

# **The Expansion of ADB Influence in Cambodia's Water Sector: Judging the Effectiveness of ADB Water Management Projects in The Tonle Sap Lake Basin**

Dr. Carl Middleton

*Fisheries Action Coalition Team (FACT), Cambodia*

## **Abstract**

It is no understatement to state that the Tonle Sap Lake, and more widely its basin, is central to Cambodia's food security, economy, and cultural identity. In recognition of this Tonle Sap Lake was nominated as a UNESCO biosphere reserve in 1997. Yet, numerous environmental and social challenges face the sustainable and equitable management of the Lake. To address these problems the Asian Development Bank (ADB) launched the Tonle Sap Initiative (TSI) in 2002, and subsequently the more broad ranging Tonle Sap Basin Strategy. The ADB is also extremely active in the water sector in Cambodia, and in 2005 proclaimed itself the 'lead agency' in agreement with other donors. Intervening in the water sector, the ADB has worked closely, amongst others, with the Ministry of Water Resources and Meteorology (MOWRAM) to develop a legal and regulatory framework that is consistent with the ADB's Water Policy.

Regarding water resource management around Tonle Sap Lake, the ADB has provided, since 2002, technical support to the Tonle Sap Biosphere Reserve (TSBR) Secretariat whose mandate is to coordinate ministries in conservation and development activities within the TSBR. The technical support has come under a component of the Tonle Sap Environmental Management Project, the first loan-based project of the TSI. Furthermore, since 2004, the ADB has promoted, via two Technical Assistance grants, a 'Tonle Sap Basin Management Organization' (TSBMO) that would promote Integrated Water Resource Management throughout the Tonle Sap Lake basin.

This paper assesses the ADB's intervention to date in the water sector, and goes on to analyze the relative benefits and drawbacks of the TSBR secretariat arrangement and the TSBMO. It concludes that whilst the TSBMO is desirable, and indeed necessary, in the long-term, current conditions are not favorable to its implementation, and that therefore present effort should first be focused on the TSBR secretariat to initiate biosphere-wide management coordination and generate lessons learnt before extensive basin-wide expansion commences under the proposed TSBMO.

Dr. Carl Middleton is Acting Director of Fisheries Action Coalition Team (FACT), Cambodia. His project team is presently developing a 'Tonle Sap Community Database' and monitors major development projects around Tonle Sap Lake.

Contact details: *tel* (+855)12885315; *fax* (+855)23994085; *address* #71, Street 592, Sangkat Boeung Kak II, Khan Toul Kork, Phnom Penh, Cambodia; *email* Carl\_Middleton@hotmail.com.

## Acronyms

ADB : Asian Development Bank	PRDC : Provincial Rural Development Committee
BMO : Basin Management Organization	RGC : Royal Government of Cambodia
CNMC : Cambodia National Mekong Committee	SCIRIP : Stung Chinit Irrigation and Rural Infrastructure Project
CF : Community Fishery	TA : Technical Assistance
CSP : Country Strategy and Program	TSBCC : Tonle Sap Basin Coordination Committee
D&D : Decentralization and Deconcentration	TSBMO : Tonle Sap Basin Management Organization
FAO : Food and Agriculture Organization	TSBS : Tonle Sap Basin Strategy
FWUC : Farmer Water User Communities	TSEMP : Tonle Sap Environmental Management Project
MAFF : Ministry of Agriculture, Forestry, and Fishery	TSI : Tonle Sap Initiative
MoE : Ministry of Environment	TSL : Tonle Sap Lake
MOWRAM : Ministry of Water Resources and Meteorology	TSLB : Tonle Sap Lake Basin
MRC : Mekong River Commission	UNESCO : United Nations Educational, Scientific, and Cultural Organization
NRM : Natural Resource Management	
NWISP : North West Irrigation Sector Project	

### 1. Introduction

The Tonle Sap Lake Basin (TSLB) is located in the North West of Cambodia and is of paramount importance to Cambodia's food security, economy, and cultural heritage (MRC, 2004). Recognizing Tonle Sap Lake (TSL) and its flood plain's unique conservation value it was established as a Multiple Use Protected Area by Royal Decree in 1993. The 'Tonle Sap Lake Biosphere Reserve' (TSBR) was nominated as a UNESCO biosphere reserve in October 1997 and is geographically enclosed between National Highways 4 and 5 that run either side of the lake (see figure 1).

During the rainy season (June to October) water flows from the Mekong River via the 120 km Tonle Sap River into TSL, and then during the dry season (November to May), as the level of the Mekong River falls, the Tonle Sap River reverses the direction of its flow and water drains from the lake into the Mekong River. During this flood cycle TSL's surface area ranges from 2,500-3,000 km<sup>2</sup> in the dry season to 10-15,000 km<sup>2</sup> during the rainy season, and changes in depth from around 1 meter to 7-9 meters (Evans *et al.*, 2004). The inundation of the flooded forest that grows on the lakes flood plains yields high nutrient levels that foster fish spawning and growth and is central to the Lakes exceptionally high fisheries productivity; indeed, TSL is one of the most productive inland fisheries in the world (Baran, 2005). The flood cycle also ensures fertile soils in the flood plains that are increasingly being converted from flooded forest to agriculture.

Around 3.6 million people live within the TSLB<sup>1</sup>, which is 30% of Cambodia's total population, one third of whom live within the TSBR (1.2 million). In total the TSBR and TSLB cover 14,800 km<sup>2</sup> and 80,000 km<sup>2</sup> respectively, the latter of which is 44% of the total area of Cambodia. The TSL and its associated floodplains are one of the most economically significant areas in the country; for example 12% of the countries rice harvest comes from the TSBR alone, and the TSL is thought to provide between 40 and 70% of the Cambodian's protein intake through its fisheries. In terms of conservation value, the TSBR contains at least 200 species of fish, 42 species of

---

<sup>1</sup> An estimate for 2003 places this figure as high as 4.45 million (TSLB E-Atlas; ADB TA4427-CAM)

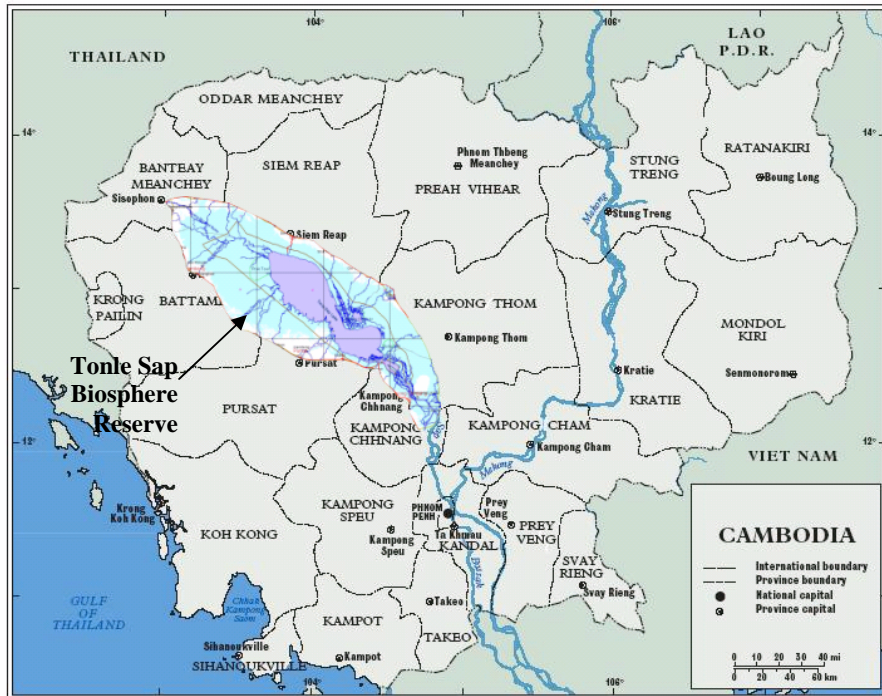


Figure 1a: Map of Cambodia with the Tonle Sap Biosphere Reserve indicated



Figure 1b: Administrative map of Cambodia indicating the boundary of the Tonle Sap Lake Basin

reptile, 225 species of bird, and 46 species of mammal. More broadly, the TSLB contains 1 National Park (37,500 Ha), 5 wildlife sanctuaries (1,137,470 Ha), 3 protected landscapes (97,000 Ha), two multiple use management areas (376,250 Ha), and 2 forest protected areas (12,000 Ha). In total, it is estimated that the TSLB contains 40 percent of Cambodia's forest area, and 76 percent of the agricultural land (ADB, 2002; Claridge, 2004<sup>a</sup>; Wright *et al.* 2004).

The principal livelihood activity on and close to the lake is fishing and fisheries associated activities (fish processing, fish trading, fishing equipment manufacture...). Further away from the Lake, in the flood plains and beyond, rice-based agriculture (floating, recessional, rain-fed, or irrigated depending on location) becomes the dominant livelihood activity, together with livestock rearing and processing of crops. Flooded forests near the lake, and other forested areas further away provide a diversity of Non-Timber Forest Products (NTFP), for example firewood and forest fruits (McKenney and Tola, 2002; Keskinen, 2003).

Despite intensive development efforts since Cambodia's transition to a free-market economy in 1991 poverty remains pervasive with on average 35%–40% of the total population remaining below the poverty line. Furthermore, for many reasons that could be summarized as non pro-poor orientated economic growth it appears that inequality is increasing (ADB 2005<sup>a</sup>). Poverty levels are higher than the national average in many regions of the TSLB; half of the villages in TSLB have between 40-60% of their population below the national poverty line and in Krong Palin province levels reach 70-80% (Wright *et al.*, 2004).

