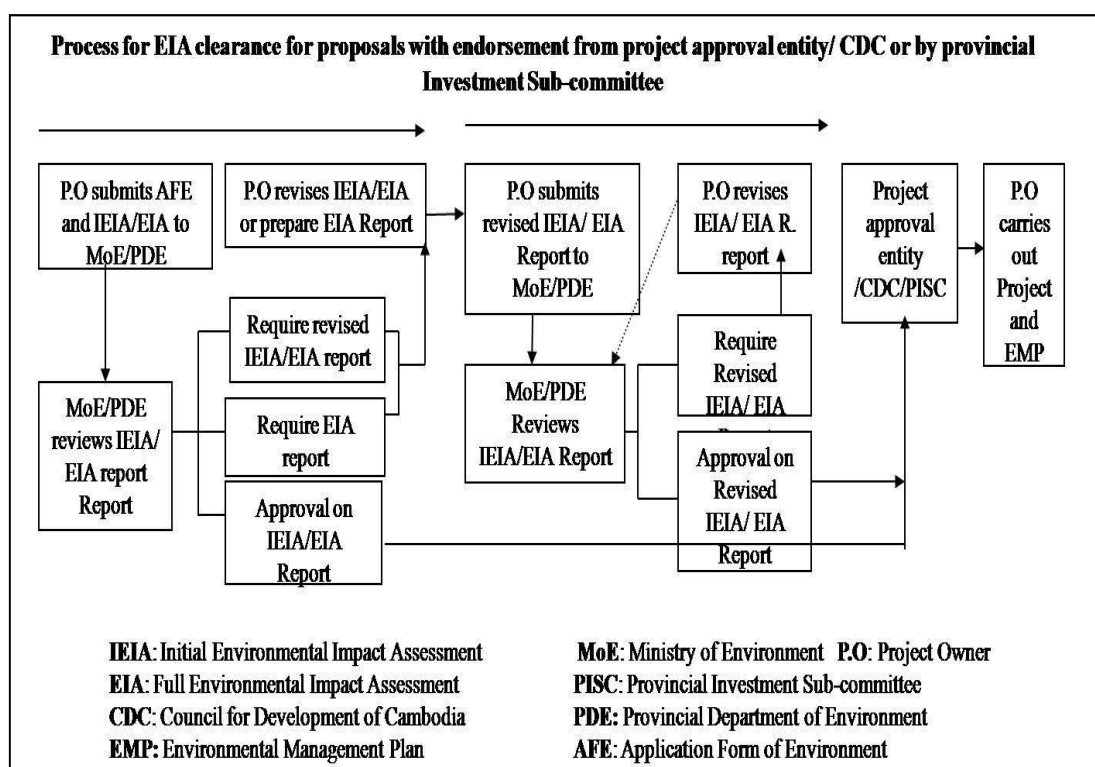
In Cambodia, the Ministry of Industry, Mines and Energy (MIME) is responsible for developing policies and strategic plans for the hydropower sector, in cooperation with multi-lateral development organizations (e.g. World Bank and ADB), and other national-level agencies. The Electricity Law of 2001 governs investments in the electricity sector, and defines roles and responsibilities of government agencies in implementing its provisions. Hydropower development is being advocated by the Cambodian Government to address the existing large gap in access to electricity. While only a few hydropower projects are operational in Cambodia, numerous projects have been proposed, particularly in its tributaries besides a few in the Mekong mainstream. This sector is developing rapidly to support economic growth in the country and the region. The Ministry of Environment (MOE) is responsible for the implementation of provisions under the Law on Environment Protection and Natural Resource Management 1996, which outlines the requirements for

²⁵ UNESCAP, 2003 Adhering to International Commitments, Module III, in **Virtual Conference “Integrating Environmental Consideration into Economic Policy-making process”**. United Nations Economic and Social Commission for Asia and the Pacific, Bangkok.

Environmental Impact Assessments (EIAs) of projects and activities. The initial EIA (IEIA) and EIA are prepared by the project proponents and submitted to the MOE for review and evaluation.

The EIA process and its Environmental Management and Monitoring Plan (EMMP) component are the primary mechanisms by which environmental sustainability and social equity are factored into the development planning process. In Cambodia, the use of IEIA and EIA to assess projects and activities only started recently. Thus, the current legal framework guiding the process remains under-developed, and suffers from the absence of detailed guidelines to implement the important stages of the process. Key challenges in implementing EIAs in the hydropower and water resource planning sector in Cambodia are summarized below:

Figure 5 The EIA Process in Cambodia



(Source: Declaration of General Guidelines for Developing Initial and Full Environmental Impact Assessment Reports, 2009)

- Responsibility for the preparation of an EIA falls on the project proponent, preventing a truly independent assessment of environmental and social impacts. Project developers must be required to comply with regional and national plans and policies, and should not be allowed to continually externalize costs to the environment and local communities²⁶;
- Capacity to prepare a credible and scientifically-sound EIA, and evaluate the quality of reports is limited in Cambodia. This limited capacity, combined with the lack of baseline environmental and social data and information undermines the quantification of impacts, and therefore mitigation and compensation arrangements for vulnerable ecosystems and populations. Therefore, there is an

²⁶ Pech, S., S.S. Im, M. Solieng, and H. Kimkong. 2010. Rapid Sustainability Assessment of Mekong Electricity Planning: Using Section 1 of the 2009 Hydropower Sustainability Assessment Protocol (HSAP): Cambodia Study, Mekong Program for Water Environment and Resilience (Phnom Penh).

urgent need to develop the capacity to carry out comprehensive impact and options assessments, taking into consideration, social, economic and ecological impacts. This assessment shall be based on credible scientific evidence, and local knowledge. It would also take into account the complexities and uncertainties inherent in the impact of hydropower development on the environment;

- *EIA Review:* According to the General Guidelines²⁷, time allocated for EIA review (30 days) is too short to properly evaluate the scale of impacts entailed in an EIA. The Department of EIA review is both constrained by staff capacity and size to manage multiple large EIAs within the stipulated time period, resulting in poor and hurried evaluation that results in no significant social or environmental benefits. Therefore, it is necessary to extend the review period and improve the organizational capacity to conduct a constructive review of the EIA reports.
- *Absence of meaningful consultation in power development planning:* Cambodia's power planning process occurs with little or no transparency and accountability to the public, and without meaningful consultation. Poor public consultation may be due to the absence of detailed law, regulations or guidelines to implement public participation; the fact that public involvement in decision making is not a mainstream practice; and the people are generally unaware of their rights of participation, as stipulated in the Constitution.
- *Consultations during the EIA process:* In general, the public consultation processes implemented during EIA projects have been very poor, and consultation is often limited to a few village leaders and NGOs. The quality of the consultation process should be improved; and meaningful deliberations and discussions aimed at developing well informed opinions, in which participants revise preferences in light of discussion and new information, as well as transparency and accountability in the decision-making process should be promoted and enforced.
- *Social Impact Assessment (SIA), Resettlement and Compensation:* The process of evaluating social issues relevant to projects in Cambodia requires significant improvement. Currently, provisions for SIA, resettlement and compensation of affected communities are absent in the legal framework for EIA. Clear guidelines need to be formulated to assess the socio-economic impacts of dams, particularly on rural communities, given their strong dependence on natural resources such as fisheries, and non-timber forest products (NTFPs). This will help to better define resettlement action plans (RAP) and compensation rates that are based on proper quantification of impacts.
- *Monitoring and Management:* While provisions and responsibilities for monitoring, mitigation and management of environmental impacts are stipulated in the current regulation, monitoring and enforcement is generally weak and non-existent in Cambodia.²⁸ Implementation of the environmental management plan (EMP) suffers from the general lack of financial resources to cover the costs of mitigation measures outlined in the project.

²⁷ Article 13, The Declaration on General Guidelines for Developing Initial and Full Environmental Impact Assessment Reports, 2009.

²⁸ Suhardiman, A. de Silva, S. Carew-Reid, J. (2011). Policy Review and Institutional Analysis of the Hydropower sector in Lao PDR, Cambodia and Vietnam. Mekong (MK1) project on optimizing reservoir management for livelihoods, Challenge Program for Water and Food

- In Cambodia, the process leading to a comprehensive understanding of environmental and social issues and risks relevant to potential energy/water sector projects has room for much improvement. This could be done through the adoption of modern environmental planning approaches beyond the use of EIAs alone, such as, SEA, CIA, RAPs (resettlement action plans) and Livelihood Restoration Plans (LRPs). These tools should be implemented before major project decisions are made, at the early stage of the planning cycle. Mechanisms should also be created to deal with transboundary concerns, conflict resolution, and compensation.

In addition to the gaps and weaknesses in the EIA process, criteria for selection of companies to invest in infrastructure projects in Cambodia remain unclear. Investment decisions seem to be driven by political agendas of key authority figures, who overrule any technical considerations from the EIA process. Detailed information regarding sources of financing for projects, as well as contractual agreements between the Government and project developers remain undisclosed to the public. Therefore, even if the inconsistencies in the legal framework for project evaluation and selection through EIA are removed, the effectiveness of the decision making processes in ensuring sustainable outcomes in a context where the final project decisions are made by elites driven by other political agendas, is questionable.²⁹

2.3.2 Lao PDR

With an internal untapped hydropower potential of 18,000 MW, the Government of Lao PDR is intensively promoting the development of hydroelectric power as a mechanism for economic growth. The government perceives that the hydropower sector provides the most promising means to address the growing energy demand, both domestically and regionally, and plans to develop the country's major watersheds, including the Nam Ngum, Nam Ou, Nam Theun Hinboun, Xebangfai and the Mekong mainstream. A large number of private sector investors from China, Thailand, Vietnam, Russia and Malaysia have contributed to the hydropower push in the country, and a number of Chinese companies are already in the phase of feasibility studies. While the development of hydropower presents potentially rich economic prospects for the country, it will be associated with significant social and environmental costs, downstream in Lao PDR, and neighboring countries.

Law on Electricity (1997, updated 2010) is the key piece of legislation that determines production and distribution of electricity, with an emphasis on hydropower and its administration. It lays out the rights and duties of government agencies responsible for electricity sector administration and inspection, as well as obligations of producers, suppliers and consumers in terms of service provisions. The law however, does not make reference to the construction of electricity infrastructure and its potential impacts on the environment and affected people. It also doesn't link energy projects to the EIA process (including public participation, EMP, resettlement and compensation, etc.). The law promotes private/foreign investment in hydropower development, under the leadership of the Ministry of Energy and Mines (MEM).

²⁹ Foran T., Wong T. and Kelley S. 2010. Mekong hydropower development - a review of governance and sustainability challenges. M-POWER Research Network. Final Draft. Pp. 68. http://www.mpowernetwork.org/Knowledge_Bank/Key_Reports/PDF/Research_Reports/Foran_Wong_Kelley_2010.pdf

The National Policy on Environmental and Social Sustainability of the Hydropower Sector adopted in 2007 applies to all large hydropower projects (greater than 50 MW or inundating more than 10,000 hectares of land), which are required to carry out a full EIA and an EMP, in accordance with the Environmental Protection Law (EPL) 1999. Moving forward from the Law on Electricity, the Policy identifies EIA as an integral part of sustainable hydropower development, and recognizes the need for disclosure of project reports, environmental assessment, mitigation and monitoring reports, and for carrying out public consultation. However, the Policy does not lay out a clear institutional arrangement for implementation of sustainability tasks, as well as for coordination between different sectoral agencies to optimize economic, environmental and social benefits. Furthermore, implementation of this Policy lies in the hands of WREA/MONRE, and not of MEM, as the key actor in hydropower.

