

Scoping Study of Existing Frameworks Related to the World Commission on Dams Strategic Framework – Cambodia

Sam Chamreoun*

1. Executive Summary

Cambodia initiated the reorientation of its economy in the late 1980s with greater emphasis on economic liberalization and market economy. Capital investment in industry, tourism, services, and the agriculture sector amounted to US\$5.27 billion between 1995 and 2000. Slightly more than 970 medium to large industrial establishments were registered by 1999 while some 25,600 smaller industrial establishments were registered in 2000 in the country.

In his address to the first Cabinet meeting of the Third Legislature of the National Assembly on 16 July 2004, the Prime Minister Hun Sen stated that the promotion of economic growth and the generation of employment for all Cambodian workers were being given high priority in his political agenda. The Government of Cambodia recognizes that in order to achieve national development objectives, it is crucial that a more positive and predictable business environment be created to facilitate the development of the private sector. In doing so, the Government also recognizes that special consideration needs to be given to the development of small and medium-sized enterprises as the main driving force in realizing the goal of increased investment. Improvement of the economic environment is also seen as fundamental to the revitalization of foreign investment and increased domestic investment.

Energy demand is one of the basic factors in Cambodia's economic development. The development of the energy sector and the electricity supply network makes up one side of the "Rectangular Strategy" of the Government. One of the most important aspects of the national economic policy is the further development of the energy sector to enable it to effectively respond to the increasing needs for low-cost electricity. Therefore, the Government places high priority on attracting increased private sector investment and participation in electricity production and distribution, especially in key provincial and urban centers, as well as investment in rural electrification to provide the rural areas with quality, low-cost electricity supplies.

The Government will also support the establishment of power transmission grids linking Cambodia with neighboring countries. Although the Government plans to install power-generating plants (hydropower) in some provinces, it remains strongly committed to its "Rectangular Strategy" that requires all aspects related to the developing hydropower resources to be carefully analyzed, especially the economic benefits and environmental and social impacts.

In its Third Legislature, the National Assembly stated a clear national policy on water resources and irrigation system management by considering it as a part of a broad program to protect, manage and ensure sustainable exploitation of water resources while enhancing biodiversity and sustainability for equitable public benefit. The objective

* Director, Department of Environmental Planning and Legal Affairs, Ministry of Environment, No. 48, Preah Sihanouk Avenue, Chamkarmon, Phnom Penh, Cambodia. E-mail: chamroeunsam@hotmail.com.

is to anticipate and prepare for the growing challenges that Cambodia's water resources will face in the next 20 years by adopting relevant measures. These measures will include, inter alia, making clean and safe water available to all citizens, providing adequate water supplies in order to guarantee food security, sustainable economic activities and appropriate living standards, ensuring that water resources and the environment are free from toxic elements, and maintaining a supportive fisheries and ecological system.

These policies are being supported by the enactment of relevant environmental legislation. Nevertheless, the lack of a clear policy and legislation on dam management, exacerbated by weak compliance with, and enforcement of existing relevant legislation, remain critical constraints to the sustainable use and conservation of natural resources and biodiversity in Cambodia.

2. Introduction

2.1 Objectives of the Study

This study attempts to answer two questions:

- (a) To what extent does the existing policy and legislative framework support the implementation of the Strategic Framework for Dams and Development?
- (b) What changes need to be made in the existing policy and legislative frameworks to support comprehensive implementation of the Strategic Framework for Dams and Development?

2.2 Project Background

During 2002, the IUCN–World Conservation Union supported the dissemination of the Strategic Priorities for a new policy framework for the development of water and energy resources, which were presented in the World Commission on Dams (WCD) report, *Dams and Development*. This was done through translations and dialogue workshops at the national and local levels in Cambodia, the Lao People's Democratic Republic and Thailand. In addition, IUCN organized a workshop on the "Strategic Priorities in Yunnan Province, China".

In each of the above countries, Working Groups were established to oversee translation activities as well as organize and facilitate dialogue workshops. The national Working Groups included representation from government agencies with responsibility for water resources management (i.e., irrigation, hydropower, agriculture, environment and fisheries) and from non-governmental organizations.

Because the national Working Groups expressed a high level of interest in gaining a regional perspective, a regional workshop was held in Chiang Mai, Thailand on 21 November 2003 to enable them to share experiences and lessons learnt as well as make recommendations for future action. Participants in the regional workshop observed that there were no sources of objective information on national and regional policies and legislative frameworks related to large-scale water resources development.

In response, IUCN secured funding from the Swiss Bundesamt für Umwelt, Wald und Landschaft/Swiss Agency for the Environment, Forest and Landscape (BUWAL) and Oxfam America for undertaking a project to fill the gap identified during the regional workshop. This scoping study was prepared as part of that project.

2.3 Methodology

This study is based on a review and critical analysis of various sources of information including primary legislative documents, regulations, and policy documents as well as other secondary literature. The study also benefited from official reports prepared by key national agencies and regional institutions including:

- (a) The Ministry of Water Resources and Meteorology — draft Strategic Plan on Water Resource Management and Development, and the Water Policy and Irrigation Inventory in Cambodia, January 2004;
- (b) The Ministry of Industry, Mines and Energy — draft Strategy on Renewable Energy, February 2004;
- (c) The Ministry of Commerce national database — numerous online legislative and by-law documents and the Sector Energy Policy;
- (d) The Ministry of Environment — National Environmental Action Plan, 1998–2002, Cambodia’s National Biodiversity Strategy and Action Plan, the Law on Environmental Protection and Natural Resources Management, and the Sub-decree on the Environmental Impact Assessment (EIA) Process;
- (e) Cambodian National Mekong Committee — draft Basin Development Plan;
- (f) Mekong River Commission — Hydropower Strategy, and the EIA/Strategic Environmental Assessment System in the lower Mekong basin;
- (g) The Asian Development Bank (Energy Sector in the Greater Mekong Sub-region, and Regional Power Grid); and
- (h) The IUCN Bangkok Office — WCD reports, project background document).

In some cases, the study examined Khmer language documents and publications that were not yet available in English. Some information was also collected through interviews with selected individuals who had been involved in the assessment and formulation of policies and legislation in some government agencies. Informal discussions were also held with persons familiar with water resources and dam management issues.

To set the scene for discussing the two questions detailed above, a brief introduction to Cambodia’s geographical, political and social profiles is provided below.

2.4 Geographical Profile of Cambodia

Cambodia is located in South-East Asia and is bordered by the Gulf of Thailand in the south (with a coastline of some 450 km), Viet Nam in the east, the Lao PDR in the north, and Thailand in north and west. Major features of Cambodian territory, which covers 181,035 km², include the Cardamom and Danrek mountain chains in the west and north, respectively, and a hilly plateau in the east. Cambodia's central areas are extremely flat around the Mekong River and Tonle Sap Lake. The climate is tropical and consists of a wet season from May to November and a dry season from December to May. The basin of the Mekong River – the country's largest waterway – covers more than 84% of Cambodian territory and dominates the hydrology of the country. The Mekong is an international river flowing through six countries – China, Myanmar, the Lao PDR, Thailand, Cambodia and Viet Nam. With a length of more than 4,800 km, the Mekong River has a drainage area of 795,000 km² and an average annual flow of more than 475,000 million m³ (table 1).

Table 1: Mekong River Basin Statistics

Country/region Flow	Catchment Basin Area		Area of Country	Average
	Percentage (km ²)	Population (%)		
Yunnan, China million	165,000	22	2,410	10
Myanmar	24,000	3	300	2
Lao PDR million	500,000	25	5,270	4.9
Thailand million	202,000	97	2,560	17-18
Cambodia million	184,000	36	2,860	18-19
Viet Nam million	155,000	86	1,660	11
Total million	795,000	100	15,060	71.8

Source: Mekong River Commission, *State of the Basin Report*, 2003.

2.5 Political and Social Profiles of Cambodia

Cambodia is a parliamentary democracy and constitutional monarchy with the King as a head of the State. The capital of Cambodia is Phnom Penh and the official language of the country is Khmer. The population of Cambodia in 2001 was estimated to be 13.1 million, with an estimated annual population growth rate of 2.5% from 1994 to 2000) and 1.8% in 2004 and 2005. Life expectancy at birth is 54 years (World Bank, 2004). Approximately 16% of the Cambodian population lives in urban areas and the remaining 84% in rural areas. The population is heavily concentrated in the plains region around Phnom Penh and along the Mekong River and Tonle Sap Lake, emphasising the importance of water bodies for the whole country.

Administratively Cambodia is divided into 24 provinces, including four municipalities that are divided into 183 districts. Districts are further divided into approximately 1,615 communes and 13,406 villages. Most villages are relatively small, with two thirds having a population of between 1,000 and 2,000 persons.

Economically, Cambodia relies heavily on the agricultural sector. However, the share of agriculture in gross domestic product (GDP) decreased from 55.6% in 1990 to 37.1% in 2000. The share of industry in GDP was 20.5% in 2000 while that of the services sector was 42.4% in the same year. The significance of agriculture is even greater in relation to employment, with more than 70% of the population aged over 15 years working in the agricultural sector (which includes agriculture, fisheries and forestry).

Cambodia's GDP, which was US\$3.2 billion in 2000, recorded an annual growth rate of 5% from 2001 to 2003. In 2004, the rate is estimated to have declined to 2%. With a low per capita GDP of some US\$270, Cambodia is one of the poorest countries in the world. Furthermore, Cambodia's existing natural resources and domestic revenue generation capacity are currently severely limited (table 2).

Table 2: Key Social and Energy Statistics

Category	Key Statistics
Country area	181,035 km ²
Population (2000)	13.1 million
GDP/per capita (1995)	US\$272
GDP growth rate	2%
Electricity use	35 (kilowatt-hour/year/per capita)
Electrification ratio	7-10%
Main source of power	Thermal diesel), 99%
Technical hydropower potential	41,000 gigawatt-hour/year
Percentage utilized	0.001%

Source: World Bank Energy and Mining Development Unit, East Asia and the Pacific Region, *Power Trade Strategy for the Greater Mekong Sub-region*, 1999.