Environmental issues related to the sustainable management of TSL are by now well documented, and acknowledged to varying extents by all stakeholders. The Asian Development Bank (ADB) in its Country Strategy and Program (CSP) 2005-2009 identifies six key environmental issues, although typically understates their severity (ADB 2005<sup>a</sup>):

- an inadequate legislative framework
- uncoordinated institutions
- unsustainable extraction of fishery and forestry resources
- weak land and water resource management
- severe pressure on the Tonle Sap ecosystem
- unplanned urban and industrial development

Environmental issues cannot be isolated from social issues, both of which are mutually dependent of each other. There is presently weak stakeholder participation, a lack of trust and understanding between all stakeholders, poor enforcement of the Law, low government staff capacity, and endemic petty corruption. Accelerating resource degradation, weak governance, poor management, land issues, and increasing competition for limited resources, both between individual stakeholders and sectors (fisheries; agriculture; and forestry), are leading to a deepening crisis that urgently requires addressing, and central to its resolution is effective management of water resources. Transboundary water management issues place an additional dimension of complexity to the long-term sustainable development of TSL, with large-scale developments including hydropower and water storage dams and rapids blasting likely affecting the hydrological cycle of the Mekong River (and therefore

most likely TSL) to an as-of-yet unevaluated degree. The potential impacts of climate change add a further element of uncertainty to hydrological cycles within the Mekong Basin.

This paper aims to trace the expansion of the ADB's influence in the water sector in Cambodia, and will identify how the ADB has acted to impose its Water Policy<sup>2</sup>. Following an initial description of the ADB's strategy within Cambodia and more specifically within the TSLB, the paper will then focus on two key ADB supported projects relevant to the management of water in the TSLB, namely: the Tonle Sap Environmental Management Project (TSEMP) and in particular the component of this project that supports the TSBR secretariat; and the Tonle Sap Basin Management Organization (TSBMO), which is presently being developed through a series of TA grants. In examining the designs of these two ADB projects this paper intends to examine their likelihood of success under the present circumstances found in Cambodia, and provide recommendations for future action. The research is based on ongoing monitoring and analysis of ADB's activities in the Tonle Sap Region conducted as part of FACT's 'Tonle Sap Watch' project.

## **2. The ADB's Country Strategy and Program (CSP) 2005-2009**

The ADB, in its CSP 2005-2009, has identified the TSLB as a priority geographical focus for investment, together with Cambodia's regional integration via the ADB's Greater Mekong Subregion (GMS) program (ADB, 2005<sup>a</sup>). ADB will be the 'lead agency' in four priority sectors – '*agriculture and water resources*, education, finance, and transport' [emphasis added], assisting the Government in sector strategy and program (ADB, 2005<sup>a</sup>). The concept of 'lead agency' has recently arisen following the ADB, the World Bank, and the Department for International Development (DFID, UK) carving up interests by sector under a banner of harmonizing their strategies, allocating sectors where each organization claimed comparative advantage.

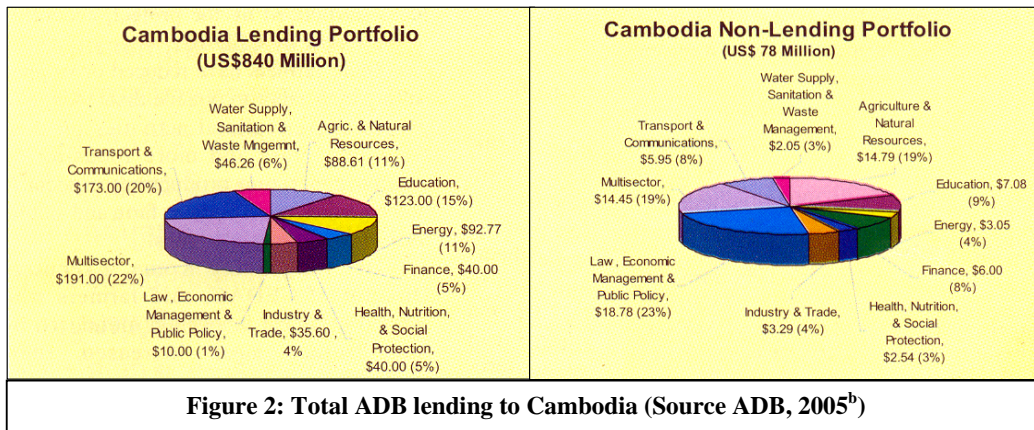
Three strategic pillars are identified in the CSP, the majority of which are relevant to the present and pipeline loans and grants for TSLB (ADB, 2005<sup>a</sup>):

- (i) broad-based economic growth through investments in physical infrastructure, development of the financial sector, support for greater regional integration, sustainable development of small and medium-sized enterprises, and investments in agriculture and irrigation;
- (ii) inclusive social development through basic education, empowering vulnerable groups such as women and ethnic minorities, control of communicable diseases, provision of rural water supply and sanitation facilities, and community-based sustainable management and conservation of natural resources in the Tonle Sap basin; and
- (iii) good governance, through improvements in public financial management to enhance the development effectiveness of public expenditures, and decentralization and deconcentration initiatives to strengthen local participation in government, and improve public service delivery.

Up until December 2004, the ADB had approved to Cambodia US\$840 million of loans for 35 public sector projects, of which US\$480.12 had been disbursed (figure 2). As of February 2005 121 TA grants worth US\$78 million had also been given. The ADB is one of Cambodia's largest donors, although most of this financial support is loan-based.

---

<sup>2</sup> This paper concerns itself with the water sector related mainly to natural resource management and not water supply and sanitation.



The CSP 2005-2009 is founded on the Royal Government of Cambodia's (RGC) development strategy known as the 'Rectangular Strategy', which consists of four interlocking 'growth' rectangles with good governance lying at the core (RGC, 2004). The four rectangles consist of: 1) enhancement of agricultural sector; 2) private sector development and employment; 3) continued rehabilitation and construction of physical infrastructure; and 4) capacity building and human resource development. Of particular importance with regards to the water sector are rectangle 1, which consists of improved productivity and diversification of agriculture, land reform and clearance of mines, fisheries reform, and forestry reform, and rectangle 2 which includes, *inter alia*, management of water resources and irrigation.

In focusing on the TSLB, according to the CSP 2005-2009, ADB will (ADB, 2005<sup>a</sup>):

- Develop interventions to improve environmental stewardship and livelihoods in the Tonle Sap basin.
- Whenever feasible, sub-national projects (i.e., projects without a national focus) will be located within the Tonle Sap basin. In particular, ADB will gradually move some of its interventions in agriculture, power, and rural water supply and sanitation to the Tonle Sap basin.
- While ADB will continue to support transport projects throughout the country, many of these will be located in the Tonle Sap basin.

As a result, ADB's lending and non-lending portfolio includes many projects that are of importance to the water sector in Cambodia, and in many ways are defining its development (Table 1). According to ADB all projects implemented to date detailed in Table 1 have been rated as satisfactory for their implementation progress and development objective and are therefore not considered at risk, with the exception of the Stung Chinit Irrigation and Rural Infrastructure Project (SCIRIP), which is rated only as partly satisfactory for its development objective and is flagged as at risk<sup>3</sup> (ADB, 2005<sup>a</sup>).

<sup>3</sup> For detailed analysis of SCIRIP and its serious problems see Middleton and Pen (2005<sup>c</sup>)

<b>Table 1: Recent ADB projects related to the water sector in Cambodia</b> <sup>4</sup>		
<i>Lending Projects</i>		
Project (loan no)	Program year /approval date	ADB loan amount (US\$ million)
Stung Chinit Irrigation and Rural Infrastructure (1753)	5.9.00	17.559
Tonle Sap Environmental Management (1939-CAM)	21.11.02	12.221
Agriculture Sector Development Program (2022)	26.11.03	25.982
Agricultural Sector Development Project (2023)	26.11.03	4.884
Northwest Irrigation Sector Project (2035)	9.12.03	18.682
Tonle Sap Sustainable Livelihoods	2005	15 (Announced as a grant in October 2005)
Chong Kneas Environmental Improvement (standby) <sup>5</sup>	2005	15
Tonle Sap Lowlands Stabilization	2007	TBD
Irrigation and Water Resources Management Sector Development	2007	TBD
<i>Non-lending projects</i>		
Business Initiatives in Rural Development (ADTA)	2005	150,000
Study on the influence of built structures on the fisheries of Tonle Sap (ADTA)	2005	300,000
Capacity building of IFRDI II (ADTA)	2005	300,000
Tonle Sap Lowlands Stabilization (PPTA)	2005	1,100,000
Sustainable Rural Water Supply and Sanitation (PPTA)	2005	150,000
Establishment of Tonle Sap Basin Management Organization III (ADTA)	2005 (now 2006)	300,000
Establishment of Tonle Sap Basin Management Organization IV (ADTA)	2006 (now 2007)	300,000
Irrigation and Water Resource Management Sector Development (PPTA)	2006	600,000
Tonle Sap Watershed Management (PPTA)	2006	800,000
Capacity Building for Tonle Sap Poverty Reduction Initiative II (ADTA)	2006	500,000
Enhancing activities to implement the Stockholm Convention on Persistent Organic Pollutants (ADTA)	2007	-
Enhancing the role of women in Inland Fisheries (ADTA)	2007	-
Study of Inland Aquatic Resources Trade Patterns (ADTA)	2007	-
Establishment of Tonle Sap Basin Management Organization V(ADTA)	2007 (Dropped from pipeline)	-
Tonle Sap Water Supply and Sanitation Project (PPTA)	2007	-
Agriculture Sector Development Program II (PPTA)	2007	-
Agriculture Sector Development Program II (PPTA)	2007	-

TBD = to be determined; ADTA = advisory technical assistance; PPTA = project preparatory technical assistance

It should be noted that water sector development is inextricably linked to agricultural development, and that within Cambodia agricultural development is considered by many decision makers as central to alleviating rural poverty; 90% of Cambodia's poor live in rural areas and agriculture is considered to be limited by poor productivity,

<sup>4</sup> Project details taken from CSP 2005-2009 tables 1, 2, A1.9, and A1.10 (ADB, 2005<sup>a</sup>). Since the CSP's publication in January 2005 several project dates have been up-dated as detailed in 'Tonle Sap Initiative Operating Outputs published in October 2005 (ADB, 2005<sup>d</sup>). The list of TA's in Table 1 does not include all TA's associated with the TSI. Refer to ADB, 2005<sup>d</sup> for more detail.