The EPL 1999 defines the EIA process, as well as environmental management and monitoring agencies and their rights and duties (Figure 6). However, the law is generally applicable to all development/infrastructure projects, and does not include a specific section/clause concerning potential impacts and measures for energy sector development. The law highlights important environmental issues that should be accounted for in the evaluation of development projects, but fails to provide the rationale for protecting the environment from a livelihoods perspective (sustained local access to natural resources for livelihoods and poverty reduction). The law also lacks a clear rationale and mechanism for coordination between MONRE and sectoral agencies responsible for development projects, and provides no incentive for sectoral ministries to protect the environment, or to benefit from coordination. The law provides a legal foundation for public participation in land, water and environmental management in the form of a request or claim. However, its successful implementation requires vertical institutional arrangement (from community level to the Central Government), as well as cross-sectoral coordination among the ministries concerned, which is currently lacking in Lao PDR.²⁸

The Decree on Environmental Impact Assessment (2010) outlines the EIA procedure, from the project identification stage to project operation, closure and EMMP and SMMP implementation, as well as the roles and responsibilities of MONRE/WREA, line agencies and local authorities concerned. Lao PDR faces multiple challenges in implementing the EIA procedure, as outlined below:

- The EIA process in the Lao PDR is comprehensive, but highly complicated. It takes a long time for report preparation, revision and approval processes. Therefore, EIA is perceived as an impediment to development, and many project owners attempt to bypass the process. It is necessary to mainstream the EIA process within ministries, an important step to understand and account for all internal and external costs of a project, and to ensure compliance of project owners;
- The EIA legislation requires relevant government agencies to formulate their sector-specific guidelines and screening criteria. However, only a handful of ministries have formulated specific guidelines (including electricity, roads, mining and industrial projects). Existence of multiple sectoral guidelines often confuses project owners as to which set of guidelines should be followed for inter-sectoral projects. This issue can be addressed through further clarifications to project owners regarding multi-sectoral projects, to avoid confusion;
- At present, Lao PDR does not have a system of certification to manage the qualifications of EIA consultants and practitioners. Consultants are required to register with the MONRE/WREA registration system, which alone does not

effectively control the quality of consultants. The system of certification requires further improvement, in terms of registering consultants with suitable qualifications and experience to conduct the nature of work required in an EIA;

- MONRE/WREA is responsible for the review of EIA, SIA and EMP and RAP documents. Most staff within MONRE are newly graduated and inexperienced, with limited knowledge and capacity to critically review detailed reports produced by experienced consultants. Technical training should be provided to MONRE staff to improve their understanding of procedures, methodologies and tools used in SIA and RAP, in particular, in order to mitigate impacts on local communities;
- Environmental units of line ministries are often understaffed and lack the capacity to implement EIA procedures for projects within their respective sector. The staff within these ministries have limited experience and background in environmental assessment, and subject matters related to environmental and social impacts of development projects. It is particularly important to strengthen the staff capacity to review proposals and concession contracts within the Department of Energy Promotion and Development (DEPD) and MEM, and their capacity to effectively screen the large number of projects being proposed over the next five to 10 years, particularly in hydropower and WSI development;
- The Decree on EIA requires the project proponents to evaluate the social impacts, and the mitigation and management of socio-economic impacts in the EMP, and to outline requirements for resettlement and compensation. However, the legislation does not elaborate on the institutional setup required to ensure effective management and monitoring of these impacts after the approval of the EIA;
- Once the EMPs have been approved according to the EA guidelines, government agencies at the provincial level are responsible for overseeing implementation to a large extent. Capacities of these agencies are constrained by the extremely limited technical, financial and managerial resources and expertise. Capacities must be enhanced, particularly in environmental and social issues;
- Responsibility for carrying out public participation lies with the project proponent during the initial environment evaluation (IEE) stage, and with MONRE/WREA during the EIA process. Consultation with the public for the most part, has been insufficient according to internationally accepted safeguard procedures.³⁰ Lack of involvement of domestic NGOs has significantly limited public participation in the EIA process. With the approval of the new NGO regulation in October 2009, there is room for NGOs and civil society groups to become empowered and provide valuable inputs to the decision-making process;
- Participation of project affected populations (particularly ethnic minority groups) must be ensured to prevent unaccounted socio-economic impacts at project localities. Consultation approaches must be designed to overcome the multitude of factors that impede their participation, such as, the low degree of integration of some ethnic minorities into the mainstream economy; lack of familiarity with development projects and their impacts; lack of political representation; and, the prevalence of poverty, illiteracy and language barriers among minority groups;³⁰

³⁰ World Bank (2004) "Lao PDR Hydropower Strategic Impact Assessment". NORPLAN. November, 2004.

Figure 6 Steps in Hydropower Power Concession Awards, Approval and Implementation and Monitoring Processes in Lao PDR.

Steps		Key Actors/ GoL Agencies
1	<p>Investment Proposal</p> <ul style="list-style-type: none"> • MPI: collects, accepts, registers & reviews investment proposal, in coordination with MEM on the technical and financial feasibility of the proposal • MEM: Assesses technical feasibility of proposal and ability of developer to carry out ESIA & raise private financing • PMO: endorses the investment proposal based on MPI and MEM recommendations. 	<p>MPI (DIP) MEM (DEPD + DOE) PMO/ Government</p>
2	<p>MOU (Feasibility Study)</p> <p>EIA (SIA/RAP/EMP)</p> <p>PDA</p> <ul style="list-style-type: none"> • MEM: Provides technical proposal • MPI (with technical back-up from MEM) Grants Memorandum of Understanding (MOU) to developer to carry out technical feasibility studies • WREA: Review Env. and Social Impact Assessment • MPI (with technical back up from MEM) Grants Development Agreement (PDA) - to give exclusive mandate to developer to negotiate power purchase with potential buyer. • PMO: endorses/approves the investment proposal based on MPI, MEM, WREA's proposed assessment and recommendation. 	<p>MPI (DL+DR) MEM (DEPD + DOE) EDL/LHEC MOF MONRE/WREA (SEIAD) PMO/ Government</p>
3	<p>Concession Agreement (CA)</p> <ul style="list-style-type: none"> • MPI & MEM: Participate in negotiation and draft Concession Agreement • MPI & MEM: Ensure harmonization with existing Agreements • MONRE/WREA: Ensure best proposal for Social and Environmental Impact • MPI: grant Concession Agreement, subject to Provincial Government, PMO/Government and National Assembly's Approval • BOT - Build-Own-Transfer is the common agreement type 	<p>MPI (DIP) MEM (DEPD) MONRE/WREA (SEIAD) MOF Province</p>
4	<p>Implementation</p> <ul style="list-style-type: none"> • Implementation mainly undertaken and led by Project Developers for both infrastructure and social and environmental components • Local Government provides overall support, sets up institution for resettlement and grievance processes, and monitoring of progress. • Other line ministries/agencies at the provincial and districts levels are mobilized or appointed to support the Project Developer in accordance with their work plan, some on an ad-hoc basis, particularly on the social component. • Central government provides overall oversight with occasional supervision and monitoring by relevant ministries/agencies. 	<p>Project Developer Local Government: (Province + District authority) Other line agencies at provincial & district levels: MEM, MAF, LNMA, MOH, MOES, MLSW, MICT, MPTC, LWU, LYU, LNFC)</p>
5	<p>Monitoring and Evaluation (M&E)</p> <ul style="list-style-type: none"> • MEM: Monitors projects under negotiation, construction, and operation • MONRE/WREA: Periodically monitors social and environmental compliance • Provinces and Districts: Regularly monitors the infrastructure development, social and environmental compliance, and other security matters in the project areas. 	<p>MEM (DEPD + DOE) MONRE/WREA (SEIAD) Province District Project Developers External (PE, others)</p>

- The Decree on Compensation and Resettlement of People Affected by Development Projects (2006) defines principles, rules and measures to mitigate social impacts, to compensate for damages from involuntary acquisition of land, or restriction of access to natural resources that affects livelihoods and income sources. Social and Environmental Impact Assessment Department (SEIAD) within MONRE is responsible for the implementation of this Decree. However, social development functions of MONRE (as a mainly environment and natural resource based agency) are not widely recognized within the government, weakening its mandate and authority to implement and monitor social impacts. The government has not identified a ministry or ministries that will take full responsibility for the social development component of projects. The government has established Resettlement Committees (RC) and Resettlement Management Units (RMU) at the Provincial and District levels for major dam projects. These regulations have given project owners a primary role in developing and implementing resettlement action plans (RAP), which represents a conflict of interest in identifying adverse impacts, formulating mitigation and monitoring measures and resettlement plans, and properly implementing them. Clarification of responsibilities for resettlement must be allocated to MONRE or other capable government institutions, to ensure that project proponents do not downplay or overlook negative impacts of construction and operation to minimize the cost of resettlement. Also, an effective mechanism should be established by the government to monitor the implementation of RAP and compensation measures by project owners; and
- The Government of Lao PDR adopted requirements for Strategic Environmental Assessment into its EPL in 2010. This represents a significant move forward in assessing environmental impacts and risks from energy projects. However, SEA needs to be properly institutionalized and capacities must be developed, especially within MONRE and MEM.

2.3.3 Vietnam

Vietnam developed about 50 percent of its technical and economic potential hydropower capacity by 2010. By 2025, this is expected to increase to 83 percent. Vietnam has a relatively small hydropower potential (a maximum of about 85,000 GWh a year), but it is projected that by 2025, it will be the country making the most of its hydropower. The government's efforts to increase the country's hydropower capacity are evident from the Decision 110/2007/QD-TTg Approving the Planning on National Electricity Development in the 2005-2015 period with a vision to 2025 (dated July 18, 2007) and Ministerial Decision 3454/QD-BCN Approving the Planning on National Small Hydropower Development, dated October, 2005.

The Ministry of Industry and Trade's (MOIT) National Energy Policy of Vietnam focuses on the development of energy infrastructure and enhancement of long-term energy supply in Vietnam; development of energy in consideration of the environment; improvement of energy efficiency; and enhancement of international cooperation in energy development. The National Energy Policy is implemented by the Electricity Law of 2005, and the Law on Environmental Protection 2005. The Electricity Law regulates power sector planning and investment, electricity savings, market development, and defines rights and obligations of organizations and agencies. It authorizes the MOIT to administer all power sector activities, and the Provincial People's Committees (PPCs) to manage the sector within their geographic jurisdiction. It also establishes the Electricity Regulatory Authority of Vietnam (ERAV) under MOIT to set electricity prices, facilitate investment, encourage savings and protect the rights and benefits of electricity providers and consumers.