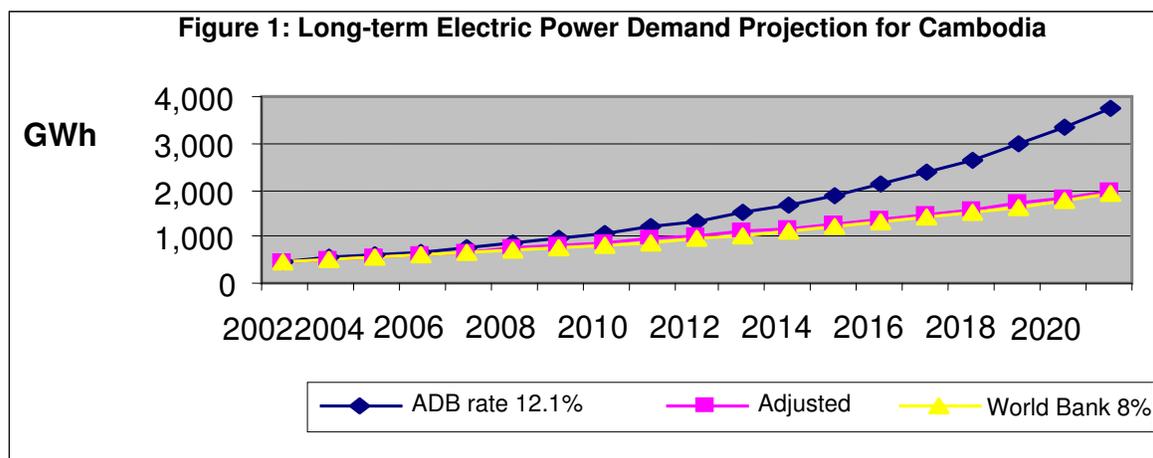
Cambodia has the lowest electricity consumption rate of about 35 kilowatt-hours (kWh) per capita per year, with only 7% of the population having access to a reliable electricity supply. Demand is mainly suppressed by the lack of generation capacity and/or lack of a transmission and distribution system. Given the current and projected per annum economic growth rates as well as the present low level of per capita energy consumption, the demand for energy will continue to increase in Cambodia.

The cost of producing electricity is approximately US\$0.11 per kWh, compared with US\$0.7 in Viet Nam. Commercial and industrial users in Cambodia are charged US\$0.21 cents per kWh (cross-subsidizing consumers who are charged about US\$0.9) or they install their own generation plants. The majority of consumers are in Phnom Penh and the key provincial towns. The high cost of electricity reflects the almost total

dependence on imported oil-based fuel as the primary energy source as well as the lack of a high voltage transmission system. There are 24 separate power systems centered on Phnom Penh and the provincial towns, with only one large system in the capital that is operated by EDC. EDC has 50 megawatt (MW) of diesel plants in Phnom Penh and buys power from a 35-MW independent power producer (IPP). EDC is also progressively assuming responsibility for power supply in the provinces, controlling systems in Siem Reap, Sihanoukville, Kompong Cham, Takeo and Battambang. In the remaining 17 provinces, power is supplied by a mix of public and private operators.

2.6 Energy Demand Growth and Hydropower Potential

Demand is one of the critical elements in the analysis of future electric power development in a country, since demand drives the requirement to install new generating facilities and governs the level of operation of generating units. It is obvious that the electricity supply in Cambodia will have to continue growing in order to support economic growth, demographic change (population growth and urbanization) and improved electrification. Cambodia's electric power demand grew at an annual rate of 10% between 1995 and 1997, and then increased to an average of 13% annually until 2001 when it began to decline. However, different projections have been made for energy demand growth from 2002 onwards (figure 1).



Note: Based on electricity demand growth rate estimates by the Asian Development Bank (2001), the World Bank (1999) and the Japan Science and Technology Agency CREST Project (2004).

2.7 Hydropower Potential

The total technically/theoretically exploitable hydropower potential of Cambodia is estimated by the Asian Development Bank (ADB) to be 41,000 GWh/year or 8,000–10,000 MW in installed capacity, distributed among 35 to 40 sites (see, for example, “Hydropower Development Strategy”, Mekong River Commission, 2001). Hence, the potential seems to be much higher than the projected demand shown in figure 1. However, much less than half of this theoretical potential will be economically, socially and environmentally feasible if (a) each project is subjected to a more careful/strategic assessment of local/transboundary environmental and social impacts, and (b) the costs

and economic benefits are more vigorously evaluated in the light of other available sources of energy.

Moreover, those estimates include the proposed dams on the mainstream, including the 3,300 MW Sambor hydropower study; however, projects of that scale are unlikely to be developed in the next few decades, due to various reasons including the complicated social, economic/financial, environmental and political considerations. Yet, the hydropower potential still represents a huge generating capacity if it is properly planned and developed, and its impacts/benefits equitably managed.

3. Overview of Policy Related to Water Resource Management/Dams

3.1 Legal and Regulatory Framework for Water and Hydropower

From 1970, Cambodia experienced more than 20 years of social unrest and war. Worse, between 1975 and 1979, the Khmer Rouge regime caused immense suffering and loss of life among the country's human resources as well as virtually total destruction of the legal and institutional system, infrastructure and economy, and serious mismanagement/abuse of natural resources. With the return of peace, the 1990s were marked by the immediate need to rehabilitate the country, including the policy and legal frameworks for water resource management.

However, during the past 12 years, the development of water resource policy and law has had to compete with the extremely busy schedules of the Government and Parliament, which appeared to perceive that fulfilling the institutional requirements for attracting investment, joining the Association of South East Asian Nations and the World Trade Organization, and arranging the Khmer Rouge Tribunal, for example, had much higher priorities. As a result, there is only a limited legal and policy framework governing water resource management and dam development.

The management of water resources and dams is mainly regulated by government by-laws (sub-decrees), regulations and informal rules. Recently, legislation of relevance to a number of water sectors was adopted, but many more laws, especially those that promote more comprehensive/cross-sectoral and participatory water resource management, are urgently required (table 3).

In Cambodia, national development plans are formulated mainly for five-year periods. Such plans include:

- (a) The Five-Year Socio-Economic Development Plan, 2001–2005;
- (b) The National Environmental Action Plan, 1998–2002;
- (c) The Rectangular Strategy for Growth, Employment, Equity and Efficiency, 2003–2008;
- (d) The National Water Policy (the policy does not indicate whether it is long term or short term);

- (e) The Strategic Plan on Water Resources Management and Development, 2005–2008; and
- (f) The National Biodiversity Strategy and Action Plan (the Plan does not make it clear whether it is short term or long term).

These plans and policies are highly relevant to water resource management and dams.

Most of Cambodia’s policies and plans, as mentioned above, focus on economic development, poverty reduction etc. Although there is no specific policy on dams, related policies and plans include (a) the Water Policy, (b) the Strategic Plan on Water Resource Management and Development, (c) the draft National Policy on Renewable Energy-based Rural Electrification, and (d) the draft Strategy on Renewable Energy-based Rural Electrification in Cambodia.

Table 3 summarizes key legislative and policy documents related to water resources and dam management.

Table 3: Key Policy and Legal Documents Related to Water Resource Management and Dams

Supreme Law	Key Provisions Relevant to Dam Development	Comments/Analysis
Constitution	<p>Article 59: The State shall protect the environment and balance of abundant natural resources and establish a precise plan for management of land, water, air, wind, geology, ecological system, mines, energy, petroleum and gas, rocks and sand, gems, forests and forestry products, wildlife, fish and aquatic resources.</p> <p>Chapter III on the Rights and Obligations of Khmer Nationals</p> <p>Article 32 states that “every Khmer citizen has the right to life, personal freedom, and security.”</p> <p>Article 35 states that “any Khmer citizen of either sex shall have the right to participate actively in the political, economic, social and cultural life of the nation” and “any suggestions from the people shall be given full consideration by the grant of the State”.</p> <p>Article 39 states that “Khmer citizens shall have the right to denounce, make complaints or file claims against any breach of the law by State and social organs or by member(s) of such organs, committed during the course of their duties. The settlement of complaints and claims shall be by the competence of the courts.”</p>	<p>Chapter III can serve as a basis for public participation and access to information about legislation/regulations.</p> <p>This provision guarantees the right of Cambodian citizens to live in a sound environment.</p> <p>The provisions of these two Articles refer to the establishment of relevant communities and civil society that have usually provided their inputs, suggestions and complaints, reflecting their participation in political life of the nation.</p>

Policy Framework	Key Provisions Relevant to Dam Development	Comments/Analysis
<p>Rectangular Strategy for Growth, Employment, Equity and Efficiency, 2003–2008</p>	<p>Build Cambodian society by strengthening peace, stability and social order, entrenching democracy, promoting respect for human rights and dignity, ensuring sustainable and equitable development, and strengthening Cambodia’s social fabric to ensure that the Cambodian people are well educated, culturally advanced, engaged in dignified livelihoods and living in harmony in family and society. This includes:</p> <ul style="list-style-type: none"> (a) Enhancement of the agricultural sector, which covers (i) improved productivity and diversification of agriculture, (ii) land reform and clearing of mines, (iii) fisheries reform and (iv) forestry reform. (b) Further rehabilitation and construction of the physical infrastructure, involving (i) further restoration and construction of the transport infrastructure (inland, marine and air transport), (ii) the management of water resources and irrigation, (iii) the development of energy and power grids, and (iv) the development of information and communication technology. (c) Private sector development and employment generation, which covers (i) strengthening the private sector and attracting investments, (ii) the promotion of SMEs, (iii) the creation of jobs and ensuring improved working conditions; and (iv) the establishment of social safety nets for civil servants, employees and workers. (d) Capacity building and human resource development, including (i) the enhancement of quality of education; (ii) the improvement of health services, (iii) fostering gender equity, and (iv) the implementation of a population policy. <p>Install hydropower plants at Kamchay, Stung Battambang, Stung Atay and Stung Russey Chrum.</p> <p>In developing hydropower resources, the Government will carefully analyze all aspects involved, especially the economic benefits, and environmental and social impacts.</p>	<p>Most policies focus on economic development.</p>

Policy Framework	Key Provisions Relevant to Dam Development	Comments/Analysis
	<p>Key thrusts for sustainable management of water resources and dams include:</p> <ul style="list-style-type: none"> (a) Strengthening and promoting the implementation and enforcement of laws on water resources management and environmental protection, sub-decrees and other regulations related to the control and prohibiting of all construction projects that have an adverse impact on water resources and eco-systems; (b) Developing and applying procedures for social and environmental impact assessment and mitigation that are consistent with those applied by the principal international organizations active in Cambodia; (c) Preserving the river flows and minimum water level of rivers, streams and lakes to protect the ecosystems, social and cultural values, and navigation; and (d) Giving comprehensive consideration in all water resources developments to ensuring unimpeded fish migration. 	
<p>Second Five-Year Socio-economic Development Plan, 2001–2005</p>	<p>For example, the primary strategic requirement in the power sector has been to identify and develop alternative, lower-cost sources of energy, including:</p> <ul style="list-style-type: none"> (a) Conversion, where feasible, of diesel plants to heavy fuel oil; (b) Rehabilitation of the 12 MW hydropower plant in Kompong Speu province and the 115 kV transmission line supplying Kompong Speu town and Phnom Penh; (c) The establishment of a high voltage 220 kV interconnection with Viet Nam to supply Phnom Penh; (d) The investigation of lower voltage cross-border transmission lines to supply Cambodian towns along the borders with Thailand and Viet Nam. 	