<sup>5</sup> The 'Chong Kneas Environmental Improvement Project' was suspended following intense opposition by local communities and some NGOs. See Sugita and Goto, (2004)

diversity, and competitiveness<sup>6</sup>. The CSP 2005-2009 states ‘ADB’s support for irrigation development will be integral to its support for agriculture.... While the main thrusts of ADB’s interventions in agriculture are directed at increased commercialization, food security issues will be addressed by agriculture and irrigation components under the Tonle Sap basin strategy’ (ADB, 2005<sup>a</sup>)

### 3. ADB intervention in Cambodia’s water sector

#### 3.1 MOWRAM and the Draft Water Law

The Ministry of Water Resources and Meteorology (MOWRAM) was established in 1999 as a ministry to lead the development of the water sector in Cambodia. ADB has provided capacity building to MOWRAM since 2000<sup>7</sup>, and has implemented at least two major irrigation projects through MOWRAM in the Tonle Sap Region, namely: SCIRIP; and the North West Irrigation Sector Project (NWISP)<sup>8</sup>. Working with ‘apex’ water-sector bodies is consistent with the ADB’s Water Policy (ADB, 2003<sup>a</sup>).

One of the first acts of MOWRAM was to draft a Water Law<sup>9</sup>, which having been approved by the Council of Ministers is presently awaiting ratification by the National Assembly. The objectives of the Water Law are to establish principles governing the management, monitoring, utilization, and protection of water resources to ensure their effective development. Overall, the Law:

- outlines the roles, responsibilities, and jurisdiction of MOWRAM in water resources management;
- exempting water for personal use<sup>10</sup>, the Law creates ‘water rights’ through a licensing arrangement that are subject to water user fees to be further detailed by sub-decree<sup>11</sup>;
- provides for the management of water by ‘Farmers’ Water User Community’ (FWUC), to be further detailed by sub-decree;
- details the protection of water resources, including licensing of waster water discharges, designation of ‘water-use protection zones’, and designation of ‘flood control zones’, with further details provided by sub-decree;
- prescribes the rights and duties of water users;
- prescribes incentives and penalties.

Many of the important details are left to the preparation of sub-decrees. Perhaps most importantly, precisely what constitutes personal use remains undefined and therefore

---

<sup>6</sup> This paper will not discuss the ADB’s intervention in the Agricultural Sector apart from where it is relevant to the management of water resources, for example in promotion of irrigation schemes

<sup>7</sup> With notable support from Agence Française de Développement, particularly in the area of policy development

<sup>8</sup> Impact from both of these projects are of great concern. For further analysis see *Tonle Sap Watch newsletter* issue 2, published by the Fisheries Action Coalition Team

<sup>9</sup> Law on Water Resources Management of the Kingdom of Cambodia (Version viewed: 5<sup>th</sup> March 2002)

<sup>10</sup> Article 8: Everyone has the right to use water resources without a license for drinking, washing, bathing and other domestic purposes, the watering of domestic animals and buffaloes, fishing and the irrigation of gardens and orchards, in an amount not exceeding that necessary to satisfy the individual and family needs of the user ...

<sup>11</sup> Article 9: The diversion, abstraction and use of water resources for purposes other than those mentioned in Article 8, and the construction of waterworks relating thereto, are subject to a license ...

open to interpretation. It is found, however, that the Water Law is congruent with the ADB's Water Policy, for example in the designation of water rights and licensing arrangements, and that presumably ADB will have a significant input into the preparation of the subsequent sub-decrees (ADB, 2003<sup>a</sup>).

### **3.2 Cambodia's Water Policy and Strategy, and ADB support**

The development of national policies and reforms is consistent with the ADB Water Policy (ADB, 2003<sup>a</sup>). In 2001/2002 ADB provided support to MOWRAM in the formation of a National Water Sector Profile, and then subsequently a 'Strategic Framework for the Water Sector'. Confusingly, a second strategy was also developed at around the same time by the World Bank called the National Water Resources Strategy for Cambodia. Both Strategic Frameworks were actually released before the 'National Water Sector Policy', therefore raising questions as to how strategy can be developed before policy. According to ADB consultants Wright *et al.*, (2004) the ADB framework 'does not appear to have progressed through the bureaucracy'.

The ADB is presently supporting the continued development of policy and legislation under its loan-based projects (listed in Table 1). For example, under NWISP alone the ADB<sup>12</sup> is supporting (ADB, 2003<sup>b</sup>):

- the development of MOWRAM's policy and strategic framework that will result in a document entitled 'Water Resources Investment Strategy for Cambodia: Proposed Procedures and Criteria for Project Selection'.
- a draft 'Strategic Plan for the Water Sector 2006-2010'
- a Sub-decree on River Basin Management and Water Allocation
- a 'Regulatory Framework for Irrigation Management Transfer (IMT)' that will presumably provide significant input into the Sub Decree on FWUCs as it will include:
  - the roles and responsibilities of all IMT stakeholders;
  - the scope and modalities for handing over irrigation infrastructure and transferring organization and management responsibilities, which will depend on the type and size of irrigation schemes;
  - the form of legal agreements required between MOWRAM and FWUCs to regulate the transfer;
  - water use and scheme ownership rights for FWUCs; and
  - the procedures for calculating and collecting irrigation service fees.

All ADB projects are bound by the ADB's Water Policy, and considering the extent of intervention, particularly in policy, legislation and regulation, as well as in implementation, Cambodia's water sector also embodies the ADB's Water Policy. The many international consultants engaged by projects, previously selected as 'acceptable' by the ADB, ensure that the ADB's sector objectives are met in 'partnership' with the Government although in fact these consultants are highly influential. At present, Cambodia's water sector is sector-based and project related, with little support for cross-sector planning from Ministries, resulting in poor coordination between Ministries (Milner and Carson, 2005). Resource-based planning is at an early stage at Provincial and lower levels.

---

<sup>12</sup> Co-financed with Agence Française de Développement

It should be noted that the ADB's policy and legislative intervention is not limited just to MOWRAM. Under a TA<sup>13</sup> complementary to the Tonle Sap Environmental Management Project (TSEMP), regulatory frameworks have been provided for a new sub-decree on community fisheries, as well as in management and planning, notably the 'General Fisheries Plan' that has been considered as not satisfactory by both members of the Department of Fisheries and observers (Middleton, 2004)<sup>14</sup>. Similarly, under a TA for the Tonle Sap Basin Management Organizations (TSBMO) (see section 6) a sub-decree has been drafted for the formation of the Basin Management Organization, developed by a focus group, although this is still very much at a formulative stage (Milner *et al.*, 2005).

#### **4. What is the ADB's Tonle Sap Initiative and the Tonle Sap Basin Strategy?**

The ADB's Tonle Sap Initiative (TSI), launched in October 2002, is described by Milner *et al.*, (2005) as 'a partnership of organizations and people working to meet the poverty and environment challenges of the Tonle Sap based on the Tonle Sap basin strategy'<sup>15</sup>. In fact, despite the ADB producing a bi-annual publication since 2002 entitled 'Future Solutions Now: The Tonle Sap Initiative' as well as a more recently prepared web-page describing the initiative, the TSI is in general poorly understood amongst many in Cambodia working in the TSLB, probably as a result of the absence, until recently, of a suitably clear definition of what actually constitutes the TSI.

Central to the TSI is four projects, each addressing a geographical zone within the TSLB and its associated specific issues. The TSI is planned to be implemented in a cyclic fashion as illustrated in figure 2. The projects all address management issues that directly affect the well-being of TSBR<sup>16</sup>. Currently, of the TSI projects only TSEMP is under implementation. TSEMP is essentially a conservation project for the TSBR focusing in particular on the core areas<sup>17</sup>. The Sustainable Livelihoods Project is planned to be approved by the RGC in December 2005, and in October 2005, was surprisingly announced to be provided to Cambodia as a grant rather than as a loan as originally intended.

There are several other projects within the Tonle Sap Lake Basin which have been conceived outside of the TSI, including SCIRIP, NWISP, the North West Rural Development project, the Tonle Sap Rural Water Supply and Sanitation project, and the Participatory Poverty Assessment study. Why these projects are not included within the TSI is not clear.