Vietnam has a good legal framework and procedures for electricity and hydropower development (Figure 7). The National Power Development Plan is revised every five years in order to update and balance energy production and demand. Over last decades, the country has been focusing on maximizing the potential of hydropower development and diversification of other energy sources.³¹

The Law on Environmental Protection (LEP) 2005 is administered by the Ministry of Natural Resources and Environment (MONRE), and outlines regulations for environmental protection and management. Environmental and social impacts of development projects and programs are evaluated under EIA and Strategic Environmental Assessment processes. An EIA is required to be undertaken by hydropower project owners (EVN (Electricity of Vietnam)/private sector investors or others) under the Law. For nationally important projects to be approved by the Central Government, MONRE organizes an Environmental Appraisal Committee to review EIA reports. For medium to large projects to be approved by MOIT, the agency itself organizes an EIA review team. Similarly, DONRE or DOIT organize EIA review teams for small projects to be approved by PPCs. MONRE has issued EIA guidelines for hydropower projects.

Vietnam has quite a comprehensive framework for energy and hydropower development and EIA implementation, review and approval. Legal documents relating to the investment and construction are also sufficient and clearly promulgated and published on the website of Government and related Ministries. Stakeholders, such as developers, administrative agencies (Minister/sector, local authorities) can review and download relevant documents from the government websites. Government agencies concerned (ministries, sectors, local governments) are expected to understand their respective roles in the investment decision-making process of any hydropower project or hydropower development plan.³¹

Nevertheless, the EIA process still faces various constraints, and there is significant room for improvement, as outlined below:

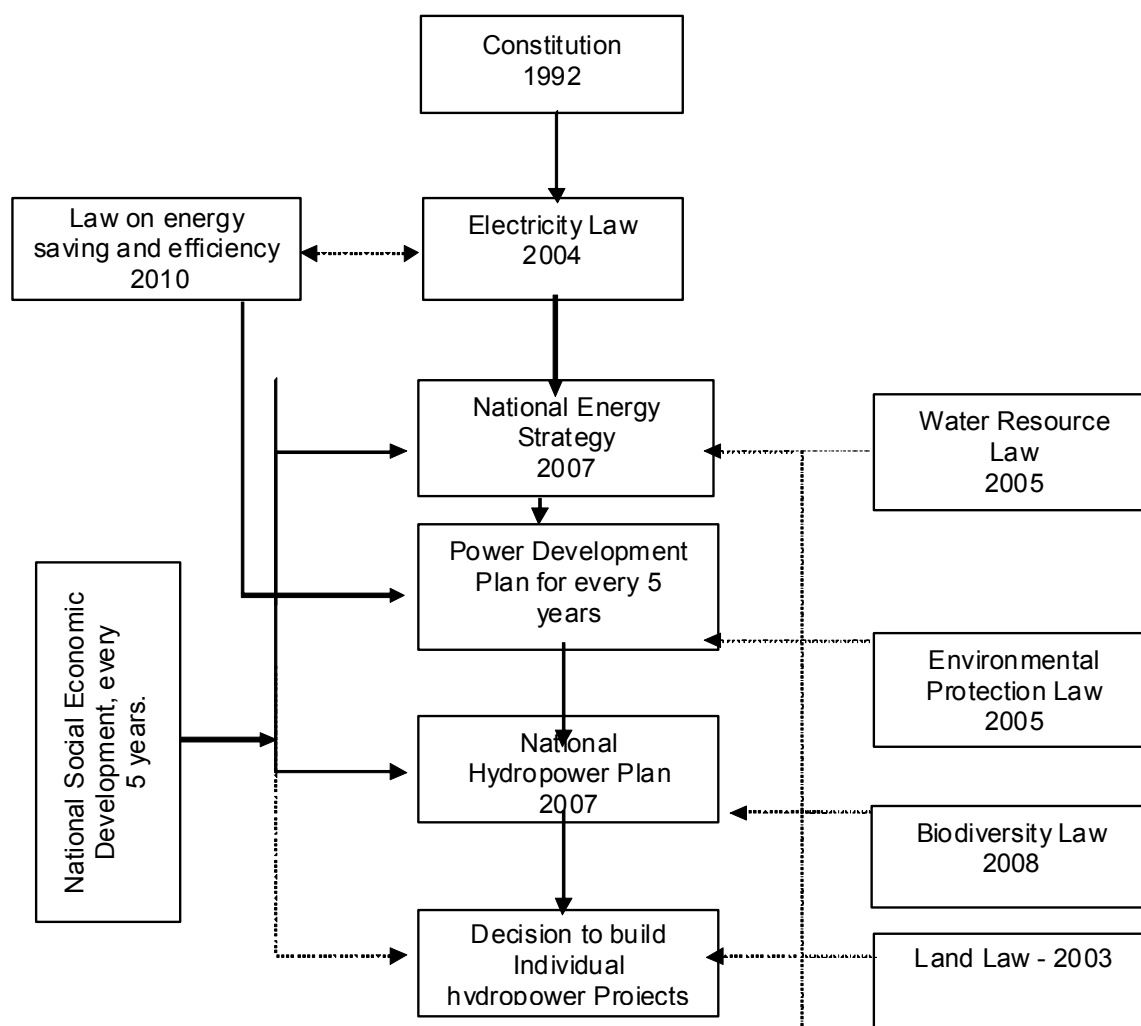
- There is poor integrated management and coordination between the energy and environmental sectors and other sectors of the economy, particularly during the EIA process. There is a dire need for improved multi-sectoral collaborative planning;
- Vietnam is the only LMB country with an operational SEA system in the energy sector. ADB and Stockholm Environmental Institute (SEI), in cooperation with MOIT, set up a systematic SEA for National Hydropower Planning (NHP) in 2008-2009 after researching most of the environmental issues of the country, such as, CO₂ emissions, impacts on biodiversity, forest, etc. The effectiveness and utility of the SEA for NHP was low because the EIA of its component projects were implemented before the SEA was conducted.³² An SEA for PDP VI provided options to mitigate the negative impacts and enhance positive opportunities with specific measures. This framework enables developers such as EVN to foresee the needs

³¹ Tu, D.T., L.T.T. Quynh, P.Q. Tu, and B.T. Sinh. 2010. Rapid Sustainability of Mekong Electricity Planning – Using Section 1 of the 2009 Hydropower Sustainability Assessment Protocol (HSAP): Viet Nam Case Study, Mekong Program for Water Environment and Resilience, Hanoi.

³² ADB and SEI, 2008, Strategic Environmental Assessment for Sustainable Hydropower Development in Viet Nam Policy Summary July 2008, accessed online at <http://www.gms-eoc.org/CEP/Comp1/docs/Vietnam/Hydropower/PolicySummary.pdf>

for mitigation of potential political risks before deciding to invest in hydropower projects.^{31,33}

Figure 7 Legal Framework for Energy and Hydropower Development in Vietnam³¹



- SEA practice is still a novelty in Vietnam; therefore it has faced several difficulties, particularly as the allocated budget for it is extremely low (approximately 7 percent of the total planning cost). This budget makes it difficult to organize an effective and comprehensive SEA (interview with head of IE and MOIT). The SEA for PDP VI was not carried out on the ground that the consultancy firms had experience and expertise (interview with head of IE on 17 May 2010).
- As social issues were integrated into the environmental assessment report, consultation on social impacts, particularly with affected communities, was not undertaken well. However, the SEA for NHP and some recent projects such as Trung Son (funded by the World Bank) has improved in this regard³²;
- Sectoral agencies responsible for implementing the EIA process are constrained in environmental management and monitoring by paucity of budget, staffing and

³³ Institute of Energy. 2004. Development strategy for power generation during the period 2004-2010 and orientation toward 2020

technical capacity to implement, enforce and oversee environmental management and mitigation measures set out in the EIA and Environmental Protection Commitments.

- Inclusion of public opinion into the EIA reports is a requirement under the LEP 2005. However, public participation under the EIA process is still poor. The general public is largely unaware of EIA, and has little knowledge about the EIA comment and review period, or access to locations where the report can be lodged. Many affected persons (particularly ethnic minorities) lack required technical knowledge and written language skills to provide comments.³⁴ It is therefore necessary to establish effective formal consultative mechanisms to ensure meaningful participation of stakeholders, both within the country in Vietnam, as well as in the neighboring countries, for dams with transboundary impacts.
- At the same time, there are good examples of stakeholder consultation in a few recent projects implemented by EVN (with funding from WB or ADB), including Song Bung 4 or Trung Son Project, where consultation was undertaken seriously and systematically. Directly affected people, civil society organizations and environment experts were involved in research and in raising opinions. Lessons learned from these projects should be applied to improve the consultation process for future projects, and to develop capacities of implementing organizations.
- Under the LEP 2005, investors must submit Environmental Protection Commitments (EPCs) to the PPCs. District/Commune-level People's Committees are required to monitor the implementation of these commitments. However, the systematic application of EPCs and estimation of appropriate levels of funding is yet to take place. The process remains poorly defined and implemented. Improvement of this process requires developing capacities of local authorities, and clear designation of an institution to monitor mitigation, monitoring and reporting practices;
- Little consideration has been given to the hydropower reservoirs for multi-purpose use and regulatory controls, which require significant public sector investment. Vietnam is in need of a functional process for considering, evaluating and providing multiple benefits from hydropower reservoirs to a variety of sectors;
- Problems associated with single-use focused development are likely to intensify with increased involvement of the private sector, driven by a competitive electricity market. The Government is slowly separating its operating and regulatory functions to create a market-based electricity economy. However, a strong regulatory environment, with clear, well-communicated processes and rules that apply to both government and non-government operators is required to ensure sustainable development;
- Consideration of social issues and risks of hydropower is crucial and needs to be implemented with a range of stakeholders. In Vietnam, SIA is seen as a part of the EIA process. The analysis of social impact in SEA and EIA reports is considered a "formality", and is generally kept short and simple. There is often difficulty in identifying project-affected communities, need for resettlement, labor and workforce capacity (need for capacity development, and/or bringing in external

³⁴ Doberstein, Brent. 2003. "Environmental Capacity Building in a Transitional Economy: the Emergence of EIA capacity in Vietnam." *Impact Assessment and Project Appraisal*. Vol. 21, No. 1, pp 25-41.

workers), as well as safety, public health and cultural heritage issues. This has implications for planning and management of social issues and risks. Therefore, it is important to strengthen the SIA component of EIA and SEA, and develop the capacities of the organizations involved to conduct a comprehensive assessment; and

- Theoretically, resettlement and compensation of project-affected persons have been acknowledged as a priority in Vietnam. In a workshop on reviewing resettlement in hydropower projects during the past 15 years, both the Government and the National Assembly concluded that resettlement projects had not met the expected objectives.³⁵ Compensation for people whose land is acquired by the Government is regulated under the Land Law 1993 and the Decree No. 197 (2004) Regarding Compensation, Assistance, and Resettlement where Land is Recovered by the State. Current regulations do not require foreign investors to be responsible for all financial costs of mitigating socio-economic impacts incurred by projects in the long term. Investor responsibilities for compensation and assistance cease after the completion of resettlement activities, and the remaining financial and administration responsibilities are transferred to the local government or the resettled community itself. Decentralization of administrative responsibilities to local authorities has resulted in inadequate budgets and mechanisms to provide long-term support to communities. Improvements in the regulatory environment for resettlement and compensation must ensure that livelihoods of affected communities are made sustainable, and that necessary technical and financial capacities of local authorities are enhanced to enable this.

2.4 WATER RESOURCES MANAGEMENT AND IRRIGATION

2.4.1 Cambodia

The overall management of water resources in Cambodia is the responsibility of the Ministry of Water Resources and Meteorology (MOWRAM). Water resource management is governed by the National Water Resource Policy (2004), and the Law on Water Resource Management 2007, which calls for water and water resources to be developed and managed, using an integrated water resource management approach.