Policy Framework	Key Provisions Relevant to Dam Development	Comments/Analysis
Strategic Plan on Water Resource Management and Development	<p>The objectives of the Plan are to (i) manage and develop water resources in an effective, sustainable and equitable manner, (ii) protect ecosystems, and (iii) reduce the effect of water-related hazards such as floods and drought on lives and public property.</p> <p>The key elements of the strategies are:</p> <ul style="list-style-type: none"> (a) Water resources information management. (b) Water resources management and development. (c) Flood and drought management. (d) Promotion of water legislation and sustainability. <p>Water resources management and development include:</p> <ul style="list-style-type: none"> (a) The rehabilitation and reconstruction of the existing irrigation system, extending the land areas served by sustainable irrigation and/or drainage systems; (b) Expanding the surface area of water storage (dams, reservoir, ponds), channel capacities and drainage systems to ensure water supply and environmental sustainability; (c) Mobilization of participation by farmers, stakeholders and the private sector; (d) Promotion and facilitation of access to knowledge about the preparation and implementation of river basin development and management plans, and participation by line agencies and stakeholders in such activities; (e) Development of water-use capacity in farming communities; and (f) Promotion of investment by international funding agencies and the private sector in supporting participatory irrigation management and development. 	
Land Policy Framework (Statement by the Government)	<p>The Land Policy Framework includes:</p> <ul style="list-style-type: none"> (a) Strengthening land tenure security and land markets, and preventing or resolving land disputes; (b) Managing land and natural resources in an equitable, sustainable and efficient manner; and (c) Promoting equitable land distribution. 	

Policy Framework	Key Provisions Relevant to Dam Development	Comments/Analysis
<p>National Forest Policy on Forest Reform: Rectangular Strategy for Growth, Employment, Equity and Efficiency</p>	<p>The goal of the forestry sector strategy will ensure sustainable forestry management based on the following three pillars:</p> <ul style="list-style-type: none"> (a) A sustainable forest management policy, to ensure the rational and strict monitoring of forest exploitation according to international best practices in forest management, which requires adequate forest reserves for domestic consumption, protection against drought and floods as well as wetlands that serve as fish sanctuaries; (b) A protected areas system, to protect biodiversity and endangered species; and (c) A community forestry system that will serve as a sound, transparent and locally managed program. 	
<p>National Energy Policy, 1999–2016.</p> <p>This strategy focuses on significant development of new generating capacity, based on diesel, gas and hydropower resources, and imports of additional power supplies from Viet Nam and Thailand. The Government says it will rely largely on private sector involvement to implement this strategy.</p>	<p>The objectives of the National Energy Policy are:</p> <ul style="list-style-type: none"> (a) To provide an adequate supply of energy throughout Cambodia at a reasonable and affordable price; (b) To ensure a reliable, secure electricity supply at prices that facilitate investment in Cambodia as well as development of the national economy; (c) To encourage the exploration and environmentally and socially acceptable development of energy resources needed for supplying all sectors of the economy; and (d) To encourage efficient use of energy and minimize detrimental environmental effects resulting from energy supply and use. <p>The specific aims in regard to the power sector are:</p> <ul style="list-style-type: none"> (a) To re-establish and adequate supplies of electricity nationwide through direct support of donors and private participation in power generation; (b) To strengthen managerial and implementation capability of the sector; (c) To create the environment required for sustained and efficient development of the power sector, open to competition and private participation; <p>To extend power sector objectives to rural areas.</p>	

Policy Framework	Key Provisions Relevant to Dam Development	Comments/Analysis
Renewable Electricity Action Plan	<p>The Plan calls for the expansion and upgrading of electricity services in rural areas by helping energy entrepreneurs to access the skills, finance and investment needed to develop Cambodia's sources of renewable energy.</p> <p>A rural electrification and transmission project was started in early 2004, funded mainly by loans from the World Bank and ADB). The project comprises an ambitious and wide-ranging upgrade of all aspects of Cambodia's power sector, including building a high voltage transmission line to import power from Viet Nam, and the extension of medium voltage distribution lines in rural areas.</p>	
Legislation	Key Provisions Relevant to Dam Development	Comments/Analysis
Draft Water Resources Law	<p>Article 11 provides the Ministry of Water Resources and Meteorology with the authority to issue licenses for water use and water works construction (dams and irrigation systems).</p> <p>The licenses can be revoked by the Ministry of Water Resources and Meteorology whenever a water construction project is deemed unstable/unsound or likely to cause danger to the nation (Article 16).</p>	<p>This draft law is currently delayed in Parliament.</p> <p>Other water agencies feel that if this law is adopted in its current form, it would confer too much authority to the Ministry as both water user controller and license regulator.</p>
Law on Environmental Protection and Natural Resource Management	<p>Chapter III (Articles 6 and 7) establishes the general requirements for an EIA.</p> <p>Article 6 gives very broad authority to the Government to define those requirements by sub-decree (proposed by the Ministry of Environment).</p> <p>Articles 16–18 provide for public participation and access to information; however, further elaboration is required by sub-decree.</p>	<p>In force since 24 December 1996. However, many more by-laws are required to improve the implementation and enforcement of this law.</p>
Land Law	<p>Article 5 protects landowners from ownership deprivation unless such action is in the public interest.</p> <p>Article 144 guarantees the right of the owner of lower land in receiving water flowing from higher land.</p> <p>Article 146 requires the owners of land located along watercourses to allow running water to flow to neighboring land.</p>	<p>Came into force on 30 August 2001. To date no landowner affected by the construction of a dam. However, the registration of land title deeds is quite slow.</p>
Draft Law on Protected Areas Management	<p>Protected areas could be divided into different zones and economic development activities could be allowed in certain zones.</p>	<p>The draft law is still under review by the Cabinet. There have been discussions on whether or not economic activities should be allowed in protected areas.</p>

Sub-decree/By-law	Key Provisions Relevant to Dam Development	Comments/Analysis
Sub-Decree on the EIA Process	<p>This sub-decree provides a long list of the types and activities of projects, including their size and capacity, which will require an EIA.</p> <p>According to this sub-decree, hydropower projects that have the capacity to generate more than 1 MW and irrigation systems for more than 5,000 hectares of irrigated land will be subject to an EIA.</p>	<p>11 August 1999.</p> <p>It is not clear whether these requirements will be able to regulate the impacts on the physical and social environments if many projects with a capacity of less than 1 MW are constructed</p>
Law on Investment in the Kingdom of Cambodia, 1994	<p>Provides economic incentives to encourage investment in physical infrastructure and energy, and environmental protection. The incentives include the exemption, in whole or in part, from custom duties and taxes.</p>	<p>Incentives for, or tax rates on investment in the exploration and exploitation of natural resources, timber, oil, mines, gold and precious stones will be specified in separate laws.</p>
Law on Land Management, Urbanization and Construction, 1994	<p>Article 12 prohibits individuals as well as public authorities from conducting any construction work in or by water reservoirs and water dams, reserved mining areas and forest zones.</p>	<p>It is unclear whether this law can prohibit construction in forest zones. No clear definition of forest zones is provided in this law.</p>
Sub-decree No. 86 ANK, December 1997, on Construction Permits	<p>This sub-decree specifies the competent authorities responsible for issuing construction permits.</p> <p>According to this sub-decree, construction permits can be issued by local and national level authorities, depending on the type and size of each project.</p>	<p>This sub-decree provides a mandate to the central level authorities to issue permits for significant construction projects. For example, the Ministry of Water Resources and Meteorology can issue a permit for a dam project or irrigation system.</p>

3.2.1 Institutional Structure and Arrangements

The institutional structure and arrangements in Cambodia are highly compartmentalized and they lack mechanisms for coordination and feedback among key agencies dealing with numerous water resources management activities. In addition, there is no clear definition of the regulatory and development functions. Table 4 lists the key agencies and their main functions related to water resource management and dam development.

Table 4: Key National Ministries and Agencies Dealing with Water Resources Management and Dam Development

Ministry	Department	Function	Comments
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3.3 Water resource and dam management elements in related plans and policies

Elements of water resource and dam management are provided for in related plans and policies, such as sector plans for energy, agriculture and environment. When reviewing such plans and policies, no specific policy guidelines or regulatory framework for dam management can be found. However, they do provide some limited references to developing an adequate policy and regulatory framework for supporting implementation of the Strategic Framework for Dams and Development in line with WCD recommendations.

The existing policy documents, such as the “Rectangular Strategy”, reflect the political will and commitment of the Government to promoting and encouraging research and studies of small-, medium-, and large-scale hydropower development. This includes water use potential, the promotion of hydropower investment and exploitation, and the commitment of the Government to “carefully analyze all aspects involved, especially the economic benefits, and environmental and social impacts” in developing hydropower resources. The Government’s strategy also reflects the concept of sustainability, especially the conservation and sustainable use of natural resources and biodiversity in the economic development of Cambodia.

According to Cambodia’s draft Water Policy of 2004, the main thrust of the current policy is:

- (a) The promotion of equitable sharing and allocation of water use among key sectors, and the introduction of the laws, regulations, and procedures necessary to achieving these goals. This includes recognition of the particular interests of women, as the principal givers of care in most households, in water supply, food, and hygiene;
- (b) To apply fees and/or issue licenses for water use by enterprises (i.e., legal persons, entities and factories etc.), where deemed necessary to conserve water resources, navigation, aquaculture and minimum flows for ecosystem maintenance, and administering them in a consistent and timely manner;
- (c) Sharing of water during periods of water shortage, normally in the following order: domestic and municipal uses; irrigation; hydropower; and industry and small-scale manufacturing;
- (d) Taking international agreements into account in the use and allocation of water during periods of water shortages in rivers and streams along the border with a neighboring country.