---

<sup>13</sup> 'TA 3993 CAM Improving the Regulatory and Management Framework for Inland Fisheries' US\$540,000, Approved 21.11.02

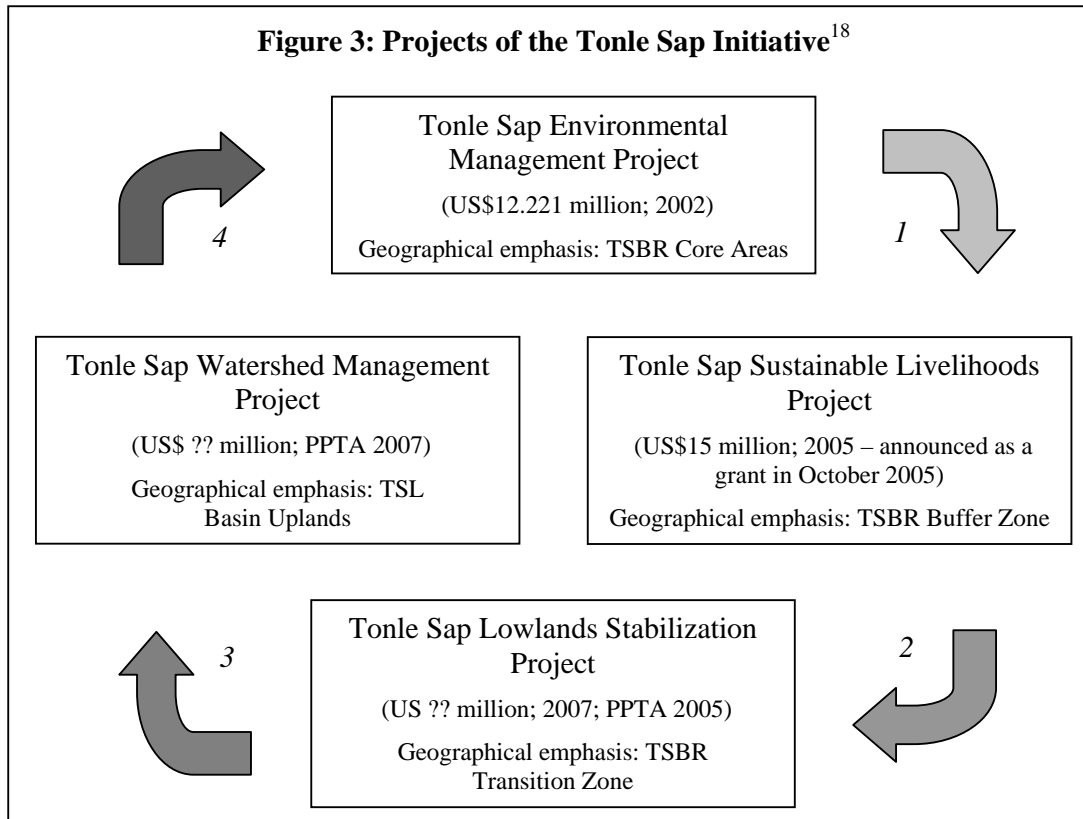
<sup>14</sup> The Director General of the Department of Fisheries noted at the 'APFIC Regional Workshop on Mainstreaming Fisheries Co-Management' held in Siem Reap on 9<sup>th</sup> - 12<sup>th</sup> August 2005 that he would seek an external review of the General Fisheries Plan, which he felt was developed primarily on the initiative of the international consultants with only limited input by DoF staff.

<sup>15</sup> In actual fact, the TSI was developed prior to the Tonle Sap Basin Strategy

<sup>16</sup> It is beyond the scope of this paper to discuss the project specifics

<sup>17</sup> Aspects of TSEMP are presently facing significant difficulties, in particular the implementation of Community Fisheries under component II (Middleton and Pen, 2005<sup>a</sup>; Mak, 2005)

**Figure 3: Projects of the Tonle Sap Initiative<sup>18</sup>**



\* Bracketed value are the value of ADB loans. Some projects are co-financed, for example TSEMP (UNDP-GEF US\$3,900,000; UNDP-Capacity 21 US\$623,000; and RGC US\$3,900,000).

The Tonle Sap Basin Strategy (TSBS), formulated in July 2003, is introduced in an ADB publication that presents a more detailed assessment of the current situation of TSL, and what the ADB *might* do in response (ADB, 2005<sup>c</sup>). It seems that the first major publicly available document outlining the TSBS did not appear however until 2004 (ADB, 2004). ADB claims that there is still limited understanding of TSL and its links to peoples livelihoods, and therefore claim that they will expand the ‘knowledge base on which must be founded the basin’s overall process of development’. The TSBS then differentiates its interventions into sustainable livelihoods (including irrigation, enhancing fish stocks, road networks, rural electric supplies...); environmental management (application of Forestry Law, forest concession/ community forestry interventions, persistent organic pollutants...); development of appropriate legal and institutional framework (support to decentralization strategy; building community based natural resource management systems, developing regulatory and management frameworks...); and human development (education, gender inequality, health...)(ADB, 2005<sup>c</sup>). Cross cutting issues the ADB identify are: assistance to vulnerable groups including the Chams and

<sup>18</sup> UNESCO biosphere reserves fulfill three functions: a conservation function; a development function; and a logistic function. Geographically, biosphere reserves differentiated into three zone types: *core areas* that should be securely protected sites for conservation purposes; *buffer areas* which surround core areas and are used for cooperative activities compatible with sound ecological practices; and *transition areas* where stakeholders work together in a variety of economic and other activities to manage and sustainably develop the biosphere reserve (ADB 2005<sup>c</sup>).

Vietnamese minorities around the lake; governance including reducing corruption and support of decentralization and deconcentration process; promote regional cooperation working with the Mekong River Commission (MRC); and promoting private sector growth. The ADB openly admits that ‘Lending operations will constitute, by far, the bulk of ADB assistance’ (ADB, 2005<sup>c</sup>).

There would appear to have been a subtle shift from the ‘Tonle Sap Initiative’ with its emphasis on TSL, to the TSBS with its more encompassing reach. Apparently the TSI’s ‘practical expression is in a suite of loan and technical assistance projects through which the Tonle Sap Basin Strategy will be effected’<sup>19</sup>. However, the recent ADB publication detailing the TSBS released in April 2005 fails to mention the TSI at all (ADB, 2005<sup>c</sup>). The obvious suggested implication of this is that the ADB has claimed both a wider geographical scope and more broad ranging reach of investment opportunities (including in agriculture, fisheries, and forestry) within the entire basin.

Yet despite the hype, voluminous consultants’ reports, and glossy magazines, on the ground ADB’s track-record is far from proven, and indeed projects that have been implemented so far and that have had time to become established (TSEMP, SCIRIP) are performing disappointingly (*e.g.* Middleton and Pen, 2005<sup>c</sup>). However, the ADB is acting as if it is the leading authority on investment in natural resources in TSL. It would appear that the RGC is willing to commit to a series of ADB loans in rapid succession despite a lack of proof of successful and sustainable project implementation. Many normal Cambodians around TSL, however, are more wary of taking out so many loans when the benefits of projects are as of yet unproven (as well as poorly understood by most communities)<sup>20</sup>. Interestingly, the ADB has recently announced two major grants to Cambodia in October 2005, namely: the Tonle Sap Sustainable Livelihoods Project (US\$15 million); and the Tonle Sap Water Supply and Sanitation Sector Project (US\$18 million) (ADB, 2005<sup>d</sup>). As noted above, the first of which was intended until very recently as a loan.

### **5. The Tonle Sap Environmental Management Project (TSEMP)**

TSEMP is the first ADB-financed, loan-based project implemented under the TSI. According to the Report and Recommendation of the President (RRP) the project will ‘enhance systems and develop capacity for natural resource management coordination and planning, community-based management of natural resources, and conservation of biodiversity in the TSBR’ (ADB, 2002). Essentially, TSEMP is a conservation orientated project with strong elements of capacity building for the implementing Government agencies, and support to the lake-wide establishment of community fisheries<sup>21</sup>. Whilst admittedly working under extremely difficult circumstances, on

---

<sup>19</sup> Description of the relationship between the TSI and the TSBS offered by the office of the Tonle Sap Initiative, Phnom Penh, Cambodia (Pers. Comm.).

<sup>20</sup> Comments at ‘Community Fisheries Forum’ held in Phnom Penh on 16<sup>th</sup> July 2005. See Middleton and Pen (2005<sup>b</sup>)

<sup>21</sup> Prior to 2000 and since French colonial times, the primary management tool for fisheries around Tonle Sap Lake was ‘commercial fishing lots’. By the late 1990’s some 80% of the dry season lakeshore was under the control of 18 fishing lots (Evans *et al.*, 2004). Initiated in October 2000 by Samdech Hun Sen, Prime Minister of Cambodia, by February 2001 56% of the commercial fishing lots had been released to the community under the management regime of ‘Community Fisheries’ (CFs). The reform was conducted within the context of escalating conflict, in particular between commercial fishing lot owners and subsistence-scale fishers, and was widely lauded at the time (FACT, 2002). Following the reform, Government agencies and numerous local and international organizations began

many accounts TSEMP is in difficulty, suffering from project delays, weak implementation due to low capacity of government staff and poor social fabric within communities around TSL, and coordination problems. There remains a confusion in mandates between the Ministry of Environment (MoE) and the Ministry of Agriculture, Forestry, Fishery (MAFF) regarding management responsibility for TSBR arising from the conflict between conservation and resource exploitation activities<sup>22</sup>, together with a challenged relationship between the implementing government agencies and the UN agencies (hired by direct selection) FAO and UNESCO, the latter withdrew from offering services to the TSEMP in late 2004 (Mak, 2005; Middleton and Pen, 2005<sup>a</sup>). It can only be hoped that as the project establishes itself the situation will become improved, as potentially the project offers major benefits to the population living around TSL.