The irrigation sector is the responsibility of the Department of Irrigation and Drainage of the Ministry of Agriculture, Forestry and Fisheries (MAFF). MAFF, along with the Ministry of Rural Development (MRD), the Ministry of Environment (MOE), and the Ministry of Economy and Finance (MEF), as well as provincial and district-level Departments of Irrigation, Commune Development Councils and the Village Development Committees are also involved in decision-making in irrigation and water use. Cambodia has issued several laws and regulations to support decentralization of irrigation management, and transfer of responsibilities to the local farmers. The Circular on the Implementation of Policy for Sustainable Irrigation Systems (1999) recognized the Farmer Water User Committees (FWUC) as a legal body, with the right to make rules and enforce sanctions. The FWUC participates in all aspects of decision-making, development, rehabilitation and improvement, maintenance, and/or expansion of irrigation systems, and in arranging for water delivery to water users in an equitable manner, with technical support from

³⁵ MARD (2004). National workshop on sharing experiences on compensation and resettlement in the hydropower and irrigation projects. Workshop proceeding, Hanoi.

MOWRAM. The MOWRAM Policy for Sustainability of Operation and Maintenance of Irrigation Systems 2000 supported further decentralization of irrigation systems in Cambodia by increasing the farmers' participation in decision making, and building the capacity of FWUCs to increase awareness among farmers and encourage donors to invest in participatory irrigation systems. Furthermore, the Participatory Irrigation Management and Development (PIMD) 2000 policy was developed in order to improve coordination among water users, FWUCs and the government, and to encourage farmers to manage their own irrigation systems.³⁶

The irrigation sector in Cambodia is underdeveloped, and about 80 percent of the cultivated land is dependent on rain-fed irrigation. CEDAC (an M-POWER partner organization) has been preparing an inventory of irrigation systems in selected 13 provinces around the Tonle Sap Lake to assess the irrigation situation in Cambodia. Of the total identified irrigation schemes, more than 50 percent were fully or partially dysfunctional and only 17 percent were operating in the dry season.³⁷ The overall rice production in the country remains low, as only 30 percent of the rice crop is irrigated³⁸. The IUCN Report³⁶ (2009) identified the following main challenges in the irrigation sector in Cambodia:

- Absence of strong rural institutions and support service providers to develop, maintain and operate irrigation systems;
- weak legal status of FWUC;
- limited participation of the farmers in planning and management of irrigation systems;
- non-approval of water rights;
- unclear rights, roles, and responsibilities of the state and the users; and,
- limited awareness and understanding of water resource management policies and laws among government officials and stakeholders.

Though the recent water resource management policies aim to strengthen sustainable irrigation systems and the role of FWUCs in water resource management and allocation, greater coordination and consistency is required to implement these provisions. While the National Water Resources Policy (2004) calls for better river basin management and development, it does not outline an institutional structure to implement these provisions. It calls for a National Water Resources Plan, which has not been prepared to date. Similarly, the Law on Water Resource Management (2007), emphasizes the IWRM (Integrated Water Resources Management) approach, but does not establish an institutional framework to implement IWRM practices.²⁸

Therefore, improved governance in the irrigation and water allocation sector requires greater consistency in planning and coordination; identification of institutional arrangements for implementation of key water laws and policies, and the clarification of rights and responsibilities of government agencies, FWUCs and water users; and, an

³⁶ S. Turner, G. Pangare, and R.J. Mather (2009), eds. *Water Governance: A situational analysis of Cambodia, Lao PDR and Viet Nam*. Mekong Region Water Dialogue Publication No. 2, Gland, Switzerland: IUCN. 32 pp.

³⁷ Lebel L, Bastakoti RC, Daniel R (eds) (2010). *CPWF Project Report. Enhancing Multi-Scale Mekong Water Governance*. Project Number PN 50. CGIAR Challenge Program on Water and Food.

³⁸ Veng Sakhon, (2007). *Irrigation Development and Management in Cambodia: A Presentation on the Occasion of the First Cambodian Development Cooperation Forum held at Council for the Development of Cambodia from 19th to 20th June 2007*, Ministry of Water Resource and Meteorology, Phnom Penh, Cambodia.

increase in the participation of farmers in irrigation development and management by strengthening the legal status and role of FWUCs.

2.4.2 Lao PDR

In Lao PDR, agriculture is the most important water-use sector of the economy, constituting the income of 83 percent of the population. But less than 4 percent of the suitable land area has been cultivated to date. Over the last two decades, irrigated agriculture has expanded significantly in the country, and has been recognized in the National Poverty Eradication Program in 2003. Many existing irrigation facilities have been degraded for want of funding to maintain foreign-funded infrastructure. In response to this problem, the National Socio-economic Development Plan (NSDP) 2006 – 2010 initiated the rehabilitation of degraded irrigation schemes in remote areas of the country. Given its high economic importance, development of multi-purpose hydropower reservoirs remains an important consideration for Lao PDR, to enhance socio-economic benefits to the people, and drive economic growth.

Water resources in Lao PDR are governed by the Law on Water and Water Resources (1996). The Law places the responsibility of water resource use on relevant sectoral ministries for their respective sectoral development activities. This creates a significant issue of conflict over water use and a need for extensive and effective coordination among sectoral agencies in water resources planning. Addressing the weakness in delegation of water resources policy and regulatory functions, the National Water Resources Profile (2008), stated that the existing *“functions may conflict with the water development and service delivery roles of these ministries and their agencies. The LWWR also appears to have gaps with respect to such things as information management, the coordination of water resources and environment management.”*

The Water Resources and Environment Administration (WREA) was established to respond to the existing policy gaps in water resource management, to strengthen IWRM in Lao PDR, to improve data and information management, and to improve cross-sectoral coordination among ministries in water resource planning. However, the establishment of WREA did not address the problem of coordination among ministries as it did not have the ministerial function or authority to enforce defined regulations upon other ministries, particularly where sector ministries did not have an incentive to comply with these rules, which conflicted with their sector development priorities. While WREA’s elevation to ministerial status (MONRE) in 2011 provides it with greater regulatory and enforcement authority, its mandate itself may not be sufficient to address the current problem of inter-ministerial coordination in water resource planning without the support of sectoral ministries, who are driven by their respective sector development interests.

The Draft National Water Resources Policy (2010) aims to guide government agencies and private sector institutions investing in the water sector to carry out well-coordinated development and management. The NWRP bases its directions for coordinated water-sector development upon the rationale that sector development agencies can potentially benefit from coordination. The NWRP identifies WREA (now MONRE), Lao National Mekong Committee (LNMC), and River Basin Committees (RBCs) as responsible for water resources coordination, but it does not provide a mechanism for implementing and enforcing coordination among sector ministries. The Policy recognizes the need to strengthen the participation of stakeholders, including local populations, in water resources planning and management but it does not elaborate on ways to achieve this participation.

Water resource planning and management in Lao PDR is therefore fragmented, with no official authority or organizational structure to facilitate coordination among different water users, where cross-sectoral ministries represent alternate development priorities.

2.4.3 Vietnam

The Law on Water Resources (LWR) 1998 is the primary law for water management in Vietnam, which includes in its scope surface water, rainwater, underground water and sea water. Mineral water and natural thermal water are, however, governed by the Law on Minerals, thereby posing a challenge to integrated water resources management. The LWR has provided for the creation of the National Water Resources Council (NWRC) and other river basin organizations (RBOs) in major basins, to harmonize water management and administration. The council provides a mechanism for planning and protection of water resources by licensing water users and granting permits for wastewater discharges. It also provides the means to monitor, evaluate, and enforce the Law.

The Law on Environmental Protection 2005 provides a framework for environmental protection activities in the water sector, with specific reference to protecting the riverine water environment. The NWRC has also been established by Law to advise the Government on water resources management. The Council is assisted by the Council Office located in MoNRE.

Water resources management in Vietnam is complex; functions and obligations are shared among various ministries and agencies, presenting various challenges in governing water resources in an integrated manner. Ministries with various functions in water governance include MONRE, Ministry of Agriculture and Rural Development (MARD), Ministry of Planning and Investment (MPI), Ministry of Trading and Industry (MOTI), Ministry of Science and Technology (MOST), Ministry of Construction (MOC), Ministry of Transport (MOT), and Ministry of Finance (MOF). Water resources are also managed by PPCs at the provincial level, and RBOs at the basin-level.

As one of the world's leading exporters of rice, about 82 percent of the total water use in Vietnam is for irrigation. With over 75 large irrigation schemes, 800 medium-large dams, over 3,500 reservoirs with a capacity of over 1 million cubic meters, 5000 big sluices, over 2000 pumping stations, and thousands of small water works, Irrigation has been intensively developed in the country. At present, 3.3 million hectares of land in the country is fully irrigated and over 1 million hectares are partially irrigated. Irrigation water has been generally provided to communities free of charge. Over the years, irrigation systems have become increasingly less efficient due to lack of sustainable financing for maintenance and repair. State budgets are inadequate to finance major rehabilitation requirements, while provincial budgets are even less capable of such allocations. In the coming decades, agricultural growth is expected to outpace growth in industrial and service sectors, and will continue to play a prominent role in the economy. However, the institutional arrangements and legal and policy frameworks are fraught with gaps, inconsistencies, overlaps and duplications in implementation, resulting in uncertainties and confusion in responsibilities and functions of relevant organizations in the management of water resources and irrigation.

The water sector in Vietnam is characterized by a fragmented policy and institutional framework, with a wide range of policies affecting the sector and a history of poor coordination among ministries such as MARD, MONRE, the Ministry of Construction, the Ministry of Trading and Industry, and the Ministry of Health, and their provincial departments, PPCs and local administrative authorities. MARD is the key agency

responsible for development and management of the irrigation sector to serve agricultural production, as well as planning for multi-purpose use of reservoirs. However, the state management of water resources is a function of MONRE. The management of the reservoirs, including the exploitation of reservoirs for multiple purposes and water allocation to protect the downstream environment, is undertaken by MARD and DARD. MoNRE, which should ideally be doing this, only acts to advise or comment on operations and regulation to achieve the desired objectives. The upside of this situation is that it creates favorable conditions for MARD to supply water in time for agriculture.

Even in the irrigation system, the right to issue licenses for water use and wastewater discharge is allocated to DARD in some provinces, and to DONRE in others (as decided by the provincial people's committee). Therefore, in some cases, irrigated water has damaged paddies due to licensing authorities not understanding the status of water in the canals.

The water sector in Vietnam also suffers from conflicting and uncoordinated uses. There is little planning and coordination between multi-sectoral use of water resources, which leads to unintended and unaccounted impacts of one sector on another (e.g. impacts of hydropower on fisheries and navigation sectors). At present, there is no formal mechanism for the assessment of cross-sectoral impacts on water resources and related environments, and on socio-economic systems that they support.

As in many countries, water and water services in Vietnam are currently underpriced. The pricing policy is neither efficient nor equitable, and lately the government has eliminated the irrigation fee. Where water is abundant, the current pricing policy results in inefficient use by those who have had access to cheap water, such as those in agriculture, domestic use and industries. It has also led to a dearth of financial resources as instead of being self-financing, the water sector is becoming dependent on subsidies. Therefore, more investment in the water sector – either from public or private sources – must go hand-in-hand with the recognition that discharge pricing is an essential instrument to enhance the sustainability of the resource, to expand services, including operation and maintenance of water utilities and irrigation systems, and to maintain water resource management functions. Little improvement will take place in the water-related sectors if governments do not develop socially acceptable pricing and tariff policies.