3.3.1 Water for Agriculture

Cambodia’s population is predominantly rural and agricultural. Every year, farmers face water shortages, drought, and flooding, all of which have a major impact on agricultural production. Currently, the irrigation infrastructure is in poor condition and is not capable of providing adequate water for agricultural production. Participation by beneficiaries in the planning, construction, management and operation of irrigation, drainage and flood control infrastructure is limited.

To address the above issues and ensure the provision of sufficient water for agricultural production, the Government has formulated the following policies:

- (a) Provide farmers with the required quantity of water, when and where they need it, and within the limits of available water resources and technology;
- (b) Promote the rehabilitation and construction of irrigation, drainage, and flood management infrastructure, in order to supply sufficient water for agricultural production and to alleviate the adverse consequences of excess water;
- (c) Promote the development and extension of appropriate water management technologies that are particularly suited to rain-fed agricultural areas, such as water harvesting, improvements to the moisture-holding capacities of soils, and the use of farm ponds;
- (d) Strengthen and expand Farmer Water User Communities, to enable them to participate in water management and allocation, and maintain irrigation infrastructure with effectiveness and sustainability; and
- (e) Minimize the impact on water resources caused by the use of chemical substances in agricultural production by encouraging people to implement diversified agriculture.

3.3.2 Water for energy

Cambodia has the potential for developing an estimated 10,000 MW of hydroelectric power, of which 50% is in the main river, 40% in the tributaries and 10% in the coastal area. However, only 13 MW has been developed so far, at Ochum II (1 MW) and Kirirom I (12 MW).

To address the above issues, and gain full advantage from water resources, the Government has formulated the following policies:

- (a) Promote and encourage research and studies on small-, medium-, and large-scale hydropower development, including costs and benefits, with regard to potential water use by hydropower projects; and
- (b) Promote investment in, and exploitation of small-, medium-, and large-scale hydropower development projects, including those that meet the needs for affordable electricity in poor, remote and/or small communities.

3.3.3 Water for the Environment

Water is an important production factor for industry, small manufacturing enterprises, and services. However, water fees do not usually comprise a large percentage of total costs. Some may place a heavy demand on a water resource as a whole when they dispose of wastewater, by presenting a potentially serious threat to the quality of receiving waters, both surface water and groundwater. Cambodia has introduced legal instruments to do so. Technology for wastewater management —

including re-use, recycling, and in-plant waste treatment — is developing rapidly. However, in practice, implementation may be more difficult because (i) institutional capacity for enforcement needs further development, and (ii) many establishments have primitive waste management facilities and/or are not connected to municipal sewer systems.

To address these issues and eliminate pollution as well as manage and conserve water resources, the Government has formulated the following policies:

- (a) Determine the location and quantity of water sources available for industry, small manufacturing enterprises and services;
- (b) Manage water resources to ensure that industry, small manufacturing enterprises, and services have access to the needed quantities of water of appropriate quality;
- (c) Require the construction of wastewater treatment systems in industrial development areas in order to reduce the discharge of contaminants into natural water bodies;
- (d) Promote, encourage and facilitate the development of new technology for water supply and wastewater management, including in-plant wastewater treatment, re-use, and re-cycling; and
- (e) Minimize the impacts on water quality caused by industrial development, through measures such as defining water quality standards, regulations for wastewater and storm water management, and water and wastewater licensing.

3.3.4 Water for Domestic Use

Increasing public access to safe water and sanitation is a key objective of the Government's poverty alleviation strategy. However, the delivery of safe water requires the availability of water sources of sufficient quantity, acceptable quality, and/or appropriate treatment.

To address the above issues and to guarantee delivery of adequate water, the Government has formulated the following policies:

- (a) Continue to take full account of water management and delivery, and give first priority to the need to provide safe, adequate drinking water, hygiene and sanitation to all people;
- (b) Strengthen and extend water supply systems in urban and densely populated areas;
- (c) Encourage and facilitate private investment in the rehabilitation and construction of water supply systems in rural, urban and densely populated areas;

- (d) Promote public education on the benefits of hygienic water use, especially among people in rural areas;
- (e) Promote and facilitate the construction or rehabilitation of wastewater treatment systems in urban areas and densely populated areas, with piped sewage to wastewater treatment plants, in order to reduce water contamination; and
- (f) Encourage and facilitate research into, and development of low-cost water technology that is appropriate to Cambodian circumstances, particularly for application by people in rural areas to meet their own needs for a safe water supply.

3.3.5 Water for Navigation and Tourism

Cambodia has an extensive network of rivers and lakes, particularly in the Central Plain, which are navigable for at least part of the year. Water transport is an extremely low-cost method of moving bulk products over long distances.

There have been many recent changes in the natural environment. Changes in the hydrological regime, morphology and sedimentation of rivers, streams and lakes may restrict navigation, tourism and water transportation. However, the development and management of river works, hydro-meteorological information systems, and budgets for relevant studies and research activities are still limited.

To address the above issues and ensure navigation, tourism and water transportation are not affected, the Government has formulated the following policies:

- (a) Promote the use of the nation's watercourses, both natural and artificial, for bulk water transportation, tourism, and cruises;
- (b) Take into account the managing of water flows and levels in river channels, estuaries, lakes, canals, reservoirs and the ocean, and the effect on actual or potential use for navigation and tourism. The design and implementation of short-, medium-, and long-term water resources development projects will, as far as possible, provide for navigation and tourism; and
- (c) Promote dredging in critical locations while making every effort to protect and conserve natural water bodies and waterways for navigation and tourism.

3.3.6 Flood and Water-Related Hazards

Every year, in one or more parts of the country, lives are lost as a result of flooding, and private households, commercial establishments, and public property suffer damage. During the dry season, most regions of Cambodia suffer from severe drought, or the quality of water is below the standard required for drinking supplies. Accidental pollution in the upstream stretch of the Mekong River has not yet affected the Mekong River system, but increasing economic activities and growing use of the upper stretch of the Mekong River implies a growing risk that this problem will occur.

Cambodia has formulated the following policies on introducing hazard mitigation measures:

- (a) Promote, study and construct flood protection embankments and drainage systems for the purpose of minimizing natural disasters related to water;
- (b) Apply non-structural methods of flood mitigation in all locations where they will provide the most economical approach, and ensure their effectiveness through effective channels of communication, public information, and community education;
- (c) Respond immediately in areas that are suffering from severe drought, flooding or other water-related hazards;
- (d) Encourage the public as well as institutions at all levels to participate actively in flood mitigation measures through appropriate and effective means such as providing safe high land areas, materials and earth-moving machinery, education on and demonstrations of new technology; and
- (e) Participate actively in regional and international programs aimed at mitigating the impacts of water-related hazards.

In order to prevent and mitigate water-related hazards, the Government needs accurate data and information for forecasting future conditions. Cambodia needs a more comprehensive national data and information base to enable forecasting and analyses of floods and drought to be undertaken for the purpose of hazard mitigation. To address the above issues, and ensure effective forecasting, the Government has formulated the following policies on preventing and mitigating water-related hazards:

- (a) Strengthen and extend the hydrological and meteorological systems that provide the technical basis for responding to hazards such as climate change and floods as well as delimiting flood-prone areas, defining the frequencies of hazardous weather conditions etc.;
- (b) Provide short-, medium-, and long-term forecasts of drought, flooding and storms for the public and related institutions. Forecasts and warnings of meteorological conditions, including drought, will be provided to the whole country. Flood warnings will be provided to those places at risk from flooding; and
- (c) Consider some beneficial combinations of structural and non-structural measures.

3.4 Public Access to Information and Public Participation in Decision-Making

Article 35 of the Constitution of Cambodia states that Khmer citizens of either sex have the right to participate actively in the political, economic, social and cultural life of the nation. Any suggestions from the people will be given full consideration by the grant of the State.

The “Rectangular Strategy for Growth, Employment, Equity and Efficiency” regards good governance as its cornerstone as well as the most important pre-condition to economic development with sustainability, equity and social justice. This was emphasized by Prime Minister Hun Sen during his address to the first Cabinet meeting of the Third Legislature of the National Assembly in July 2004, when he said “good governance requires a wide participation, enhanced sharing of information, accountability, transparency, equality, inclusiveness and the rule of law”.

In its Strategic Platform, the Government recognizes that implementing decentralization to the commune is crucial not only to the strengthening of democracy at the grassroots level, but also to improving the quality of public services and participatory local development in all sectors. As pointed out by Prime Minister Hun Sen during his address to the first Cabinet meeting of the Third Legislature of the National Assembly in July 2004, the key priorities in local governance is the building up of local management capacity, the provision of reasonable levels of financial resources to the communes, and the promotion of a culture of participation. However, making this noble vision a reality will require much greater substantial action and a drastic change of mindset and attitude on the part of the bureaucrats and leaders.

Public awareness is an important issue that is recognised in the water policy. In Cambodia, public understanding and basic knowledge about the benefits of water and the problems caused by water are limited, and the availability of programs related to water in educational institutions is inadequate. Moreover, participation by users and stakeholders in protecting, conserving, managing and using water is minimal while the contribution concept and the payment of water service fees are low.

Chapter 7, Article 16 of the Law on Environmental Protection and Natural Resource Management states: “The Ministry of Environment shall, following proposals by the public, provide information on its activities, and shall encourage participation by the public in the environmental protection and natural resource management.” This means that the public has the right to access information and provide inputs on environmental matters, and the Government is required to issue a sub-decree on procedures for public participation (Article 17). However, to date, such a sub-decree on public participation has not been issued. Due to the lack of a clear procedure for public participation, the public has difficulty in learning how to use the right of access to information as well as participate in decision-making on the protection of the environment and natural resource management.

The sub-decree on public participation, as required by the law on environmental protection and natural resource management, is long overdue. There are 70 communities in protected areas around the country, of which 14 have been officially recognized by Administrative Regulations (*Prakas*) of the Ministry of Environment. The main objective of establishing these communities is to provide the right to protect and make rational use of natural resources and biodiversity in the protected areas where the villages or communes are located. However, no legal instrument exists for ensuring the rights and powers of the community members to protect such natural resources and biodiversity. A sub-decree specifying those rights and powers is therefore urgently needed.

Some resource management agencies are integrating civil society oversight and participation into their management systems. The strongest accountability and oversight

provisions are mandated in the Sub-decree on Forest Concessions Management, which requires consultations with local communities and public disclosure of submitted management plans for comment. In addition, independent monitoring of forest crime as well as reporting and follow-up have been instituted. Monitoring has highlighted the resistance to processing cases involving senior state officials or powerful business interests. The difficulties experienced in implementing these provisions in the forestry sector demonstrate the challenges faced in instituting a culture of transparency and accountability in natural resource agencies, whose assumed mandate extends beyond implementation, but without the existence of effective, external oversight institutions.