### **5.1 The Tonle Sap Biosphere Reserve Secretariat**

Coordination of management of the TSBR is under the TSBR secretariat that was provided for in the 1994 Royal Decree that established the biosphere reserve, stating that ‘A Tonle Sap Biosphere Reserve Secretariat shall be established under Cambodian National Mekong Committee to coordinate and strengthen cooperation between ministries, agencies, local authorities, and communities...’<sup>23, 24</sup>. The TSBR secretariat was formally established under the ‘Sub-decree on the Establishment, Role, and Functions of the Secretariat for the Tonle Sap Biosphere Reserve’ (2001). Importantly, the sub-decree identifies the role of the TSBR secretariat as ‘to facilitate coordination and strengthen the communication and cooperation among relevant agencies’. It follows that the TSBR secretariat must depend on ‘voluntary’ implementation by line agencies for management of the TSBR, coordinated through the secretariat.

The TSBR secretariat will work towards the three functions of management given in the 1994 Royal Decree that established the biosphere reserve, summarized in Claridge (2004<sup>a</sup>) as:

- ‘...to contribute to the conservation of biological diversity ... and to the restoration of the essential character of the environment and habitat’
- ‘... to foster sustainable development ...’
- ‘... to provide support to demonstrate projects, environmental education and training, research and monitoring ... related to ... conservation and sustainable development’

---

working with fishing communities to establish CFs. Yet, whilst individual community fishery success stories exist, in general lake wide successful implementation of CFs has not yet occurred. Component II of TSEMP aims to facilitate development of CFs.

<sup>22</sup> In a paradoxical circumstance, MoE is given responsibility for managing the three ‘core areas’ of the biosphere reserves, which are concurrently demarcated as commercial fishing lots that come under the mandate of the Department of Fisheries (MAFF).

<sup>23</sup> CNMC is an interagency institution that works closely with the Mekong River Commission secretariat and has a mandate of ‘The CNMC is a national institution operating directly under the Royal Government of Cambodia, to assist and advise the latter in all matters relating to the formulation of water policy, strategy, management, preservation, investigation, planning, restoration, and the development of the water and other related natural resources of the Mekong River Basin within the whole country contributing to the sustainable development of the national economy and infrastructure for the benefit of the country and people’. The CNMC is under the Cambodia Council of Ministers.

<sup>24</sup> The TSBR is located within the CNMC Secretariat under the Office of the General Secretary.

The TSBR secretariat is steered by a committee of 14 ministries<sup>25</sup> and this arrangement potentially offers the opportunity for ownership of the TSBR by all stakeholders as no one authority is responsible for its management. Whilst the TSBR secretariat was officially established in 2001 under the CNMC, the secretariat's structure is presently being redefined by a two phase TA under the TSEMP. Phase two of the TA was completed in August 2005, although the revised Secretariat structure remains to be finalized (Mitchell, 2005). Mechanisms for the participation of Civil Society with the TSBR secretariat, at present not existent, suggested by the TA's are either: 'consultative committees' formed separately of industry representatives, NGO representatives, and community representatives (Claridge, 2004); or 'provincial TSBR advocacy forums' (Mitchell, 2005). Considering the present circumstance, the extent of Civil Society participation, and in particular local community, is in reality likely to be limited and is discussed below in section 5.3.

The TSBR secretariat in many ways remains at a formulative stage and is presently operating under an interim arrangement that does not have all committees/ boards/ technical working groups formed and does not cover the entire area of the TSBR. For all practical purposes, at present the main function of the TSBR secretariat would appear to be to coordinate reports generated by the various components of the TSEMP project, guided by the TSEMP steering committee<sup>26</sup>! Following a process of action learning and consultation the TA recommends that a permanent arrangement be put in place within three years (Claridge, 2004<sup>a</sup>).

## 5.2 Challenges faced by TSBR secretariat

Considering the conservation and sustainable development management objectives stated above, management of the water resources of TSL is of paramount importance. Furthermore, reflecting on the diversity of livelihood strategies and other interests around the lake, indicated in the number of ministries constituting CNMC (the secretariat's steering committee), an integrated approach will necessarily have to be taken, yet coordinated management at a lake-wide scale is both a new concept and a new process for both the national Government agencies and provincial line agencies involved. Undertaking such a complex task on a lake-wide scale is ambitious, and fraught with barriers that must be overcome. These include:

- *Neutrality of the secretariat*, as many 'permanent' staff are seconded from Ministries with particular interests in the lake;
- *Secretariat effectiveness*, as the secretariat has no powers to enforce decisions made by the members. Some government agencies may not see sufficient benefit from the secretariat's members' decisions to adequately cooperate, for example being narrowly constrained by their sectorial targets or project-driven activities, competitiveness between agencies for both jurisdiction and access to

---

<sup>25</sup> (i) Ministry of Agriculture, Forestry and Fisheries; (ii) Ministry of the Environment; (iii) Ministry of Water Resources and Meteorology; (iv) Ministry of Rural Development; (v) Ministry of Public Works and Transport; (vi) Ministry of Land Management and Urbanization; (vii) Ministry of Interior; (viii) Ministry of Justice; (ix), Ministry of Tourism; (x) Ministry of Planning; (xi) Ministry of Defense; (xii) Cambodia National Mekong Committee; (xiii) Council of Ministers; (xiv) National Assembly and the Prime Minister.

<sup>26</sup> Related to TSEMP, CNMC is charged with monitoring and coordinating project activities, and formulating common policy objectives for managing the TSBR through the TSBR secretariat.

- funds, or the untransparent influence of powerful people with vested commercial interests;
- *Government capacity* is generally low, and whilst some competent staff exist at the central level, provincial level implementing line agencies are generally weaker. Beyond this the relationship between local government officers and communities can be poor. Often a patriarchic viewpoint is taken by government officers when dealing with communities (and to some extent local NGOs);
  - *Long term costs for running the secretariat*, which are not identified and raises questions of sustainability of the secretariat beyond the TSEMP lifespan;
  - *Lack of opportunity for participation by Civil Society stakeholders*, discussed in section 5.3;
  - *Simultaneous attempt to establish a Tonle Sap Basin Management Organization*, discussed in section 6.4.5.

### **5.3 Participation by communities in TSBR secretariat**

Communities living around TSL suffer from poor cohesion because social fabric has been largely destroyed due to recent historical factors, and poverty remains endemic. The immediate priority of most rural people within the TSBR is to cater for their day to day needs, making sustainable resource management and conservation value only a secondary consideration. Attempts at community organizing in both fisheries and irrigated agriculture by larger projects have seen limited success to date (Middleton and Pen, 2005<sup>a, b</sup>). Individual cases of successful implementation on a smaller scale do however exist, which are mainly managed by local NGOs (Middleton *et al.*, 2005). Environmental education and awareness is generally low, and even where awareness exists if alternative livelihood options are not present there is not much that poor rural communities can do. Whilst in the long-term issues of social capital, livelihoods options, and education can and are being addressed (for example by the TSI), in immediate terms this represents a barrier both to implementation of conservation and resource management objectives set by the TSBR secretariat, as well as effective community participation within the secretariat, and must be accoutered for.

The present social conditions explain why it would be difficult for communities to participate within the Secretariat system, especially for minorities including the Vietnamese and Muslim Cham. Only limited community networks<sup>27</sup> exist at present due to both the large area of TSL and the overall level of poverty, although in recent years development assistance has increasingly developed community resource user groups and wider network<sup>28</sup> (Claridge 2004<sup>a</sup>; Bradley 2005). Furthermore communities often do not feel empowered to voice their experience and opinions in the presence of senior Government officials. Regarding participation of NGOs in the secretariat, who overall are more effectively able to communicate with government officials and are better networked, in a remarkably honest assessment the TSBR secretariat consultant points out that there are ‘acceptable’ and ‘unacceptable’ NGOs, the latter of which Government agencies are usually not readily willing to engage (Hughes and Conway, 2004, cited in Claridge 2004<sup>a</sup>). ‘Unacceptable’ organizations

---

<sup>27</sup> For example, Forest User Communities, Farmer Water User Groups, and Community Fisheries groups

<sup>28</sup> Internal power structures within communities will also be influential to grassroots representativeness of any ‘community consultative committee’

often include local organizations that undertake active advocacy work and generally have stronger links with grassroots communities.

The TSBR secretariat has been formed to date in a ‘top-down’ manner in many instances without the active participation of Civil Society stakeholders. Yet without grassroots support TSEMP will likely be unsuccessful. Within the TSEMP project the potential for community strengthening and therefore participation exists, for example in the formation of Community Fisheries, and Government efforts in implementing the project effectively should be encouraged.

## **6. The Tonle Sap Basin Management Organization (TSBMO)**

The formation of the TSBMO, as advocated by ADB, will involve the establishment of a coordinating basin-wide organization that should enable representation of all relevant stakeholders working towards adopting the practices of ‘Integrated Water Resource Management’ (IWRM) to manage water resources in the TSLB sustainably<sup>29</sup>. The TSBMO plans to build upon the TSEMP project, in particular the administrative structures developed by the TSBR secretariat, by establishing a basin-wide decentralized management system.

The process of developing the TSBMO has undergone two ADB Technical Assistance (TA) grants to date, TA4212-CAM (Wright *et al.*, 2004) and TA4427-CAM (Milner *et al.*, 2005), entitled *Establishment of the Tonle Sap Basin Management Organization I* and *II* respectively. TA4427-CAM is presently at final draft stage, and initially faced difficulties due to disagreement between key government institutions (MOWRAM and CNMC), apparently now resolved. A third TA, planned to commence in August 2005 to initiate pilot projects in Pursat Province has been postponed until May 2006<sup>30</sup>.