Finally, with an increase in private sector investment and operation, it's become imperative to encourage the participation and consultation of stakeholders to enable the Government to respond to the needs of the water sector. However, at this stage, very few consultative mechanisms exist in Vietnam. Awareness of water sector management issues (particularly across sectors) is limited in the Central Government, Ministries, Departments and PPCs. Staff within these agencies have a limited understanding of, and practical training in resource allocation, infrastructure development and environmental protection. There is limited capacity within agencies to critically review EIAs and sector development plans related to water resource management. Capacity building is urgently required to allow the government to transition from playing the role of a primary developer and operator, to that of a planner and regulator.

2.5 FISHERIES

2.5.1 Cambodia

The extremely rich inland fisheries sector, particularly in the Mekong and Tonle Sap Rivers, is significant for food security and poverty alleviation in Cambodia. Over 80 percent of the population in Cambodia is dependent on the fish for its main source of dietary animal

protein³⁹; while the inland fisheries are worth an estimated USD 500,000 million a year.^{36,40} The fisheries sector in Cambodia is governed by the National Fisheries Law (2006), which sets out a comprehensive legal framework for fisheries management, including the roles and responsibilities of institutions, prohibition on fishing activities, establishment of Community Fisheries, fishing lots, and allocation of lots through an auction system. In addition, the Community Fisheries Sub-decree also outlines responsibilities for management of community fisheries in Cambodia. The Fishery Administration (FiA) under the Ministry of Agriculture, Forestry and Fisheries (MAFF) is the key institution responsible for the management of the fisheries sector, while the Community Fisheries Development Office (CFDO) and provincial and district Fisheries Administrations under it also complement its role.

Reducing poverty among the fishing populations is one of the key development priorities of Cambodia, given that a large proportion of the population is dependent on the fishery sector for its livelihood. The Fishery Reforms of 2004 aim to enhance access to fishery resources among the rural poor by facilitating local community participation in fishery planning and management and community-based development; releasing fish lots to the communities; expanding community-based fishing lots; and promoting aquaculture conservation. After the implementation of reforms in 2005, more than 440 community fisheries management mechanisms are in place throughout Cambodia.⁴¹ Approximately 538,522 ha of freshwater fishing grounds have been released for establishing fishing communities.³⁶ However, since this move, illegal fishing and conflicts have escalated in some areas, particularly due to poor management and governance resulting from corruption, poor coordination among state agencies, low stakeholder participation, and the absence of an effective enforcement mechanism.³⁶

Key challenges in fishery governance and management in Cambodia include^{28,36}:

- Inequitable access to fish and fishing areas: As the fishery sector is organized as a privatized fishing lot system, open access to fishing grounds has been restricted. A handful of private fishing lot owners have monopolized access to the best fishing areas, preventing local populations, particularly the rural poor, from gaining access to these resources.
- Due to corruption and lack of transparency, short-term over-exploitation of fishery resources and illegal fishing has been difficult to control.
- The commercial fishing lots system does not reflect the true value of the fishery, and therefore yields reduced revenues to the treasury.
- There is poor enforcement of fishing regulations due to poor institutional arrangements for managing fishing lots.

Improved governance of the fishery sector in Cambodia requires enhanced coordination between government agencies and private stakeholders, and improved mechanisms to enforce laws and regulations, and reduce corruption. Hydropower development in Cambodia and upstream neighboring countries along the Mekong River and its tributaries will adversely impact the fishery resources in Cambodia. Therefore, regional decision-

³⁹ MRC. 2010. State of the Basin Report. Mekong River Commission: Vientiane.

⁴⁰ This value, however, may be an underestimation of the true size of the fish catch, due to limitations in data collection.

⁴¹ University of Gothenburg. 2009. Cambodia Environmental and Climate Change Policy Brief. School of Business, Economics and Law.

making processes need to be improved to address transboundary impacts of upstream hydropower development.

2.5.2 Lao PDR

Similar to other parts of the Mekong River Basin, the fishery sector constitutes an important part of the Laotian economy, contributing 7-8 percent of the country's GDP. Fish is considered as the main food item of the rural Lao people, accounting for 42 percent of the animal protein consumed. Given its economic importance, recent government policy aims to encourage the growth of this sector for poverty alleviation in rural areas. However, the sector is faced with overexploitation of fish resources, degradation of important habitats, and adverse impacts of hydropower development.

Lao PDR has not enacted a separate fisheries legislation. Rules governing the fisheries sector in the country are spread over many laws and regulations. The sector is currently regulated under the Forestry Law (1996), while fishery-related provisions can also be found in the Agriculture Law (1998) and the Penal Law (1990). The Ministry of Agriculture and Forestry (MAF) is responsible for fisheries provisions under the Forestry Law, which recognizes the importance of forestry for water resources management and protection. However, the Government of Lao PDR is currently in the process of developing a Draft Fisheries Law (2009) with technical support from the Food and Agriculture Organization (FAO) of the United Nations.⁴²

The existing legal framework shows no mechanism of co-management in the fisheries sector in the Lao PDR. The Central Government has delegated the power of managing natural resources to the local administrations in line with the Local Administration Law 2003. However, management powers have not been transferred to any institution or group outside the government.

In the Draft Fisheries Law, the Government embraces a participatory approach to fishery management through the establishment of Fisheries Management Communities (FMCs), and development of village regulations and management plans. Assistance has been provided to local fisher groups to set up FMCs and fishery management plans at the village level as well as the reservoir level. The draft law provides a process for the establishment of FMCs, and clearly states that fishery management is the primary responsibility of the local authorities in close collaboration with local communities and fisher groups.⁴²

While local-level administration of fisheries and participation of local communities and fisher groups is recognized, the draft law is yet to be promulgated, and mechanisms to allow affected communities to participate in decision-making regarding the development of water-related infrastructure needs to be put in place.

2.5.3 Vietnam

The fishery sector is heavily promoted by the Government of Vietnam as a mechanism to alleviate poverty and hunger in the country. Fish contribute to approximately half of animal protein in the human diet in the country, with nearly 10 percent of the population drawing its main economic income from the sector.

⁴² Cacaud, P. and P. Latdavong. 2009. Legislative Review of Fisheries and Aquaculture in Lao PDR Food and Agriculture Organization of the United Nations (FAO), Bangkok, Thailand.

The Law on Fisheries (2003) was passed by the National Assembly on October 26, 2003. This law contains 62 Articles defining the legal framework for individuals and organizations fishing the land, islands, internal waters, territorial sea, exclusive economic zone, and continental shelf of Vietnam. The fisheries sector is not separate from water resources, as some articles of the Law regulate the protection of water species' ecosystems and the development of freshwater and seawater environments.

The responsibility to manage all fishery activities lies with MARD, which performs the functions of defining the total allowable catch and fishing capacity; protection measures relating to the marine environment and aquatic living resources; zoning, monitoring and research; and managing fishing permits.

The fisheries sector, particularly state fisheries' enterprises, is faced with multiple governance and management challenges, which include³⁶:

- State Fishery Enterprises are inefficient, resulting in relatively small returns on their investment. They also have poor environmental performance, particularly in wastewater management.
- There is a conflict in institutional functions, with MARD responsible for regulating the fisheries sector, and MONRE mandated with ensuring environmental protection and natural resource use.
- Limited understanding of environment management and conservation of fishery resources (including maintaining environmental performance and water quality).
- Insufficient information, research and capacity building in the fisheries sector; vocational training is limited and there is a major shortage of skilled local-level workers.
- Poor extension services in the aquaculture sector.

3.0 ASSESSMENT OF ORGANIZATIONAL CAPACITIES FOR WATER RESOURCE MANAGEMENT

3.1 INSTITUTIONAL MANDATES

All the LMB countries have institutionalized the legislative and administrative frameworks governing water resource management, allocation and development; however, their implementation and capacities of governing agencies differ from one country to another. While Vietnam has developed quite a comprehensive legal framework for hydropower and water sector development, Lao PDR and Cambodia lag behind. Their administrative systems are quite new and are still being developed. Effective implementation of laws, regulations and policies are constrained by the absence of detailed guidelines and procedures to guide their implementation, including a clear delineation of roles and responsibilities of key governing agencies, and conflicting interests of sector development agencies and project proponents.

The water sector in the three LMB countries is characterized by a fragmented legislative framework, with a wide range of policies affecting the sector and a history of poor coordination among key ministries. There is overlap and confusion in responsibilities, particularly among ministries responsible for agriculture and irrigation, energy development, and environmental protection, resulting in numerous inconsistencies. Laws on water resource management are often heavy on principles and policy provisions, which

are difficult to enforce. They are generally broadly worded, and fleshed out in subsequent implementing regulations.

Over the years, the LMB has seen an increased move toward the decentralization of responsibilities to provincial and local administrative levels. These agencies, however, have limited capacity to handle large and complex technical projects such as water resources planning, design and construction of new infrastructure, and improvement and rehabilitation of large hydraulic works. Consequently, implementation of legal provisions at the local level are weakened, and provinces are forced to invite central professional agencies to complete the work, or return projects to the central government for implementation.

As observed in hydropower development and implementation of EIA provisions in the three countries, the weak enforcement or absence of guidelines and procedures have resulted in stronger ministries and agencies over-ruling important social and environmental considerations in making investment decisions, and bypassing important steps such as public participation, environmental monitoring and management, and resettlement and compensation in the assessment of projects. While the importance of public/stakeholder participation has been recognized in most laws, policies and strategies, these countries need to draft and operationalize mechanisms to increase transparency and access to information in decision making besides promoting a general culture of stakeholder consultation and participation in policy formulation and decision-making.

Despite the establishment of provisions for environmental assessment and monitoring, all the three countries are trailing in the implementation of social impact assessment. Capacities to evaluate social impacts remain weak among government institutions and EIA consultants; and responsibilities for implementation, oversight and management of mitigation measures and resettlement and compensation actions are not clearly defined and delineated. Given the highly significant impacts that hydropower and water sector projects have on populations in the affected localities, it is urgent to develop effective mechanisms to properly assess social impacts, and improve planning for resettlement and long-term and sustainable restoration of livelihoods.

Recognizing the potential environmental and social impacts of hydropower development, governments of LMB countries have attempted to make proactive changes to improve the effectiveness of governance. For example, the National Assembly of Lao PDR approved the creation of the Ministry of Natural Resources and Environment (MONRE) in June 2011 to replace WREA, the key government agency earlier responsible for environmental and water resource management, which did not have Ministerial status to enforce regulations upon other, more powerful ministries. But it will take time for the new ministry (MONRE) to become fully operational, and solidify its mandates, functions, institutional arrangements, staff, and other administrative matters.

A number of River Basin Committees (RBCs) or River Basin Organizations have been established in the LMB countries, with a mandate for full cross-sectoral coordination, planning, and implementation of IWRM at the basin-level. As they are all new, they are still in the process of building their institutional capacities. These organizations are limited in experience and technical expertise to address issues related to IWRM, and have not effectively involved communities in water resource planning. They also have poorly developed links to wider national poverty reduction, economic development, and institutional reform policies and processes due to which the full developmental impacts of water management are often not realized.