The ability of local communities to influence the use of resources that can affect their lives and livelihoods needs strengthening. In this connection, a number of ideas and proposals are under consideration. They include a “provincial forum”, the strengthening of District Integration Workshops, greater input by commune authorities as well as support/facilitation for those authorities. The need to help local communities focus on development priorities that are most relevant to their communes as well as holding national officials accountable for delivering services that meet these goals are the keys to resolving this issue.

3.5 Environmental Impact Assessments

In its “Rectangular Strategy”, the Government has committed itself to carefully analyzing all aspects involved in developing hydropower resources, especially the economic benefits and the environmental and social impacts.

3.6 Bilateral and Multilateral Cooperation

With regard to bilateral and multilateral cooperation, three critical questions need to be considered. These are:

- (a) Do policies and plans provide for bilateral or multilateral cooperation to manage shared water resources, including managing the impact of dams on downstream States?
- (b) If so, what are the key elements?
- (c) Are they in conformity with international agreements?

3.6.1 Policy on International Cooperation in Managing Shared Water Resources

Cambodia shares the Mekong River with six countries — China, Myanmar, the Lao PDR, Thailand, and Viet Nam. Four of these six riparian countries are Parties of the 1995 Mekong Agreement. Cambodia is one of the countries located furthest downstream. Given the country’s recent history of controversies and damage caused by dam development and operation in the Central Highlands of Viet Nam, Cambodia needs the best protection and safeguards that international instruments can provide. The WCD Strategic Framework for Dams and Development is well suited to meeting this need. Nonetheless, internally, Cambodia will have to adopt a number of key policy and legislative/regulatory changes in order to create a more enabling environment for implementing the Strategic Framework. Cambodia needs all the support it can get to materialize this vision and its recommendations.

In managing the shared Mekong River water resource, the Government has set forth following policies:

- (a) Take the necessary measures and use all possible means for close cooperation with other countries that use water from rivers and streams, and ensure effective and sustainable water use with regard to securing mutual benefits;
- (b) Collaborate fully with neighboring countries in striving to achieve the aims of the 1995 agreement on cooperation in the sustainable development of the Mekong River basin;
- (c) Integrate Cambodia into the international arena in the water sector, and use all available opportunities, particularly through international organizations — the United Nations Educational, Scientific and Cultural Organization, the World Meteorological Organization, ADB, the World Bank, the Greater Mekong Sub-region, and the United Nations Economic and Social Commission for Asia and the Pacific — in promoting cooperation and international understanding in the water sector; and
- (d) Continue cooperating fully with the three neighboring countries that have streams as boundaries as well as with the Cambodia National Mekong Committee, the Mekong River Commission and the National Committee for the Boundary, with a view to reaching the targets fixed by the present policy.

The Ministry of Environment, which is responsible for EIA reports on the development project, in collaboration with Cambodian National Mekong Committee, provided inputs and comments on the Nam Theun 2 hydropower project of the Lao PDR. The comments provided by Cambodia to the Lao PDR reflected the implementation of the provisions of the 1995 Mekong Agreement and the Procedures for Notification, Prior Consultation and Agreement, and were consistent with the guiding principles stated in the existing legal documents. These principles included: (a) ensuring sovereign equality and territorial integrity; (b) equitable and reasonable utilization; (c) no substantial adverse impacts; (d) respect for rights and legitimate interests; (e) good faith; and (f) transparency.

3.7 Analysis of the Interrelationship between the Policies/Plan

An analysis of the interrelationship between the policies/plan described in the sections above that:

- (a) There is no detail and clear policy and strategy on dams management;
- (b) Hydropower policies are provided in the national Water Resource Policy and the policy on renewable energy instead of being stated in a specific policy on hydropower;
- (c) There is a comprehensive policy and a strategic plan on water resource management;

- (d) Public participation in the EIA process for development projects for irrigation systems, hydropower or flood management systems is still not clear and very limited (e.g., when should public participation occur in the EIA process, how should that participation be reported on, how will public inputs be incorporated in the final project/programme document etc.);
- (e) Cambodia is party to the United Nation Convention on Climate Change and the Kyoto Protocol on that Convention, and that investment in Clean Development Mechanism scheme will be promoted. Hydropower development is one of projects under the Clean Development Mechanism as well as one of the high-priority renewable energy development projects. There should be a clear and specific policy on dams/hydropower as well as specific regulations on these issues; and
- (f) Most of the key elements in energy policies focus on the economic aspects, such as generating more power and reducing the electricity tariff for electricity users. The policies should be balanced between economic benefit and the broader social and ecological aspects.

4. Overview of Legislation Related to Water Resources Management and Dams

This section provides a review and analysis of the legal and regulatory aspects of water resource/dam management in Cambodia. Disparities, conflicts and inconsistencies among legal instruments within the country are identified and analyzed. The successful implementation of policies and legislation is highly dependent upon support from all sectors of society. It is imperative that policies and laws provide for effective monitoring, consistent enforcement, institutionalization within the Government and administrative flexibility. The fundamental problem is that the capacity to enact policies and legislation outstrips the ability and/or the willingness to monitor and enforce them.

4.1. Ownership and the Use of Rights to Land/Water Resources

Land ownership and the rights to use water resources are guaranteed by Cambodia's Constitution of 1993 and the Land Law of 2001. Article 44 of the Constitution states that "all persons, individually or collectively, shall have the right to ownership. Only Khmer legal entities and citizens of Khmer nationality shall have the right to own land".

4.1.1 Protection of Legal Private Ownership

The Constitution states that the public right to confiscate properties from any person will be exercised only in the public interest as provided for under the law, and that it will require due process with fair and just compensation in advance. These rights are reaffirmed by the Land Law of 2001 as follows:

Article 4. The right of ownership, recognized by Article 44 of the 1993 Constitution, applies to all immovable properties within the Kingdom of Cambodia in accordance with the conditions (which are) set forth by this law.

Article 5. No person may be deprived of ownership, unless it is in the public interest. Deprivation of ownership shall be carried out in accordance with the forms and procedures provided by law and regulations, and only after payment of just and equitable compensation.

The rights to the use of water resources are stated in the Land Law as follows:

Article 144. Lower land shall receive waters flowing naturally from higher land. The owner of lower land may not build dams, dikes, barriers or other works to impede the water flow. The owner of the higher land may not do anything that will aggravate the easement of the lower land.

Article 145. The owners of upper land has the right to use and dispose of rainwater that falls on their land as well as waters from sources that are found thereon, except in the case of the provisions of the last paragraph of Article 144.

Article 146. The owners of land situated along flowing waters shall allow the waters to flow to neighboring land, and the owners of neighboring land, in turn, are subject to the same obligation with respect to land that is further away, depending on their agricultural needs.

4.1.2 Analysis

Despite the above-mentioned provisions of the 1993 Constitution and Land Law of 2001 guaranteeing the rights to own land and the protection of landowners from illegal deprivation or confiscation, Cambodia still has a number of issues, identified in the Strategy on Land Policy Framework, that need to be resolved including the following:

- (a) Most private landowners do not have title deeds and the issuance of such deeds is slow and sporadic. The lack of title deeds puts the poor at risk of land grabbing, impedes investment, and delays the development of a land market that could allocate land to those who need and value it most.
- (b) Grabbing of public land by small landholders or powerful interests is widespread due to the lack of title deeds.
- (c) The delineation and demarcation of state land is often unclear, especially with regard to what is “State land” and what is “private state” and “public state” property. Public land protection and exploitation of “public state land” as well as the provision of concessions, leases or transfers (of private state land) for economic development (such as construction of irrigation or hydropower dams) are complicated by the lack of this delineation.
- (d) The land registration system is neither well developed nor transparent. There are overlapping claims and land disputes, which make investment insecure.
- (e) Relevant laws and procedures are inadequate. The development of a strong market economy and a decentralized public administration require a clear legal framework on property rights, transfers, use of state and private land,

and State regulatory powers governing land use. The absence of several necessary legal Acts is allowing the current chaotic situation to go unresolved.

- (f) There are no clear legal binding provisions for handling reparation claims for the loss of private land or resources due to state or state-sanctioned development activities such as dams or irrigation systems. Article 39 of the Constitution states that “Khmer citizens shall have the right to denounce, make complaints or file claims against any breach of the law by the State or social organs or by members of such organs (which are) committed during the course of carrying out their duties. The settlement of complaints and claims shall be the competence of the courts”. If there is no clear legal process providing for the use of rights to submit complaints of such losses, this will create difficulties for affected people.
- (g) A land valuation system is not in place. Land valuation is needed for public purposes of property acquisition, sales and leasing. This is particularly relevant with regard to compensating any person who is deprived of his or her ownership or whose land is confiscated in cases of public interest, as stated in Article 44 of the 1993 Constitution and Article 5 of the Land Law of 2001.
- (h) A benefit-sharing mechanism is not provided in legislation governing the construction and operation of dams, even though the draft Water Resources Law requires the promotion of equitable sharing and allocation of water, and the introduction of the necessary laws, regulations, and procedures for achieving that objective. Such a law and its procedures have yet to be passed.

4.2 Environmental Impact Assessment

4.2.1 Environmental Impact Assessment Regulation

The Ministry of Environment, which was established in July 1993, consists of six departments. Since its inception, the Ministry has developed and strengthened a policy system and legal framework pertaining to environmental protection and natural resources conservation.

The following legislation related to EIA has been passed:

- (a) The Law on Environmental Protection and Natural Resources Management (11 Chapters, 27 Articles). Approved on 24 December 1996.
- (b) The Sub-decree on the EIA Process (8 Chapters, 34 Articles and 1 Annex). Approved on 11 August 1999).
- (c) The Sub-decree on Water Pollution Control (8 Chapters, 39 Articles and 5 Annexes). Approved on 6 April 1999.
- (d) The Sub-decree on Solid Waste Management (6 Chapters, 32 Articles and 1 Annex). Approved on 27 April 1999).

- (e) The Sub-decree on Air and Noise Pollution Control (8 Chapters, 38 Articles and 8 Annexes). Approved on 10 July 2000.