### **6.1 What is the TSBMO?**

Milner *et al.* (2005) write that the TSBMO will ‘sustainably develop the Tonle Sap Basin’s economy and infrastructure’, and will advise on:

- formulation of water policy and strategy to manage, preserve, investigate, plan, and develop water and related natural resources, and
- policy and strategy to conserve biological diversity and maintain, use and manage natural resources within the TSBR’

It is beyond the scope of this paper to discuss the various technicalities of IWRM and basin management organizational configurations. BMOs are ‘co-ordination organizations reporting to interested parties and society as a whole, with their own legal entity and financial resources to enable a sustainable management of water in all its aspects .... These organizations should promote correct understanding of the problems derived from water management, stimulate public participation in decision making, and avoid (or at least reduce) conflicts’ (Wright *et al.*, 2004). IWRM begins by recognizing that there is a diversity of uses of water (drinking water; food

---

<sup>29</sup> Whilst IWRM is well established in developed countries, its transference to developing countries is yet to be extensively and successfully applied in practice. Its implementation has, however, been strongly advocated in important global arenas, including the Johannesburg Summit and the World Water Forums.

<sup>30</sup> At the time of writing the ToR for the third TA is under preparation

production; energy production; industrial uses; sustain natural ecosystems; recreation; tourism; and navigation), and is used as a means to resolve conflicts between water user groups for sustainable utilization (Wright *et al.*, 2004). What IWRM means in practice, achieved through the establishment of a BMO, is (Wright *et al.*, 2004):

- *Sectorial integration*: Planning and management of water resources taking into account inter-sectorial conflict
- *Economic, social, and environmental integration*: Taking account of social and environmental costs rather than just economic benefits in planning (through Environmental and Social Impact Assessments)
- *Administrative integration*: Coordination of water management activities at all levels of Government (national → provincial → district → communities), including clear legal and organizational framework.
- *Geographic integration*: management by river basin catchments rather than administrative boundaries.
- *Donor integration*: effective use of limited funds by coordinating external support.

IWRM and ‘River Basin Planning’, which in the context of TSLB is referred to more appropriately as a BMO, is central to the ADB’s Water Policy in relation to water resource management (ADB, 2003<sup>a</sup>).

## 6.2 TAs for establishing the TSBMO

The first TA (TA4212-CAM): described the present environmental, geographical, and institutional context of the Tonle Sap basin; outlines the fundamentals of IWRM and River Basin Organizations, applying these concepts to the TSLB; proposes a model for the TSBMO; and developed a ten year roadmap that planned the establishment of the TSBMO within two years (with pilot projects initiated in several sub-basins of the TSB), with an integrated basin plan developed within five years, and a fully functioning BMO within 10 years (Wright *et al.*, 2004).

The second TA (TA4427-CAM) aimed to finalize the TSBMO structure and prepare a pilot project (Milner *et al.*, 2005). The proposed structure consists of a central level overall basin planning and coordination system housed within the CNMC, and a sub-basin planning and coordination system (local level) working at a provincial and district level<sup>31</sup> (figure 4). Unfortunately, by the end of the second TA the final structure was unable to be finalized<sup>32</sup>, although the general organizational characteristics of the TSBMO are (Milner *et al.*, 2005):

- A Tonle Sap Basin Committee (TSBC)<sup>33</sup> and two Secretariats, one for natural resource management in the TSBR (*i.e.* the presently existing TSBR

---

<sup>31</sup> There are 12 sub-basins in the TSLB.

<sup>32</sup> At the national workshop, it was requested to clarify reporting arrangements between CNMC, TSBC, and the Secretariats, and that additional Ministries should be included in the TSBC

<sup>33</sup> The TSBC will include Provincial Governors of the TSLB, and relevant line ministries necessary to implement decisions made by the committee.

- Secretariat)<sup>34</sup> and one for water and related resource planning in the remainder of the TSLB servicing the TSBC (*i.e.* the TSBC Secretariat)<sup>35,36</sup>
- Sub-basin committees, located at a provincial level, for sub-basins that cover two or more provinces
- Provincial Water and Related Resource Committees and secretariats
- District Water and Related Resource Taskforces and secretariats

The TSBMO will have no executive power, and adopts only an advisory and coordination role. Decisions taken within the TSBMO are non-binding on members, and is dependant upon ‘peer pressure’ on individual members to put into effect agreed actions in line with their ministries mandates and their positions of power. At a national level a ‘Stakeholder Advisory Board’ will allow input into the TSBMO (via the TSBC) from donors, NGOs, community natural resource management bodies, and natural resource projects, meeting once or twice annually (Milner *et al.*, 2005). The precise nature of the Stakeholder Advisory Board, or how much weight its advisory input is likely to constitute is not explored by the TA. Similar mechanisms will exist at the provincial and district level for multiple stakeholder participation.

The second TA has also designed a pilot project to be implemented at the sub-basin level by the third TA located in Pursat Province. This location benefits from numerous other projects presently implemented in Pursat Province<sup>37</sup>, and in many ways is dependant upon their resources/ activities. This was originally proposed to commence in August 2005 and run until December 2007, although as noted above has been postponed. The third TA will also establish an interim TSBC at the national level, and through this an interim vision and basin strategy developed.

### **6.3 TSBMO and Cambodia’s Decentralization and Deconcentration (D&D) process**

The BMO model depends on decentralization of decision making to the lowest appropriate level and therefore is consistent with the RGC’s ‘Deconcentration and Decentralization’ (D&D) policy, although this political process is as of yet incomplete. Whilst the ‘Strategic Framework for Decentralization and Deconcentration Reforms’ was finalized in June 2005, the ‘Organic Law’ and related regulations that translate the policy into practice is yet to be ratified. Therefore, D&D is still at extremely early stages in Cambodia and the apparatus of D&D exist at present mainly only on paper, although some aspects of the decentralization policy applicable to NRM have already commenced including formation of some resource user groups, the activities of the ‘Seila’ program, and the first ever democratic elections of Commune Councils in February 2003 (Bradley, 2005; Mak *et al.*, 2005). Therefore implementation of a wide-ranging BMO might be considered premature due a lack of clarity in the final D&D reform.

<sup>34</sup> In essence the TSBMO is treated as a ‘13<sup>th</sup> basin’ of the Tonle Sap Basin.

<sup>35</sup> The TSBMO Secretariat and TSBC Secretariat were originally proposed to be grouped as a Bureau in the CNMC, although this arrangement was discarded at the National Workshop held in July 2005.

<sup>36</sup> At present the TSBMO secretariat has a steering committee, although the steering committee will only remain formed until the completion of the TSEMP project in 2008. Milner *et al.* (2005) propose that then the role of the TSBMO secretariat steering committee be taken over by the TSBC.

<sup>37</sup> Seila, CCB-NRM, NWISP, Cambodia-Australia Agricultural Extension Project, World Bank Pursat river basin study)

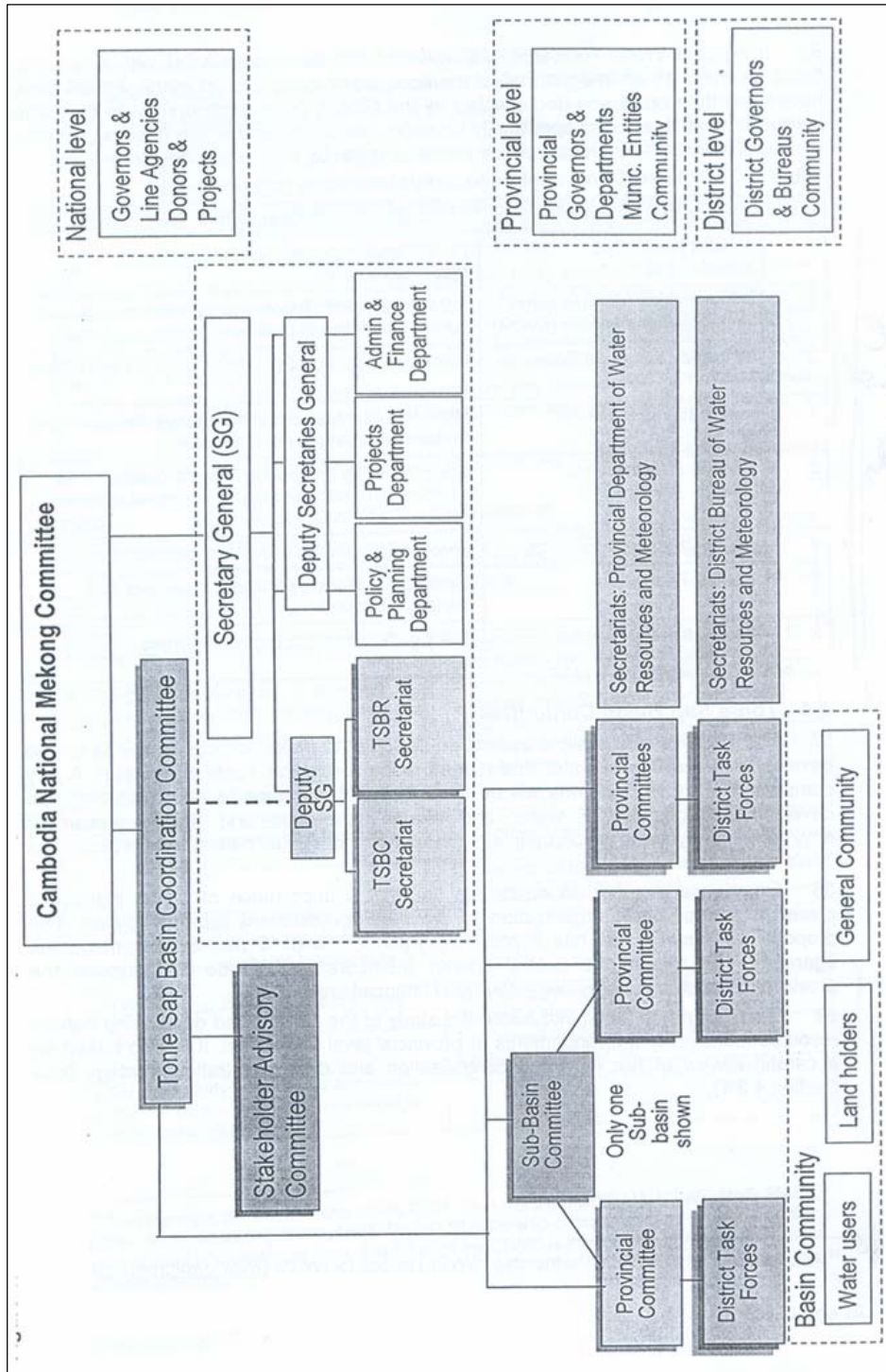


Figure 4: Proposed structure of TSBMO (reproduced from Milner *et al.*, 2005)

#### 6.4 Difficulties faced by TSBMO

There are likely to be numerous difficulties in establishing the TSBMO. All of the risks identified in section 5.2 are applicable to the TSBMO, although due to its increased scope are likely to be magnified (especially those for stakeholder participation). Beyond this, there are difficulties specific to the TSBMO.