3.2 SCIENCE AND TECHNOLOGY

A significant factor contributing to an organization's capacity is infrastructure, particularly technology in the form of equipment, information systems, hardware/software, and communication systems. This infrastructure enables public agencies to perform their tasks efficiently and effectively besides facilitating communication, coordination, and dissemination of critical information.

Availability of state-of-the-art technologies to improve irrigation, fisheries and hydropower sectors in the LMB countries, particularly in the Lao PDR and Cambodia, is constrained by a multitude of factors. Most government agencies lack financial resources to access new production technologies, or improved methodologies. While most government staff are educated, and have the knowledge and capacity to apply new scientific knowledge and methodologies, they do not receive sufficient opportunities to practice their knowledge. Investments in the hydropower sector are primarily made and managed by foreign investors (donors and private sector investors), providing little opportunity for local staff to receive training and enhance their capacities.

According to interviews conducted during the MK4 Output 1 component with relevant government agencies in Lao PDR, it was found that technological resources (i.e. hardware, software, internet access, and other equipment) are highly inadequate, particularly at the local level (villages, districts, and provinces) where implementation takes place. Most modern equipment has been acquired through donors or development partners, not through government expenditure. At the village level, most documents are handwritten. Some agencies in rural areas expressed concern over the lack of proper building and office spaces for working.

Given its greater economic progress and development, Vietnam is making increasing investments in science and technology. It is strengthening and developing its technological and scientific agencies besides promoting research. The irrigation sector, in particular, has witnessed the use of new technologies, such as, geo-informatics to evaluate water resources and calculate water balance, ensure the stability of hydraulic structures; to make economic calculations, drawings, project documents and data banks; and to measure and draw topographical and geological maps. There is tremendous improvement in observation, measuring networks, and utilization of software for management and operation of irrigation systems and hydropower reservoirs. Despite this progress, the scientific knowledge is still not up to date. More funds need to be allocated toward flood forecasting and warning, and for river management training, in order to increase the accuracy of forecasting. Since finances for scientific and technological advances are limited within the country, research agencies end up working on projects that don't have any productive outcomes. Infrastructure for applying and testing new scientific approaches continues to be inadequate, and does not meet the requirements of industrialization and modernization of water resources.

3.3 HUMAN RESOURCES AND CAPACITY

In the implementation of public policy, the ability to govern depends on the human resource capacity of government agencies – the people who participate in policy making and implementation, including their collective memory, commitment, technical proficiency and programme competence⁴³. Considering that people envision, plan and execute tasks,

⁴³ Lane, L.M. and J.F. Wolf (1990). The human resource crisis in the public sector: Rebuilding the capacity to govern. New York: Quorum Books.

coordinate, manage and produce inputs and outputs in an organization, success or failure of an institution's performance depends upon the people involved. Given the complexities involved in WSI development in the Mekong Region, it is critical that the public sector remains capable of understanding and addressing complex issues involved in water governance.

MK4 Output 1 National Research Teams from Cambodia, Lao PDR and Vietnam assessed the weaknesses in human resource capacities to effectively manage the water sector and water resource development. The teams identified that fisheries and aquaculture, and irrigation sectors have sufficient human resources, given that national, regional and international universities generate many graduates in these fields every year. However, these graduates do not receive sufficient opportunities to apply their knowledge due to complexities at higher administrative levels. Human resources are assessed to be seriously lacking in the hydropower and energy sector, particularly in Lao PDR and Cambodia. Ministries responsible for environmental protection are often deficient in the required technical specialization to protect, preserve and manage the countries' fragile ecosystems. This is particularly evident in the EIA report review process, as well as in the monitoring and enforcement of environmental protection commitments. The administrative, coordination and management capacities of sub-national (provincial and village-level) agencies are also lacking, and fail to ensure the extension of public services at all administrative levels.

In all the three countries, awareness of water resource governance issues was found deficient in central government, ministries, provincial governments and departments. The agencies have limited understanding of integrated approaches to water resource allocation, development, and protection or little practical training in their application. The capacity within agencies to critically review development plans and environmental impact assessments of projects from water resource management, environmental, and social perspectives are also poor. As the role of all the three governments slowly changes from that of a developer and operator to planner and regulator, government agencies, both central and provincial, will require a different skill set. Distribution of labor between regions is not balanced. In many areas, especially in district agencies, the size of the labor force is inadequate. Capacity building is urgently required, and human resources may potentially need redistribution.

English language capabilities of government staff in the three LMB countries are poor, which impede their ability to exploit scientific materials for technological improvement. Most government staff have been trained in management and administration, rather than in scientific/technical fields. At present, staff members of some organizations, particularly in Vietnam, have reasonable knowledge and capacity in new technical fields. Their capacities include gathering information on impacts of projects that proponents require; appraising and evaluating policies and techniques; following a suite of conditions that may apply to particular types of activities to mitigate unacceptable impacts; and monitoring and reporting ongoing compliance with enforced conditions. Staff working in these fields require regularly updated knowledge.

Consultations with relevant government agencies revealed that human resources (i.e. technical proficiency and experience, programmatic competencies and adequacy of staffing) are the greatest concern in evaluating and implementing sustainable infrastructure projects. There is need for assistance, in the form of technical training opportunities particularly at local level (villages, districts, and provinces) where implementation takes place. Ministries of environment also require development and upgrading of capacities to

review and comment on key environmental and social documents, and the social action plan in particular, due to their volume and complexity.

3.4 FINANCIAL RESOURCES

Depending on the socio-economic status of each LMB country, financial resources allocated to different sectors and agencies of the government vary. To a large extent, irrigation and fisheries sectors of Lao PDR and Cambodia remain dependent on foreign funding for infrastructure development. These sectors also remain largely under-developed due to the lack of government funding to develop, rehabilitate and maintain existing infrastructure. Irrigation sectors in these two countries are primarily rain-fed and heavily dependent on donor support. Hydropower sector is almost entirely dependent on financial resources of foreign investors. All hydropower projects planned in Cambodia and Lao PDR are foreign investments.

Unlike Lao PDR and Cambodia, in Vietnam, the State has been paying attention to investment in water resources, given the importance of irrigation for rice production in the country. The hydropower sector in the country also remains largely state-owned, as Vietnam expands investment in neighboring countries. However, integrated and effective investment in water resources has not been consistent or sufficient. Annually, the national financial plan balances the water use plans of various sectors, such as, irrigation, water supply for urban-rural areas, industries, and hydropower, but it does not compare with the water balance in river basins or inter-river basins.

Consultations with relevant government agencies and other stakeholders during MK4 Output 1 indicated that the current government budget allocation is not adequate to implement social and environmental safeguard policies and practices. Traditionally, a large chunk of funding goes toward operating expenses such as staff salaries and office expenses. While many agreed that local development projects are beneficial, the financial returns to local governments are unclear. Yet, the local government, particularly individual government staff, benefit from development projects, as they receive per diem or salaries for assignments from project developers.

Shortage of funding for the environment protection and conservation sector limits the government's ability to sustainably manage natural resources. The current focus in all three countries, as well as international investments reflect a strong development focus, with an emphasis on infrastructure projects, while many important areas of water sector management receive very minor investments. For example, in Laos, according to the 7th National Socio-economic Development Plan (NSED) (2011-2015), allocation of the government budget is heavily tilted toward social and infrastructure and construction sectors. Each sector shares 35 percent of the total investments, while the budget allocated for the economic sector accounts for only 30 percent. In Cambodia, under the NSED (2006-2010), only 2.86 percent of the budget was allocated toward environment and conservation. In Vietnam, the government has been keen on investing in environmental infrastructure, but there are only few mechanisms to mobilize capital resources for investment. The government has been seeking to develop solutions to diversify investment for environment, such as the Vietnam Environmental Protection Fund (VEPF), established in 2002 for the purpose of helping localities and enterprises invest in environmental infrastructure. However, investments are often poorly organized and the investment rates are still lower than in other countries in Asia.

The lack of investment in IWRM is also apparent in areas such as legal reform, policy and strategy development, data and information, river basin planning, licensing and pricing,

protection of environmental assets, water quality management, and mobilization of community involvement. These tools are essential if the water sector in the Mekong River Basin is to operate on a sustainable basis.

4.0 NON-STATE ACTORS AND SOCIAL ACTIVISM

In addition to multilateral and bilateral funding agencies and private sector investors, various other non-state actors play a key role in water governance, livelihoods, and hydropower development issues in the Mekong Region. These actors include, but are not limited to, academic and research institutions and networks, non-governmental organizations, civil society groups, international development organizations, and technical consultants. While some operate on a regional scale, others are based in individual countries and localities, and are involved in providing a range of services, from research and technical studies to consultancy, advocacy and information dissemination. In the wake of hydropower projects proposed for the region, these non-state actors have stepped up their role by increasingly becoming involved in assessing natural and human resource systems in the region, and facilitating collaboration between key decision makers to realize the impacts of dams.

4.1 MULTILATERAL DEVELOPMENT AGENCIES

Multilateral agencies, such as, the World Bank and Asian Development Bank, and bilateral agencies continue to play a key role in the development of hydropower in the Mekong Region (Middleton, 2009). They previously influenced the reorientation of national policies in favor of private-sector investment and provided technical studies, advice, and financing to shape the region's strategic direction in electricity development. With increased private-sector involvement in the hydropower sector, demand for conditionality-tied ADB and World Bank loans has declined. As a result, the role of these institutions has changed; they have committed to the delivery of international best practices for the region and cooperation initiatives (Middleton et al. 2009). The World Bank and ADB's environmental and social policies and their commitment to public participation have been recognized as international best practices; however, in recent years, they have been deemed inadequate to mitigate the impacts of large dams. Existing hydropower projects supported by ADB and the World Bank, including the Theun-Hinboun and Nam Song dams in Lao PDR and the Pak Mun Dam in Thailand, have failed to mitigate the impacts of the projects and to restore people's livelihoods. The recent Nam Theun 2 hydropower project in Laos, supported by the World Bank and ADB, has restored the credibility of their environmental and social impacts assessment and management practices; however, the project's long-term impacts on affected communities remain to be seen.

4.1.1 Mekong River Commission

The MRC operates under a cooperation agreement between four member countries (Cambodia, Lao PDR, Thailand, and Vietnam) through the 1995 Mekong Agreement on Cooperation for Sustainable Development of the Mekong River Basin (the 1995 Mekong Agreement). The Agreement also sets out a framework for achieving the strategic objectives of IWRM, recognizing that development decisions by sector agencies in the sovereign riparian countries of the Mekong River Basin may have transboundary consequences and that the MRC, as an inter-governmental river basin organization, is reliant on the endorsement of its approaches by its Member Countries. In addition, the MRC is fully committed to an IWRM-based approach, in which the IWRM-based Basin Development Strategy, approved in December 2010, will have a significant influence on the

implementation of the MRC's new strategic direction in the next five years (2011-2015) (MRC Strategic Plan 2011).

With escalating interests in hydropower development in the LMB, the MRC aims to assist Member Countries understand the long-term impacts of dam construction and operation, and their impacts, benefits and risks.