Chapter 3, Article 6 of the Law on Environmental Protection and Natural Resource Management states: “An environmental impact statement shall be done on every project and activity, private or public, and shall be reviewed and evaluated by the Ministry of Environment before being submitted to the Government for a decision. Chapter 3, Articles 6 and 7 of this law state: “An environmental impact assessment shall be carried out on all projects and activities, either private or public, and shall be examined and evaluated by the Ministry of Environment before being submitted to the Government for a decision. This assessment shall also be applicable to those existing activities and those that are under process, and for which their environmental impacts have not yet been assessed”.

The law also states that “every investment project application and proposed project submitted by the State shall enclose with them a preliminary environmental impact assessment or environmental impact assessment as stated in Article 6 of this law. The Ministry of Environment shall consider and make recommendations on the preliminary environmental impact assessment or environmental impact assessment to the relevant competent bodies within a period as determined in the Law on Investment of the Kingdom of Cambodia.”

Article 7 of the Law of Investment in Cambodia requires ministries to review and comment on project investment applications within 45 days from the date that the complete application is submitted. Articles 15 and 17 of the Sub-decree on the EIA process requires the Ministry of Environment to complete its review within 30 official government working days from the date an initial environmental impact assessment (IEIA) or full EIA is received from the project sponsor.

Under Article 18 the Sub-decree on the EIA Process, if the Ministry of Environment fails to report in a timely manner, the project approval institution assumes that the IEIA or EIA complies with the requirements of that sub-decree. Although this requirement protects project sponsors from having to wait for the Ministry to take action, the impact on environmental protection is severe. Therefore, it is extremely important that the Ministry has procedures in place for making a rapid review of applications. Although a project sponsor may go ahead with the project if the Ministry fails to submit a timely EIA report, this does not exempt the sponsor from complying with other environmental laws. For example, if the sponsor develops a hydropower project and subsequently causes pollution in violation of the Sub-decree on Water Pollution Control, the Ministry still has the authority to require the sponsor to correct that violation.

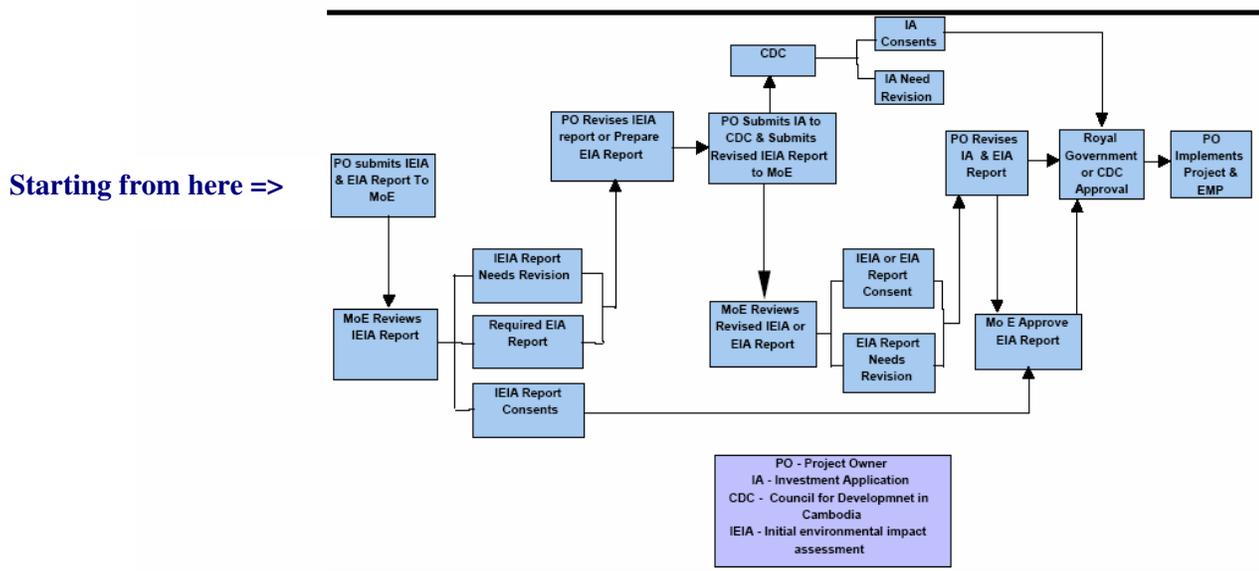
The Sub-decree on the Environmental Impact Assessment Process provides for a long list of project types and activities (plus size and capacity) that require an IEIA or EIA in Cambodia (discussed below). According to the sub-decree, hydropower projects that have the capacity to generate more than 1 MW and irrigation systems that cover more than 5,000 hectares will be subject to EIAs.

4.2.2 Environmental impact assessment system in Cambodia

The stages involved in an EIA in Cambodia are detailed in figure 2. The initial screening process determines which projects will require an EIA or IEIA; only those

projects of a particular size, and which pose a particular threat to the environment, require an assessment. Where it is uncertain as to the need of an EIA, an IEIA is submitted to the Ministry of Environment for review. The Ministry then decides whether a full EIA is required. On completion of the EIA, the Ministry is responsible for approving or rejecting it. The decision is then sent with the EIA to the Government or the Council for Development in Cambodia for consideration of further approval to proceed with development.

Figure 2: Environmental Impact Assessment Process in Cambodia



4.2.3 Types of Projects Requiring an Environmental Impact Assessment

The Law on Environmental Protection and Natural Resources Management states that all projects and activities should be subject to an EIA. However, the Government was of the opinion that this would take too long. For this reason, a list of those projects requiring an IEIA and/or EIA was included in the Sub-decree on the EIA Process. All activities included in the list are a threat to the environment and are divided into separate categories. Table 5 lists the categories together with examples of the types of activities in each category. In terms of activities relevant to this study, the following require an IEIA or EIA: (a) hydropower; (b) irrigation systems; (c) port construction; and (d) dredging.

4.2.4 Difference between an Initial and Full Environmental Impact Assessment

The Environmental Protection Law does not say when an IEIA or a full EIA is required. The Sub-decree on the Environmental Impact Assessment Process provides a little more information in Articles 8 and 22. For both proposed and existing projects, project sponsors begin the process by submitting an IEIA. If the Ministry of Environment determines that the project will have a “serious impact on the natural resources,

ecosystem, health or public welfare,” it can require the project sponsor to submit a full EIA. The sub-decree offers no guidance on what factors are considered in making the determination that a full scale EIA is required. In Article 10, the sub-decree states that guidelines on the criteria on IEIA and full EIA reports preparation will be defined by Administrative Regulations of the Ministry of Environment. The draft EIA Guidelines also do not state when a full EIA is required. It will be helpful if the final EIA Guidelines clarify this point.

4.2.5 Special Necessary and Urgent Projects: No Exception

The Environmental Protection Law does not provide any exceptions to the requirement for an EIA. Article 6 of the Law requires the issuance of a sub-decree that defines the “nature and size” of those projects required to submit an EIA. Thus, under the Law, an EIA will be required if the project is of the nature and size defined by that sub-decree.

However, it would be helpful to establish standards and guidelines that define what is “special, necessary and urgent.” For example, should the exception be limited to government projects or activities (irrigation systems/hydropower or flood management projects)? Alternatively, should it also apply to private projects (such as hotels and factories)?

Table 5: Examples of Projects Requiring an Initial or Full Environmental Impact Assessment

Type of Activity	Size/Capacity
Food, drinks, tobacco	All sizes
Alcohol distilling and beer brewing	10, 000 users
Water supply, sugar refining	
Leather tanning, garments and textiles	All sizes
	All sizes
Textile and dyeing factories	
Garments, washing, printing, dyeing	All sizes
Paper	All sizes
Paper factories	
Pulp and paper processing	All sizes
Plastic, rubber and chemicals	
Pesticide factories	
<u>Other industries</u>	
	1 MW and more
Hydropower	All sizes
Flooding and coastal zones	5, 000 hectares
Irrigation systems	All sizes
Fishing ports	
Infrastructure	All sizes
Port construction	50,000 m3
Dredging	

Source: Ministry of Environment Sub-decree on the Environmental Assessment Process, No. 72 ANK, 11 August 1999.

4.2.6 Responsibilities for Environmental Impact Assessments in Cambodia

Within the EIA process, different government authorities are responsible for the different stages (table 6).

Table 6: Responsibilities for Environmental Impact Assessments in Cambodia

Activity	Responsibility
Screening an IEIA/EIA	Project owner via the relevant ministry or department
Reviewing an IEIA	Project owner via the relevant ministry or department
Reviewing an EIA	Ministry of Environment
Approving an EIA	Ministry of Environment/ governmental institutions and ministries

4.2.7 Preparation of Environmental Assessment Reports

General guidance concerning the presentation of an EIA report has been developed. The contents of an EIA report should include the following chapters:

1. Introduction
2. Project summary
3. Purpose of the project
4. Project description
5. Description of the environment
6. Public participation
7. Environmental impact assessment
8. Environmental mitigation measures
9. Environmental management plan
10. Institutional responsibility
11. Conclusion and recommendations.

Sectoral guidance is currently being developed in draft format under a project financed by the Swedish International Development Agency. The guidelines will cover the following sectors:

- (a) Forestry
- (b) Cement manufacture
- (c) Oil storage
- (d) Tobacco and cigarette manufacturing
- (e) Transmission lines

- (f) Roads and highways
- (g) Irrigation systems.

No guidelines are available at present to assist the Ministry of Environment in reviewing environmental impact reports.

4.2.8 Penalties

The penalty provisions in Articles 30 and 31 of the Sub-decree on the EIA Process are the same as the penalties stated in the Environmental Protection Law. However, Article 29 of the sub-decree provides for a new violation. The Article makes it illegal:

- (a) To knowingly fail to disclose or to misrepresent information that is vital to the EIA process; or
- (b) To fail to implement the Environmental Management Plan.

Under general legal principles, violations and penalties must be directly specified in the Law. In other words, the violations stated in Article 29 properly belong in the Environmental Protection Law, rather than in the sub-decree. Nevertheless, Article 29 of the sub-decree is consistent with the Law, and the Ministry of Environment is obligated to implement and enforce Article 29 until the Law is amended or a court rules otherwise.

4.2.9 Overview of National Experience in Environmental Impact Assessment

Cambodia introduced EIAs in 1995. However, they have yet to become fully established, and experience is limited. A small number of EIAs have been completed in Cambodia, for example on agricultural and rural development projects. So far, EIA reports on the 12 MW hydropower dam in Kirirom, Kompong Speu province, the irrigation system in Trapeang Tmar, Battambang province and Chong Kneas Environmental Improvement Project (including port construction, human settlement and a management mechanism) have been reviewed by the Ministry of Environment (public consultation was also held on the Chong Kneas project). However, challenges still face the Government in the process of developing, screening and reviewing EIA reports.