##### 6.4.1 Ministry commitment and the influence of powerful interests

Wright *et al* (2004) argue that recognizing the importance of the environment to water resource management for the Tonle Sap Basin, ‘the Tonle Sap Basin Council should have functions that go beyond those normally assigned to a BMO.’ Whilst the consultants are realistic in the sense that the BMO cannot/ should not take over all natural resources, the scope is fairly large and noted to include upland forests, and the Tonle Sap Wetlands. It is also written that ‘In the case of the establishment of a new BMO, for existing agencies with responsibilities for managing the resources of the basin, this new framework implies functional modification, perhaps surrendering some of their functions to the BMO’ (Wright *et al.*, 2004). From this issue arises perhaps the greatest challenge faced by the TSBMO, which is in fact two-fold, and will work either to block formation of the TSBMO completely, or to ensure that its influence and power is much reduced. Firstly, opposition will arise by sectorial government institutions due to the significant quantity of economically valuable natural resources present in the TSLB – attempts to coordinate management will be seen as a threat to jurisdictional responsibility and power, and will meet with strong resistance<sup>38</sup>; indeed, this would appear to have already occurred, and has resulted in the TSBMO now adopting only a coordinating role. Secondly, powerful private interest groups operate within the TSLB with vested interests in large-scale exploitation of natural resources (land, forests, and fisheries) and for whom accountability to the TSBMO is undesirable, and that will therefore attempt to undermine any serious management attempts. These groups are often influential within Government institutions and therefore might act to block the TSBMO through these. Claridge (2004<sup>b</sup>) reports that ‘two years of negotiations were necessary to arrive at the management functions of the TSBR Secretariat contained in the Prime Ministers Sub-Decree which established that body. During the negotiation process it appears that hard-line positions taken by line agencies effectively removed all significant power that the Secretariat might have had to allow it to undertake its coordination role.

The Ministry of Water Resources and Meteorology (MOWRAM)	General responsibility to manage water resources
The Ministry of Industry, Mines, and Energy (MIME)	Water supply to provincial towns and for single purpose hydropower schemes
The Ministry of Environment (MoE)	Supervise and manage the environment including managing protected areas and coordinating conservation work
The Ministry of Agriculture, Forestry, and Fisheries (MAFF)	Water resources related to agriculture, fisheries and forestry

<sup>38</sup> Milner *et al.* (2005) write that ‘... there is no support in the RGC agencies for any delegation of their powers and responsibilities to a newly established basin management organization’ and ‘Significant argument has also been put up against establishing a skilled ‘technical office’ required by a river basin commission. Line agencies and advisory bodies alike jealously guard data, technical knowledge, and skills.’

Wright *et al.* (2004) identify ‘A stable, strong institutional framework that is supported by the highest levels of government and established by a law, regulation, or decree’ as critically important for the successful establishment of the BMO, and goes on to write ‘Without the highest level of support, interagency rivalry will work against the success of a new coordinating agency’. Clearly at present this support does not exist. At the TSBMO National Workshop held on 20<sup>th</sup> July 2005, there was a definite lack of clarity amongst national and provincial level participants regarding the details of TSBMO, or even the key points; this included the relative merits as to whether the TSBMO should be located within MOWRAM or CNMC (which apparently was agreed a long time ago). In an apparent move to disempower the TSBMO, the status of the TSBR secretariat and TSBC secretariat was reduced from that of the level of ‘Bureau’ down to the level of department within the CNMC. Similarly, the Tonle Sap Basin Committee was renamed as the ‘Tonle Sap Basin *Coordination* Committee’, reaffirming its non-executive powers.

#### **6.4.2 Precisely what is the BMO and what does it stand for?**

At present there is a poor understanding amongst stakeholders as to how the TSBMO will function (despite its proposed significant influence from national to local level), and importantly what it stands for. The potential scope of impacts on local communities will depend primarily on the ‘basin vision’ and ‘basin strategy’ developed by the TSBC, and under which the local levels (provincial and lower) will operate. It is not clear, at present, to what extent community and local level stakeholders will be able to provide an input in to the formulation of these basin-wide statements, or how much flexibility will be delegated to the local level. Therefore, there is a danger that the process will be top-down with visions developed mainly by central level. It should also be noted that, as discussed in section 6.4.1, it will be extremely difficult to arrive at a shared basin vision with such a diverse range of stakeholders and vested interests present in the TSLB.

#### **6.4.3 A demand for TSBMO amongst stakeholders?**

At present, with the exception of CNMC and possibly MOWRAM, there is little to no call amongst either National level or local level government, or resource users for a BMO<sup>39</sup>. Therefore, the ADB in pushing the TSBMO is attempting to create a need where none at present exists. That is not to say that in the long-run Cambodia would not benefit from a BMO, but without a strong need identified by the stakeholders any attempt to establish a meaningful BMO is likely to be unsuccessful. Indeed Milner *et al* (2005) admit as much writing ‘Outside of the Biosphere Reserve, in the wider basin, there is no agreement on the need for a coordination body among the line agencies’.

In order to successfully establish a BMO public awareness together with broad stakeholder participation (communities, the various levels of government, and others), is essential. Claridge (2004<sup>b</sup>) notes that it is the process of establishing a BMO that is far more important than the rapid and forced creation of institutions embodying the

---

<sup>39</sup> The Mekong River Commission (MRC) advocates planning at a basin level. The Basin Development Plan (BDP) core program of MRC is in the process of developing a Mekong-basin wide management plan that will be formed following the study of the main sub-basins throughout the region (Tonle Sap Lake is sub-basin 19C). CNMC with support from MRC is in the process of studying Tonle Sap Basin, identifying potential projects and developing an implementation plan. The BDP, however, is focused on identifying projects that will likely have a transboundary impact. The way forward for the BDR project is at present unclear. The relationship between ADB and MRC at present is not close.

BMO. Therefore a top-down approach driving the concept onto multiple stakeholders, particularly at a local level, is unlikely to inspire the cooperation necessary for the establishment of a successful BMO. The proposed rapidity of the planned BMO's establishment further brings into question the likelihood of engaging the meaningful participation required for a sustainable BMO to be established. A 'need' for a BMO is only generated as multiple-stakeholders gain a deeper understanding of IWRM issues through experience, which in turn is only gained over time with significant awareness raising efforts.

Wright *et al.* (2004) identify that successful BMOs are critically dependant on 'Strong community and stakeholder participation ...' The TSBC secretariat will have a 'Stakeholder and Community Participation Unit', whose responsibilities will include developing basin-wide community consultation procedures, and recommending education and awareness raising programs<sup>40</sup>. As discussed in section 5.3, at present community level organization is weak, and provincial government official capacity poor, and therefore it is not likely that a strong BMO can be created under such conditions, and further social capital building and awareness raising should be conducted as a pre-requisite. Wright *et al.* (2004) call for '(a) an increase in transparency (at local level) in decision making, and (b) a substantial increase in local stakeholder involvement in decision making', neither of which, whilst desirable and under the process of development, are likely to have been significantly achieved in the near future<sup>41</sup>.

Wright *et al.* (2004) summarize the present situation for farmers well, citing a case study in Komping Puoy Reservoir, Battambang Province, where there had been no tradition of payment for water use for irrigation and an attempt to introduce a water charge failed for a number of reasons including: problems of reliable water supply; poor dialogue with the communities; and the inability of the authorities to manage fee collection. Therefore, water is still regarded as a free resource, and any attempt to begin charging for water resources via the proposed introduction of 'water use licensing fees' will likely be met with significant resistance unless intensive awareness raising activities that explain and demonstrate the definite benefits for these communities are conducted. In the absence of water licensing (a basic water management tool), which may or may not be desirable at present, it is difficult to see how the TSBMO will be able to manage the water.

#### **6.4.4 A proven need for TSBMO to protect TSL?**

Wright *et al.* (2004) identify that 'the *main* focus of natural resource management in the basin is the Tonle Sap Lake, rather than just the rivers that feed it' [emphasis the consultants]. It is assumed, therefore, that there is a direct link between the multi-faceted deterioration of the environmental status of TSL and the TSLB. There is,

---

<sup>40</sup> The TSB secretariat possesses a similar unit already, and the TA recommend that the two units be merged (Milner *et al.*, 2005).