While the Mekong Agreement outlines the responsibilities of the MRC, the description, functions and authority of the MRC remains vague. This has contributed to the formulation of differing interpretations and expectations of the MRC's role and authority. In practice, MRC is an inter-governmental organization, driven by national interests of the Member Governments, as represented by the National Mekong Committees (NMCs). It has no formal supra-national regulatory authority, but it supports the basin development through a facilitation and coordination role. In the recent years, MRC has largely assumed the role of a knowledge-based organization, involved in knowledge generation, and the use of this information to inform decisions in the basin. MRC places particular emphasis on the BDP as the principle tool to ensure that developments in the basin are coordinated, and based on the principles of the Integrated Water Resources Management (IWRM) approach.

In the context of hydropower development in the region, MRC has played a role in the following areas⁴⁴:

- **Basin-wide Assessment of Mainstream Dams:** The MRC has initiated a number of studies to assess the potential implication of mainstream dams on various socio-economic and environmental systems in the region. MRC has conducted an SEA on mainstream dam proposals (2010), which demonstrated its role in facilitating dialogue among major stakeholders, including national governments, civil society and the private sector, and in introducing a holistic approach to the assessment of risks and opportunities. Despite its role in hydropower assessment and knowledge generation, concerns have been raised regarding its credibility as an organization providing objective scientific evidence; its new information disclosure policy; and, how and whether the knowledge generated by MRC will inform decisions, given the disconnect between MRC programs and national planning systems.
- **Advice on individual projects upon request:** Article 30B of the Mekong Agreement states that MRC Secretariat (MRCS) shall “provide technical and financial administration and advice as requested by the Council and the Joint Committee”. Technical advice on projects must be requested by the Member States; however, at present, there is no mechanism by which non-state actors can request technical advice or information directly from the MRCS. Communities affected by specific development projects find it difficult to raise their concerns through the NMCs to the MRCS.
- **Administering Procedures for Notification, Prior Consultation and Agreement (PNPCA):** Article 5 of the Mekong Agreement requires that all hydropower dams proposed on the mainstream Mekong River must undergo the PNPCA process, facilitated by the MRC, with the goal of reaching an agreement by the Joint Committee. The recent drawbacks of the PNPCA process in the Xayabourri Hydropower Project on the Mekong mainstream in Lao PDR, which the Government of Lao PDR declared as completed despite concerns raised by other

⁴⁴ Australian Mekong Resource Centre. 2008. The governance role of the MRC vis-à-vis Mekong Mainstream Dams. Mekong Brief. No. 10.

nations, led many to question MRC's effectiveness in facilitating discussion and consensus on an issue that is largely influenced by national priorities.

- **Facilitating dialogue:** The MRC has highlighted its role as a facilitator of dialogue among different and often competing interests, and building on its knowledge base to inform discussions over development of the basin, including mainstream hydropower dams. However, concerns have been raised over, meaningful participation of non-state actors and potentially affected communities; the failure of NMCs and the MRC to represent and become responsive to diversity of interests in water and river-basin management; and, constraints placed on different actors to contribute to and receive information from MRC to allow it to become an objective knowledge-based institution.

4.1.2 World Bank, Asian Development Bank and Other Donors

The water sector of the LMB countries has received large amounts of financial support (loans and grants) from worldwide financial institutions such as ADB, the World Bank, as well as international development agencies of various countries, including the Japanese Bank for International Cooperation (JIBIC), Agence Francaise de Developpement (AFD), KfW Bankengruppe of Germany, Danish International Development Agency (DANIDA), Swedish International Development Cooperation Agency (Sida), Japan International Cooperation Agency (JICA), Canadian International Development Agency (CIDA), and the Government of Netherland, among others. In addition to infrastructure development, these organizations have provided grants, loans, and technical assistance to relevant ministries/departments of the region to support policy implementation and capacity enhancement. They have funded initiatives for environmental and social monitoring and policy implementation support (at the central and provincial levels), for integrated river basin management, hydropower sector policy support, social safeguards and resettlement policy support, as well as environmental education and awareness.

Since 1992, the World Bank has provided Cambodia with technical expertise and more than USD 659.2 million in loans and grants, and about USD 99.7 million in trust funds to support efforts to reduce poverty and promote economic growth (UN 2006). Cumulative ADB lending to Cambodia, as of December 2010, amounted to a total of USD 1,167 million of which 16.5 percent was provided to the agriculture and natural resource sector, 10.34 percent to the energy sector, and 3.96 percent to the water supply, municipal infrastructure and service sector. In September 2010, ADB approved USD 63 million in funding to the Water Resource Management Sector Development Program in Cambodia. The program includes measures to strengthen national water regulations, and to improve the management of river basin resources. The project will assist rehabilitation and upgrading of irrigation systems in the Tonle Sap Basin, and also build the capacity of MOWRAM to manage irrigation services, and strengthen the general policy, regulatory and institutional environment to improve coordination and collaboration on water resources among government institutions.⁴⁵

In addition to the World Bank and ADB, other donors have substantially assisted development of the irrigation sector in Cambodia. The Mekong Secretariat (now the Mekong River Commission) prepared an inventory of potential hydropower and irrigation projects and was responsible for the emergency rehabilitation of key irrigation structures damaged by floods in 1991. It also initiated a long-term countrywide irrigation

⁴⁵ ADB. 2010. ADB to help Cambodia Improve Water Management, Irrigation Systems. <http://beta.adb.org/news/adb-help-cambodia-improve-water-management-irrigation-systems>.

rehabilitation study. To generate employment, ILO has instituted a labor-intensive infrastructure rehabilitation program in Cambodia. The UNHCR, UNDP/CARERE, United Nations World Food Programme (WFP), and the Netherlands are funding rehabilitation of irrigation canals and minor structures in the country. The Food and Agriculture Organization (FAO) has funded pilot projects on water control technologies. The European Union, as part of the Programme de Rehabilitation au Secteur Agricole du Cambodge, is developing local capacities and building farmers' associations in the provinces close to Phnom Penh. The GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) has been providing support for investigation and study of small- and medium-scale irrigation schemes in Kampot and Kampong Thom.

Since 1996, the ADB has supported the government of Lao PDR in introducing integrated water resources management (IWRM) approaches. In 2008, the ADB initiated a Technical Assistance project Updating the National Water Policy and Strategy and, later in 2009, AusAID co-financed another USD 300,000, making it a USD 1.3-million project. Funding was provided to support the establishment of the Water Resource and Environment Administration (WREA) in 2007, to streamline agencies and modernize the water sector in the Lao PDR under the mandate of IWRM (ADB website, 30.07.2011). As a result of this TA, the Water Resource Policy Framework (National Water Resource Policy, Strategy and Action Plan) was prepared and completed. It is now being used as a preliminary water resource policy (ADB website, 30.07.2011) while awaiting formal approval of the government and National Assembly.

The ADB has provided a USD 20-million loan to the government of Laos and a USD 50-million loan and USD 50-million guarantee to the Nam Theun 2 Power Company (NTPC), a French-Thai-Lao consortium that set up the hydropower complex (ADB, 30.07.2011). These loans and guarantees are based on government assurance that income from NT2 will be used to lift Lao citizens elsewhere in the country out of poverty, largely through its existing anti-poverty platform of public spending and reforms (ADB, 30.07.2011). The ADB also helped to monitor the displacement of villagers in NT2, and it continues to closely monitor their livelihood restoration.

The World Bank funded the Lao Environment and Social (LEnS) Project⁴⁶, the largest project currently implemented by the Environmental Protection Fund (EPF)⁴⁷. A USD 7 million grant provided by the World Bank supported the implementation of the project, as part of NT2, complemented by a USD 5.8 million loan from the ADB. The World Bank also supports the hydropower sector in Lao PDR through recently approved Technical Assistance for Capacity Building in the Hydropower and Mining Sectors Project (H539-LA) (Lao PDR Development Report by WB, 2010).

During the 1990s, international donors accorded high priority to the water sector in Vietnam to help reconstruct infrastructure, especially for irrigation works constructed in the 1960s that were seriously degraded or damaged during the war in the North, and for new irrigation systems used for expanding paddy production to maintain food self-sufficiency. By providing the water sector with billions of dollars of loans, donors extended technical assistance to strengthen and improve the project management and

⁴⁶ Lao Environment and Social (LEnS) Project aims at building the management and operational capacity of the EPF for approving, funding, monitoring and evaluating sub-projects, enabling the EPF to utilize NT2 revenues in an efficient and cost-effective manner.

⁴⁷ The Environment Protection Fund (EPF) was established as a financially and administratively autonomous organization under the Lao laws aiming at strengthening environmental protection, sustainable natural resources management, biodiversity conservation and community development in Lao PDR.

implementation capacity of relevant government agencies and institutions at the central and provincial levels. This assistance has been essential in building the capacity of human resources in the water sector in Vietnam.

Under the Vietnam Water Sector Review Project (ADB TA4903), international development partners identified the focus of their current and future investments in Vietnam.⁴⁸ The total value of all projects in Vietnam was equivalent to about USD 1,740 million in 2009 of which 54 percent was for projects solely funded by individual donors. Direct budgetary support comprised 9 percent of the investments. MARD was nominated as the sole benefiting ministry for 27 percent of investments, and partial beneficiary of another 9 percent of investments. MONRE was nominated as the sole benefiting ministry of only 0.3 percent of investments and as partial beneficiary of another 4 percent. EVN receives 7 percent; MOC 6 percent; and MOF/MPI 4 percent. The PPCs were nominated as the benefiting body for 10 percent of investments. In total, 54 provinces were nominated as beneficiaries of international investments. Due to the relatively stable political climate of Vietnam, the donor community has continued to provide funding to the country, up to nearly 8 billion USD for the year 2011, and the Government has made commitments to use these loans more effectively (VietnamNet, 2010).

At present, the relationship between international partners and the governments of LMB countries is in transition. Despite past efforts in this area, investments from international partners remain uncoordinated. Projects overlap significantly and tend to be short-term and piecemeal, synergies are not exploited, and project outputs are not readily available. Some areas have duplicated efforts, while gaps remain in other areas, and opportunities to build on previous work are missed. The sustainability of many projects is also questionable. In many cases, once project funding ceases, so do all associated national efforts, as outputs are rarely integrated into ongoing national activities.

4.2 PRIVATE SECTOR

Private sector investment is playing an increasingly important role in hydropower development in the region. Following the Asian financial crisis, new political relationships have emerged in the region. Private sector hydropower developers from Thailand, Vietnam, China, Malaysia and Russia have begun to participate in plans to develop water resources in the mainstream Mekong River and its tributary systems. In contrast to previous investment regimes of multilateral funding agencies and western hydropower companies, which were often associated with various conditions and environmental and social commitments, revenue-driven private sector involvement has been well-received by the governments of the LMB countries.

A number of private companies have invested in Cambodia in potential hydropower projects. Chinese companies remain the most prominent in Cambodia, while Korean, Vietnamese and Russian companies also have a presence. The main investors in Cambodian hydropower sector include China Electric Power Technology Import Export Corporation, Sinohydro Corporation, China Datang Corporation Cambodia, China National Heavy Machinery Corporation, China Southern Power Grid Company, Electricity of Vietnam, and Guangxi Guiguan Electric Power Company.

Major private sector investors in hydropower in the Lao PDR are Electricite de France (EDF), China North Industries Corporation (Norinco), Sinohydro Corporation, and Russian State

⁴⁸ ADB. 2009. Socialist Republic of Viet Nam: Water Sector Review (TA4903). Kellogg Brown & Root Pty Ltd.: South Australia.