In terms of managing and enforcing EIA requirements in Cambodia, the EIA Department noted a number of obstacles. First, the EA requirements are not well known, and various sector ministries and project owners therefore are not yet applying them. The authority of the Ministry of Environment to enforce the requirements may also be limited by these circumstances.

Another problem is the limited capacity within Cambodia to conduct EIAs. There are few in-country specialists with experience of EIA reporting and Cambodia's EIA system. As a result, international consulting firms are often contracted (for example, a recent transmission line environmental assessment was completed by a Thai firm). Following on from this, the EIA Department itself does not have the staff capacity to manage and review large EIAs. The Department is currently considering a plan to contract out the review of large EIAs and including the cost in the fee paid by the project owner on submission of the EIA.

Finally, the need for environmental assessment in Cambodia is still seen by several parties as being secondary to the need for development. The significance of carrying out EIAs is therefore not fully recognised in, for example, many of the government ministries responsible for infrastructure or industrial and agricultural development. Public participation in the environmental assessment and development planning process in Cambodia is also resisted because there have been suggestions that the public has used its voice to gain financial compensation illegitimately. In addition, the tradition of public participation has been minimal.

Currently, no guidelines or principles exist for project proponents to implement in the process of development EIAs. Public awareness of the goal of EIAs is vague. Therefore, the following general goals of Strategic EIA are recommended for consideration or inclusion in the EIA guidelines or principles:

- (a) Recognize the rights of stakeholders and assess the risks;
- (b) Incorporate environmental and social criteria in the selection of projects, and demand and supply options before major funds are committed to investigating individual projects;
- (c) Screen out inappropriate or unacceptable projects at an early stage;
- (d) Reduce up-front planning and preparation costs for private investors and minimize the risk that projects will encounter serious opposition due to environmental and social considerations; and
- (e) The provision of an opportunity to look at the option of improving the performance of existing dams and other assets from the economic, technical, social and environmental perspectives.

The Environmental Protection Law does not define an EIA or describe any of the items it must contain. The Sub-decree on the EIA Process does not define the EIA, but it does delegate responsibility (Article 10) to the Ministry of Environment for establishing the guidelines by Ministry Administrative Regulations.

The Ministry of Environment, in turn, has further delegated this responsibility to the Department of Monitoring and Environmental Impact Assessment (see Section 3 of the Ministry of Environment Administrative Regulation No. 49 on “Guidelines for Conducting Environmental Impact Assessment Report”, 9 March 2000). Although the Department has not yet issued any EIA guidelines, two draft documents are currently being prepared on improving the EIA process. They are (a) “Environmental Examination Application”, and (b) “Guidelines for Conducting Environmental Impact Assessment Reports.”

The draft EIA Guidelines require that the following matters be addressed in an EIA report prepared by a project sponsor:

1. Project summary
2. Introduction
3. Purpose of the project

4. Project description
5. Description of environmental resources
 - (a) Physical resources
 - (b) Ecological resources
 - (c) Socio-economic resources
6. Public participation
7. Environmental impact analysis
8. Environmental impact mitigation measures
9. Economical analysis and environmental value
10. Environmental management plan
11. Institutional capacity
12. Conclusions and recommendations
13. References.

4.3 Public Participation in the Environmental Impact Assessment Process

The Environmental Protection Law (Articles 16–18) only provides brief provisions about public participation in the EIA process.

Article 35 of the Constitution states that “Khmer citizens of either sex shall have the right to participate actively in the political, economic, social and cultural life of the nation. Any suggestions from the people shall be given full consideration by the grant of the State”. However, there is no specific law on broader public participation in the decision-making and planning process for dam projects.

Detailed public participation in the EIA process must be determined by a sub-decree (proposed by the Ministry of Environment) that provides for public participation and access to information on environmental protection and management. The present sub-decree states that one of the objectives is to provide for public participation in the EIA process. However, it only refers to public participation as an objective — there are no specific and clear provisions for implementing this objective. However, in order to ensure the rights of affected citizens are protected from any activities committed by the Government, the Constitution states “Khmer citizens shall have the right to denounce, make complaints or file claims against any breach of the law by state and social organs or by members of such organs committed during the course of their duties. The settlement of complaints and claims shall be the competence of the courts”.

The draft EIA Guidelines contains some requirements for public participation. Project sponsors must address all opinions given by the public in the EIA process. Public participation includes (a) all involved local authorities and institutions, (b) public opinion on a development project, (c) consultations and (d) company interpretation.

Participation by indigenous or tribal people is not stated specifically in the Law on Environmental Protection and Natural Resource Management or in the Sub-decree on the EIA Process. Nevertheless, in Cambodia, indigenous people are considered to be Cambodians and their rights are protected by Cambodian law. They can exercise their rights like other Cambodian nationals. However, it is rare to see any representative of indigenous people participating in any important decision-making by the Government.

4.4 Legal Instruments Relevant to the Improvement of Existing Dams

As mentioned above, Cambodia has yet to formulate and introduce a comprehensive water resources law or a specific law or regulation on dam management (i.e., irrigation systems or hydropower dams). Institutionally, there are two government agencies that are responsible for dam management — the Ministry of Water Resources and Meteorology, and the Ministry of Industry, Mines and Energy.

The Sub-decree on the Organization and Functioning of the Ministry of Industry, Mines and Energy (No. 35ANK/26 April 1999) lays out the mandates and responsibilities of the Ministry, which include but are not limited to:

- (a) Conducting research on the hydropower distribution networks and estimating the potential in order to develop electrical projects where electricity production is the main purpose; and
- (b) Participation in the implementation of any works related to the Mekong Basin according to the obligations of the Ministry.

The Ministry of Industry, Mines and Energy has several departments, but the Department of Hydropower plays a major role in the hydropower affairs, which includes:

- (a) Preparing and implementing national power policies related to hydropower (although, to date, no policies related to hydropower have been formulated; only a draft policy and strategy on renewable energy has been prepared in which hydropower issues are briefly stated);
- (b) Collecting, analyzing, and utilizing all data in studying the development of hydropower;
- (c) Select locations and priority projects;
- (d) Formulating and implementing hydropower development plans within the specified framework throughout the country; and
- (e) Studying, formulating, implementing, and controlling the construction of hydropower generation projects.

The Sub-decree on the Organization and Functioning of the Ministry of Industry, Mines and Energy also provides clear mandates for monitoring existing hydropower dams, but there is no clear legislative framework for carrying out the monitoring and evaluation process.

Article 11 of the long-overdue draft Water Resources Law authorizes the Ministry of Water Resources and Meteorology to issue licenses for water use and waterworks construction (dam/irrigation system construction). Under Article 16 of the law, a license for waterworks construction can be revoked by the Ministry when any such project is deemed unsound or likely to cause danger to the nation (Article 16).

4.5 Compliance and Enforcement

This section considers various key questions related to compliance and enforcement.

4.5.1 Compliance with Dam Construction and Operation Plans

Legally binding provisions exist that require compliance with plans for constructing and/or operating dams. They include:

- (a) Article 11 of draft Water Resources Law states that dam construction/irrigation system construction will be subject to licensing by the Ministry of Water Resources and Meteorology. Article 16 states that such licenses can be revoked by the Ministry when any projects are deemed unsound or likely to cause danger to the nation; and
- (b) Article 12 of the Law on Land Management, Urbanization and Construction states that individuals and private institutions as well as public authorities are banned from conducting construction on land areas such as water reservoirs and water dams.

4.5.2 Compliance with Social and Environmental Commitments

Compliance with social and environmental commitments, including benefit sharing, is legally binding under Article 5 of the Land Law, which provides for the right of landowners to receive compensation from the State if any piece or parcel of his or her land is affected by any construction work undertaken in the public interests. (For example, residents living along National Road No.1 were affected by the enlargement project and were therefore given compensation.)

4.5.3 Mechanisms for Ensuring Full Implementation of Compliance Plans

To date no specific legal binding provision has been issued that specifies the mechanism for ensuring such compliance, but should there be any dispute regarding these matters, an *ad hoc* committee or commission can be established to settle the issue. There is no clear specific penalty for non-compliance.

4.5.4 Measures for Apportioning Compliance Costs

To date, no clear legally binding measures or specific provisions have been issued for apportioning the costs of compliance.

4.5.5 Provisions for External Review of Implementation and Compliance

To date, no legally-binding provisions have been issued with regard to undertaking an external review of implementation and compliance.

4.5.6 Economic Incentives

Article 12 of the Law on Investment in the Kingdom of Cambodia provides economic incentives for investment in physical infrastructure and energy, and environmental protection.

4.5.7 Penalties for Non-compliance

Article 25 of the Law on Investment in the Kingdom of Cambodia states that in a case where a company (investor) violates or fails to comply with the conditions stipulated by the Cambodia Development Council, the Council has the authority to withdraw the privileges and incentives granted, in whole or in part.

4.5.8 Anti-corruption Measures

To date, no measures or penalties been introduced to discourage and prevent corruption in the process of constructing and/or operating dams (table 7).

Table 7: Institutional Impediments to Effective Basin Governance

Issue	Assessment	Management/Intervention
Weak governance and widespread corruption	Failure to ensure compliance and monitoring. Strong resistance by powerful and elite persons to the reform. A poor system of accountability. Pocketing official revenues, patronage, the funding of political campaigns.	New governance principles such as transparency and accountability, public participation, gender equality, equity and equal access, checks and balance.
An absence of key law and its clarity	Slow progress in moving away from a society exclusively regulated by government and sectoral by-laws. The legislative process was tied to other high political agendas, such as World Trade Organization accession and the Khmer Rouge trial, and political deadlock.	Moves to broaden cross-sectoral policy/legislation and improve public participation in formulation. A sound policy and legal foundation for natural resource management.
A lack of law enforcement and a weak judicial system	Either because of a lack of technical and managerial capacity in government agencies or because of corruption, nepotism and intimidation.	
Overstaffing and limited capacity in government agencies	Agencies to deal with sustainable management are facing problems of overstaffing, a lack of legitimate incentives among staff, and poor qualifications and technology support.	A proper incentive system and promotion based on merit and a change of the command-and-control mindset among senior staff. Become more service-minded and accountable to service providers.

Decentralization is very slow	The Government and its agencies have not fully realigned their	Management of natural resources at the lowest
Issue	Assessment	Management/Intervention
	systems or capacities to support such action. No clear definition of functional, administrative and budgetary responsibility, plus a poor financial base. Complex financial implications and interests.	possible institutional levels. A clear definition of the role, responsibility, and maximization of participation by the public. Budget sustainability.
A lack of clear property rights		
A lack of a mechanism for accountability and public participation	A few public consultations have been organized to meet donor/lender requirements. No public involvement in decision-making.	

Source: P. Sokhem and K. Sunada, "Tonle Sap's Complex National and Cross-boundary Governance – An Institution and Policy Diagnosis and Analysis", submitted to *Water Resources Development Journal*, Special Issue, November 2005. Under review.

4.6 Analysis and Recommendations

- (a) The lack of a legislative framework and specific laws such as a Water Law, Hydropower Regulation/Energy Law, dam regulation, a new Fishery Law (to date, an old Decree on Fishery Management is being used) and a Protected Areas Law leads to ineffective management of water resources, especially the conservation of aquatic ecosystems and biological resources.
- (b) The weak enforcement and implementation of the EIA requirement and public participation in decision-making cannot ensure effective management of water resources. The EIA requirement for water resource and dam development projects should be strictly enforced, especially for projects located in protected areas such as the Kamchay hydropower project located in the Bokor National Park. (The Ministry of Industry, Mines and Energy is reportedly seeking foreign private sector participation in developing the EIA report for the Kamchay hydropower project).
- (c) Although there has not been a dispute so far over negative impacts of the development of water and energy resources, the provisions on transparency and equity in compensation for negative impacts should be defined clearly in any relevant specific law(s).
- (d) Specific regulations on public participation should be developed.
- (e) The right of communities already established in protected areas as well as forestry and fishery communities to participate in development planning and decision-making should be strengthened, especially in the case of water and energy resources.

4.7 Conservation of Aquatic Ecosystems and Biological Resources

Cambodia enjoys one of the highest natural endowments per capita in East Asia, with forests and highly productive freshwater fisheries holding a significant share.

The vast water surface area of the country's rivers, lakes, swamps, marshes and inundated forests make Cambodia the fourth-largest freshwater fish producing country in the world after China, India and Bangladesh. Some 850 species of fish have been reported in the Tonle Sap Great Lake and the lower reaches of the Mekong River.

A Royal Decree issued on 1 November 1993 established 23 protected areas that total 3.3 million hectares, which amounts to 18.23% of the Cambodia's total land area and includes World Heritage sites. Moreover, there are Ramsar Convention sites that cover 53,000 hectares including Beng Chmar Ramsar site 28,000, Mekong Ramsar site 13,000 ha and a Biosphere listed site.

The current lack of law enforcement is limiting the effective implementation of biological resource conservation. To date, there is no specific law on protected areas. There is a Royal Decree on the establishment of protected areas, but it does not provide the Ministry of Environment with a mandate to take legal measures against violators or illegal activities in protected areas. However, in 2004, three cases of illegal logging were submitted to court.

To ensure the protection and conservation of biological resources as well as aquatic ecosystems in protected areas, the Ministry of Environment implements the provisions of the Law on Environmental Protection and Natural Resource Management and sub-decrees such as the one on water pollution control, in order to protect rivers that flow through those areas. The Sub-decree on the EIA Process is the most important legal instrument for preventing and mitigating the impact of dams on rivers. However, in practice, it is rare to see the requirement for an EIA report on dam development projects being implemented.

5. Changes Needed in the Existing Policy and Legislative Framework

The following changes are needed in the existing policy and legislative framework in order to support comprehensive implementation of the strategic framework for the development of water and energy resources.

The existing national policy and legislative framework is not adequate for supporting the WCD Strategic Framework for Dams and Development. Carefully elaborated, specific recommendations and actions are required in order to help identify the appropriate conditions that need to be created and the criteria that have to be fulfilled in order for water resources management decision-making and monitoring to become more integrated and inclusive, and thus well accepted by the public. The Strategic Priorities that are critical to this process as well as their underlying principles, rationale, method of application and some enabling mechanisms are elaborated below.

5.1 Enabling Environment

New or amended policies and legislation should be put in place. A move should be made away from the sectoral approach to a more integrated/cross-sectoral form of legislation. Although the draft Water Law that has been pending for more than two years in the National Assembly is urgently needed, various substantial improvements are required to ensure that it is fully comprehensive/cross-sectoral legislation. The regulatory regime should be consolidated into one comprehensive Law on Water Resource and Dam Management with its corresponding sub-decrees, rules and regulations. The regulatory regime should clearly allocate responsibility for dam management to a ministry to avoid or eliminate an overlapping of jurisdiction.

The issuance of final draft Guidelines on the EIA Process as well as guidelines, principles should be given priority, and criteria for developing EIA reports on water resources and dam development projects should be issued. At the same time, an improved mechanism for feedback and coordination is needed, e.g., between the Ministry of Environment on EIA, the Council of Ministers on the investment approval process, and the Ministry of Water Resources and Meteorology and the Ministry of Industry, Mines and Energy on project implementation, compliance and monitoring.

All development projects in the Mekong River basin involving development of water resources or dams should take into account the trans-boundary impact on neighboring countries. In particular, the existing rule of procedures on notification, prior consultation and agreement under the 1995 Mekong Agreement should be implemented.

5.2 Public Acceptance

Public participation should be specified by law, or at least it should be stated clearly in relevant legislation. Binding provisions requiring consideration of, and taking into account any recommendations and suggestions received from the public should be specified and implemented. The key WCD recommendations on public acceptance must be integrated into the country's policy and institutional framework and practices.

5.3 Compliance and Enforcement

Institutional ineffectiveness (problems of overstaffing, a lack of legitimate incentives for staff, and poor qualifications and technology support) need to be vigorously addressed. Ensuring public trust and confidence requires that governments, developers, regulators and operators meet all commitments made for the planning, implementation and operation of dams or other major related projects. Compliance with applicable regulations, criteria and guidelines, and project-specific negotiated agreements should be ensured at all critical stages in project planning and implementation.

Sponsoring, contracting and financing institutions must adopt a clear, consistent and common set of criteria and guidelines; compliance with the criteria and guidelines must be subject to an independent and transparent review. A compliance plan should be prepared prior to the commencement of each project, detailing how compliance will be achieved as well as specifying binding arrangements for project-specific technical, social and environmental commitments.

The costs of establishing compliance mechanisms and related institutional capacity as well as their effective application are built into the project budget, and an

appropriate mix of regulatory and non-regulatory measures that incorporate incentives and sanctions must be used to ensure effectiveness. Corrupt practices must be avoided through the enforcement of legislation, voluntary integrity pacts, debarment and other instruments.

5.4 Development of Decision-support Tools

Greater investment needs to be made in the development of decision-support tools that will ensure more effective assessments and scientific information decisions (data, information collection and management). Comprehensive options and strategic impact assessments (cumulative effects of various activities, both from within and externally, at the programme and policy levels) must be in place. Development requirements and objectives, such as the need for water, food and energy, must be assessed through an open and participatory process.

Once the needs are identified through such a process, the appropriate development response must be selected from a range of possible options. Using the appropriate planning process, a comprehensive and participatory assessment of the full range of policy, institutional and technical options must be carried out in order to select a suitable intervention or combination of interventions. While assessing the various options, social and environmental aspects must be accorded the same high priority as economic and financial factors. In the assessment and selection of interventions, the option of increasing the effectiveness and sustainability of existing water, irrigation and energy systems must be given priority.

5.5 Ex Post Evaluations or Post-audit Mechanisms

Ex post evaluations or post-audit mechanisms must be institutionalized in order to assess the actual impacts of completed water projects, programs, and policies for the population, environments, and landscapes that are affected. An ex post evaluation of a large dam would measure, monitor, and assess the full array of impacts related to that dam — from its design, construction, presence, operation, maintenance and refurbishment, to its ultimate decommissioning.

5.6 Transboundary River Basin (Mekong River)

Cambodia is a party to the 1995 Mekong Agreement and a member of other regional bodies and initiatives, for example, the Association of South East Asian Nations and the Greater Mekong Sub-region. There are numerous existing and proposed dam projects in the Mekong River basin; as a downstream country, Cambodia is highly vulnerable to upstream dam developments. More effective regional river planning and management is required whereby all Mekong countries would strictly adhere to the principle of equitable and reasonable utilization, a no-harm policy, appropriate consultations, and a joint development and planning process.

6. Conflicts between the Existing Policy and Legislative Framework and the Strategic Framework for Development of Water and Energy Resources

Does the existing policy and legislative framework directly or indirectly conflict in any way with the letter or the substance of any element of the Strategic Framework for Development of Water and Energy Resources?

To date there have been no significant conflicts regarding the development of water and energy resource because good cooperation exists between line agencies such as the Ministry of Water Resources and Meteorology, the Ministry of Environment, and the Ministry of Industry, Mines and Energy.

7. Conclusion

A national water resource policy is a comprehensive government paper reflecting the political will to manage a country's water resources and maintain a balanced ecosystem. However, such a policy should be implemented by comprehensive legislation and regulations. Linkage between the existing Water Policy and the draft Renewable Energy Policy is a critical prerequisite for successful water resources management.

The "Rectangular Strategy for Growth, Employment, Equity and Efficiency" states that "in developing hydropower resources, the Government of Cambodia will carefully analyze all aspects involved, especially the economic benefits and the environmental and social impacts." In reviewing its draft Renewable Energy Policy, the Ministry of Industry, Mines and Energy should take into account the principles of this strategy. The Government should review existing relevant legislation and regulations, which focus mainly on the protection of water quality from contamination by sources of pollution. The regulatory regime should not only protect water quality and control the quality standards of water resources, but also should protect the rights to access and equitable use of those water resources to ensure sustainable and reasonable use and the conservation of biodiversity.

The Government should push through the adoption of the draft Protected Areas Management Law and develop a specific law on dam management by harmonizing these laws to ensure the conservation of the country's biodiversity as well as prevent trans-boundary impact on the biodiversity of neighboring countries. Human resource development and institutional capacity building are also needed, as they are crucial to the implementation of related policies, strategies, and legislation.

The principles and the provisions of the existing Rule of Procedures for Notification, Prior Consultation and Agreement, the objective of which is to ensure the sustainable and equitable use of water resources of the Mekong River, should be considered for inclusion in the relevant legislation.

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