Oil; companies from neighboring countries, such as, Chor Kan Chang (Thailand); and banks from other countries, such as, the Export Import Bank of China (Exim) and Thailand's Kasikorn Bank (Poverty-Environment Initiative Lao PDR Issues Brief, UNDP 2010).

According to National Power Development Plan VI, most large and majority of medium hydropower plants in Vietnam were funded by the state, with Electricity of Vietnam (EVN) as the executing agency. The budget invested in electricity in 2005 occupied up to 76.4 percent of the total investment, and increased to 78 percent from 2006 to 2010. During the past decade, the private sector has actively participated in building and operation of small and medium hydropower plants. The main private sector investors in Vietnam include PetroVietnam, Song Da Group, Industrial Distributors International Co. (IDICO), Mien Trung Hydropower Joint- Stock Company, and Viet Nam Electricity Development Joint-Stock Company Hoang Anh Gia Lai Group, etc. Some joint venture plants between EVN and external investors (most are invested in coal thermal electric power) have also been developed.

The LMB governments have increasingly depended on the Chinese, Thai, Vietnamese and other foreign government-backed investors as sources of funding for hydro-power projects. These sources now far exceed the funding from the ADB and the World Bank, which dominated in the past. With China's rising influence in the LMB, the geopolitics of investment is increasingly becoming bilateral.⁴⁹ This regional bilateralism has caused a shift in decision-making on hydropower dams from international financial institutions to the national arenas of less industrialized but resource rich economies of Lao PDR and Cambodia, in consideration of cross-border investment by three dynamic economies, i.e., China, Thailand and Vietnam.

From the perspective of regional governments, bilateral negotiations have reduced the need to go through various safeguard policies of multilateral banks. This presents grave concerns from the perspective of social, environmental and developmental consequences of large-scale hydropower development. While the internal policies of the multilateral banks have evolved to take serious stock of social and environmental costs, the degree to which these issues will be evaluated and addressed in the government's dealings with private companies remains an open question, given the adverse views, particularly from NGO observers (Baird 2009, interviews with The NGO Forum on Cambodia, Culture and Environment Preservation Association, WWF). As noted by Hirsch (2010), though China's dam building activities are commercial, they are also part of its rapidly growing political influence and developmental role in the region through investment, aid and trade relationships with Lao PDR and Cambodia in particular.⁴⁹

4.3 NGOS AND SOCIAL ACTIVISM

Along with the shift in the geopolitical context of decision-making and implementation of hydropower projects in the region, the eco-political setting has also changed. NGOs have continued to expand their network in the region, expressing concern over the dams and educating the general population of their implications. The Thailand-based regional NGO TERRA (Toward Ecological Recovery and Regional Alliance) and SEARIN (Southeast Asia Rivers Network) has partnered with international NGOs, such as, International Rivers Organization, as well as local NGOs in the four LMB countries to voice concerns over the decision-making implications of hydropower in the region. Save the Mekong Coalition was

⁴⁹ Hirsch, P. 2010. The changing political dynamics of dam building on the Mekong. *Water Alternatives* 3(2). pp. 312-323.

specifically established to rally against mainstream dam building, and has organized several NGOs and regional civil society organizations for the cause.⁴⁹

In Cambodia, the impact of the Sesan dams on Vietnam, and accelerated dam-building program, has moved NGO action beyond the 3S River Basin (Sesan Srepok Sekong Protection Network – 3SPN), which was largely focused on the northeastern part of the country, to a national focus. Rivers Coalition Cambodia (RCC) was established with the collaboration of the 3S River Protection Network (3SPN), the NGO Forum on Cambodia, the Culture and Environment Preservation Association (CEPA), the Fisheries Action Coalition Team (FACT), Conservation and Development in Cambodia (CDCam), and the Cambodian Volunteers for Society (CVS), to support communities impacted by dam construction. It initially worked on issues pertaining to the Sesan River and later on the Sekong and Srepok rivers. Lately, the RCC has extended its work on hydropower development projects to the whole country. Over the years, RCC has extended its network and integrated additional NGOs as its members to work on issues related to hydropower.

In response to Vietnam's acceleration of its hydropower program throughout the country, many university-based researchers and small NGOs have become active in expressing concern at the environmental risks posed by large hydropower dams. People's protests and movements against small hydropower plants (e.g. An Khe – Ca Nak) have also been publicized in the media. There are several examples of strong opposition by NGOs, scientists and the public in Vietnam forcing the government to suspend contentious projects. For instance, opposition by Da Nang residents and scientists to a basin water transfer Project from Vu Gla to Thy Bon River for Dak Mi4 hydropower plant, led to a government decision to temporarily halt construction; and, more recently, the protests against the environmental impacts of hydropower plants on Dong Nai River forced the Ministry of Industry and Trade to reconsider plans for development.

In Lao PDR, despite the introduction of a new legislation permitting the registration of NGOs with the Government (2010), NGO activity is lacking. International NGOs, such as, the International Rivers Organization and Save the Mekong Coalition, however, have been involved in raising concerns over environmental and social impacts of hydropower expansion in the Lao PDR, trying to pressure the Mekong countries (particularly Laos) to make better and more transparent decisions relating to planned hydropower projects in the LMB.

As a one-party socialist state, government criticism is rarely tolerated in Laos. Freedom of press and the influence of civil society organizations are restricted, while corruption remains rampant.⁵⁰ There are no obvious cases of social activism in relation to hydropower development in Lao PDR, but there is the simmering unhappiness of affected villages over inappropriate compensation and adverse consequences of development projects. These issues are generally addressed by the Project Developer and the local government.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Our analysis explored the key challenges and weaknesses in implementing sustainable and equitable policies in the hydropower and water resources management sectors in Cambodia, Lao PDR and Vietnam. It is evident that legal and institutional arrangements have been developed to varying degrees in the three countries. While some issues were commonly observed across all the three countries, others were more country-specific or

⁵⁰ Stuart-Fox, M. (2006). "The Political Culture of Corruption in Lao PDR". *Asian Studies Review*, vol 30. Pp 59-75.

sector-specific. Specific recommendations to address the overarching challenges in each country/sector have been addressed in the country assessment reports and this gap analysis report to some extent. This section will focus on the “regional picture” and the commonly observed status of water resources development and management in the three countries studied, with a particular reference to building of dams and their environmental and social impacts.

In the hydropower sector, all the three countries have developed legislative frameworks and procedures to govern dam development, implementation and monitoring. However, the rightful implementation of these processes to maximize the economic, social and environmental benefits from these projects is constrained by a multitude of factors. Environmental impact assessment is the key mechanism by which potential hydropower projects are evaluated. Effective implementation of the EIA process is often impeded by uncoordinated, overlapping, conflicting and vaguely-defined roles and responsibilities of the relevant government agencies, particularly those responsible for energy development and environmental protection. The ability of environmental authorities to legitimately complete EIA review and assessments is sometimes impeded by legislative provisions, as well as overriding authority of stronger ministries. Human resources in EIA review departments are limited in technical capacity to review comprehensive EIA reports consisting of multi-disciplinary subject matter. At the project-site level, provincial and local authorities are especially constrained in capacity to oversee the implementation of environmental protection, management and compliance. Environmental ministries are also limited in their mandate and capacity to evaluate social impacts and oversee the implementation of resettlement and social action plans of hydropower projects.

In the case of Lao PDR, while MONRE is responsible for Environmental and Social Impact Assessment review and appraisal, RMU is responsible for implementing the RAP. In Cambodia, Ministry of Economy and Finance is responsible for the implementation of the RAP. While public participation is a requirement under the EIA process, technical guidelines for its implementation and requirements for its consideration and inclusion in EIA reports are often lacking. A significant weakness is monitoring the implementation of the EMMP, which is the responsibility of government agencies, who are constrained by lack of funding and staffing resources.

The integrity of the EIA process determines the accurate assessment and mitigation of adverse impacts that development projects generate upon ecosystems and human populations at the project site, and downstream. At present, the process remains impeded by various legislative and implementation weaknesses that needs to be addressed to ensure environmental sustainability and social equity of projects.

Agriculture and irrigation sector is the largest and most important water use sector in the Lower Mekong Basin countries. In Cambodia and Lao PDR, this sector remains largely underdeveloped due to lack of funding for their upgradation and maintenance. In Vietnam, a significant amount of funding has been invested in the irrigation sector to benefit the country’s extensive production of rice. Water resource planning in the irrigation sector also suffers from conflicting and uncoordinated uses between multiple economic sectors with no formal mechanism to assess and address cross-sectoral impacts. The sector is characterized by fragmented policy and institutional frameworks, consisting of a range of policies affecting the sector, and poor coordination between multiple ministries. For example, there is often conflicting responsibilities between the ministries of agriculture, responsible for irrigation development, and ministries of environment, responsible for water and natural resource protection. Increased investment of the private sector in irrigation and water resources calls for greater awareness raising on water sector

management issues, and practical training in resource allocation, evaluation of development plans, and environmental protection, particularly among the staff of central government, relevant ministries, and provincial/district-level authorities.

Similar issues of uncoordinated government efforts in planning and management, limited staff capacities, particularly at provincial and local administrative levels, and inadequate funding for infrastructure maintenance and upgradation are evident in the fisheries and water supply and sanitation sectors as well.

Analysis of non-state actors shows that multilateral development banks (MDBs) have played a key role in shaping the water sector in all the three countries, in terms of policy formulation, infrastructure development, and planning. Lao PDR and Cambodia, in particular, continue to receive generous support from MDBs, including the World Bank, ADB and various other international development agencies for irrigation development and poverty alleviation programs. However, hydropower sector in the LMB has progressively shifted toward private investors from China, Thailand, Vietnam, Russia and Malaysia. Greater private sector involvement in regional power projects raises concerns over the proper consideration of the environmental and social impacts of the projects, as they are not obliged to follow the safeguard standards and policies of MDBs.

The MRC, as a regional knowledge-based organization and facilitator of discussion regarding development in the basin, has played an important role in presenting the potential impacts of dams on the Mekong River Basin. MRC has brought together perspectives of a wide range of stakeholders from the government, research institutions, international experts, NGOs, civil society organizations and the private sector to better understand opportunities and risks for the region. However, in the absence of regulatory powers, the MRC's effectiveness in guiding sustainable outcomes in the region has been widely questioned, especially in the context of conflicting national interests.

During the recent years, NGOs have also become highly active in advocating against hydropower development in the Mekong mainstream and its tributaries. NGO coalitions have been formed to gather support from stakeholders in all the three LMB countries, to put pressure on the governments to make more transparent and informed decisions regarding hydropower dams. However, NGO activity is limited in the Lao PDR, where most Mekong mainstream dams are proposed, while concerns of the project-affected persons are voiced and addressed in a more silent form by project developers in rural areas.

Overall, the legislative frameworks and institutional arrangements for water sector development and management in the LMB remain uncoordinated and in need of improvement. Clarification of the roles and responsibilities of government agencies, and greater collaboration within different levels of administration and across sectors are key requirements for improved planning and management of the sector. Increased involvement of the private sector in hydropower and other water-use sectors presents a greater need for transparent and accountable decision making, considering a range of stakeholder perspectives. Therefore, an enabling environment needs to be created, in terms of legislative and institutional arrangements and human and technical resource capacities, to accurately assess the opportunities and risks of development planning.