<sup>41</sup> As noted in section 5.3, establishment of Farmer Water User Groups, Community Fisheries Groups, and Forestry User Groups have met to date with only extremely limited success and are presently at an embryonic stage of development, although this does not preclude their success in the future (Middleton and Pen, 2005<sup>a,c</sup>). It is precisely the success of these resource user groups that is prerequisite to the successful grassroots participation necessary for the establishment of the TSBMO. Presumably utilizing these groups somehow, Milner *et al.* (2005) recommend 'sub-basin committees be provided with community input by establishing a community based natural resource and environment management organization', although difficulties facing this are not explored.

however, a lack of scientific evidence to support this assumption. In fact, it would appear that many issues that require immediately addressing via improved management, for example the loss of fish spawning grounds due to the conversion of flooded forest to agriculture and illegal fishing depleting fish stocks should be resolved within the TSBR itself<sup>42</sup>. TSEMP is already underway to establish natural resource management plans within the TSBR (Milner *et al.*, 2005), although arguably with limited success to date (Middleton and Pen, 2005<sup>a</sup>). Issues that do require addressing within the TSLB (as well as upstream along the Mekong) are proposed hydropower schemes and irrigation schemes. Regarding management of upland forested areas, Claridge (2004<sup>b</sup>) points out that many of the most significant forested area within the TSLB are already within protected areas, and therefore subject to management, however limited; therefore their further protection would not require the formation of a new TSBMO, but the improvement of management in place.

#### **6.4.5 Risks to the TSBR secretariat**

Attempting to establish the TSBMO may be detrimental to other ADB supported water resource management initiatives, namely the TSBR secretariat. Claridge (2004<sup>a</sup>) in developing the TSBR secretariat's mechanisms identifies the TSBMO as a specific risk to the establishing the TSBR secretariat on two main counts: 1) Confusion between the two initiatives on the part of stakeholders (both count sustainable development, together with coordination and strengthening cooperation functions amongst their objectives); and 2) Anticipated opposition to the TSBMO could delay or even block the further development of the TSBR secretariat.

At present it is unclear to whom the TSBR secretariat will be secretariat to. Possibilities include directly to the CNMC general secretary (as at present), to project steering committees (for example the TSEMP steering committee as at present), or to the TSBC. In many ways it would appear that there is significant overlap between the TSBR secretariat and the proposed TSBC secretariat to the extent that it could be questioned whether their ultimate destination is merger. Indeed it has already been proposed that the Research, Monitoring, and Data Management and Stakeholder and Community Participation Units/Divisions be merged (Milner *et al.*, 2005)

#### **6.4.6 Present capacity levels**

Both the concepts and practical implementation of IWRM are complex. At present capacity, particularly at the provincial level and lower are extremely limited, and would require significant building. Milner *et al.*, (2005) identify capacity, especially outside of the central level, as a major issue. With such limited experience on many fronts, ranging from the D&D process and its implications for decision making at the national level, to community awareness raising and management in natural resource management, the level of skill required to successfully implement the TSBMO may not exist at present.

#### **6.4.7 Can Cambodia afford a BMO?**

Milner *et al.*, (2005), in their draft final report note that 'The funding requirements for the Tonle Sap Basin Coordination Committee and the provincial level committees will likely exceed funds from the RGC sources. On-going funds are needed'. As a

---

<sup>42</sup> According to the MRC environment program there is no conclusive evidence either of water quality deterioration or siltation in the TSL (reported in Milner *et al.*, 2005)

rough estimate, the TA guesses that over 10 years the set up costs will be around US\$4.5 million, noting that many of the actual ‘activities’ of the TSBMO will actually be conducted by other projects with their own funding sources (*i.e.* the TSBMO funding is mainly for meetings, capacity-building, and salary costs for management functions). No funding has been secured, and whilst potential avenues are identified (taxes, resource licensing and use fees, trust funds) these are speculative. No economic analysis has as of yet been conducted to demonstrate the benefits of the TSBMO. It is arguable that whilst in the long-term improved management of natural resources in the TSLB via a TSBMO is likely to be significant, at present there are more urgent priority investments that should be pursued first, for example social capital building activities including community based natural resource management within the TSBR.

#### **6.4.8 Conflict with existing NRM mechanisms**

The administrative management situation within which the TSBMO is attempting to carve itself a niche is complex. At present, despite the RGC’s D&D strategy Cambodia’s system of governance is fundamentally hierarchical. As such, attempting to establish a comparatively non-hierarchical system with meaningful stakeholder involvement will prove to be difficult, and numerous important barriers remain to be addressed. Importantly, within the present administrative system channels for decision making/ conflict resolution already exist, although not specializing in water resources and their management (Milner *et al.*, 2005):

- Issues of conflict resolution between provinces (which could include water resource management issues) are referred to the Ministry of Interior for resolution.
- At a provincial level, the ‘Provincial Rural Development Committee’ (PRDC) includes water resource management within their mandate

Milner *et al.*, (2005) note that there must be a clarification between the role of MoI and that of TSBMO in resolving inter-provincial conflicts on water resource use, a task that may be easier said than done considering that the MoI will not likely concede any of its powers lightly. Also, precisely how the TSBMO provincial and lower level committees would interact with the PRDC is not addressed<sup>43</sup>.

Considering the Cambodian D&D strategy and provincial-level planning regarding cross-sectorial natural resource management, Milner *et al.* (2005) write ‘Each province will find it necessary to form Provincial Water Sector and Related Resource Management Committees and District Task Forces as part of the devolved system of Governance, whether or not a TSBMO is to be established’. Therefore, it is arguable that the TSBMO is an additional level of bureaucracy that, under the present circumstances of D&D reform, is adding unnecessary layers of complexity at its early stages and that any BMO should be allowed to evolve *from* the D&D process as the need arises rather than be forced upon it. Indeed, Milner *et al.* (2005) recommend that, regarding the proposed TSBMO pilot project, only interim committees responsible for

---

<sup>43</sup> At the provincial level Milner *et al.* (2005), in a survey in Pursat Province, identified there to be no less than 45 committees operating from provincial down to village level, although none dealt directly with water and the TA argues that some of these could be consolidated. The research discovered, however, that none of the committees met as regularly as designated, and some were in fact extremely infrequent.

water and related resource management should be formed, and that ‘permanent committees are not recommended until some of the outcomes of the D&D Strategy are known’.

### **6.5 What is driving the TSBMO?**

The above analysis has demonstrated the TSBMO to be an ADB-driven initiative, rather than that based on the perceived need of stakeholders and the D&D process. Milner *et al.* (2005) identify two areas where ‘special effort’ is required: public awareness; and information and knowledge. Conducting these activities would contribute towards generating the perceived need amongst stakeholders for the TSBMO, as well as the knowledge required to create a BMO. Therefore, it is implicitly recognized that the foundations for establishing a TSBMO are at present not sufficient.

Considering the proposed activities for the third TA of the TSBMO, whilst the proposed pilot project in Pursat province would appear possible to implement without too many serious problems, the present political will for the national level activities that involve establishing an interim TSBC that would prepare a basin vision, objectives for NRM within the TSLB, and provide the support to the Pursat Province activities are less certain. Critically, however, without a meaningful interim TSBC the pilot project in Pursat is lacking the fundamental top-level guidance that forms the coordination and management rationale when establishing a BMO.

## **7. Conclusions**

### **7.1 The ADB’s influence in the water sector**

The portfolio of projects under the Tonle Sap Initiative and more broadly the Tonle Sap Basin Strategy are rapidly gaining momentum, and under this banner the ADB have been extremely influential in setting the development agenda of the Tonle Sap Lake, and to a lesser extent its basin. Ongoing FACT research and monitoring has demonstrated that many of the ADB’s projects to date within the TSLB, including the SCIRIP and the TSEMP, are attaining only partial success at present and will require substantial effort in the future to achieve their intended outputs. The proposed rapid succession and escalating extent of projects proposed by ADB for the TSLB raises genuine concerns that Cambodia’s debt to the ADB will spiral out of control with little concrete benefit on the ground in terms of improved livelihood and poverty alleviation<sup>44</sup>. At present, it is questionable how much genuine ownership there is by rural communities living within the TSLB.

Concomitantly, the ADB has made large strides into the policy and legislative framework of the water sector, notably becoming the sector’s ‘lead agency’. Having recently supported the TSBR secretariat with significant ADB policy influence, and now in the process of attempting to set up the more broad ranging TSBMO, powerful mechanisms that will control the water sector are planned to be put in place which will necessarily be fully aligned with the ADB’s Water Policy and development strategy.

---

<sup>44</sup> The recent substantial grants to implement the ‘Tonle Sap Sustainable Livelihoods Project’ and the ‘Tonle Sap Water Supply and Sanitation Sector Project’ are certainly welcomed

## **7.2 TSEMP and the TSBR secretariat**

Through the TSEMP the ADB has established a foothold in managing natural resources in the TSL region. In design, many aspects of the TSEMP are commendable including the lake-wide establishment of community fisheries. The TSBR secretariat (and its related committee the CNMC) is in principle a good first step towards adopting a coordinated approach to lake-wide, inter-ministerial management with participation from Civil Society, although much remains to be done. Whilst presently working under challenging circumstances and subject to numerous difficulties, there is a general will amongst Civil Society to work with the TSEMP, although at present there are limitations in the extent of participation and these should be prioritized for development. Civil Society needs to hold the project and its implementing agencies accountable to the project design.

## **7.3 TSBMO**

Awareness amongst Civil Society about the TSBMO is low, and as such there is very little perceived need for this type of organization at present. That is not to say that the establishment of the TSBMO is not desirable in the long-term. The development of a shared vision for the entire TSLB is required to coordinate development activities, and cross-sectorial management of water resources is central to achieving sustainable development of the TSLB. Yet this paper concludes that the top-down, forced establishment of such a wide ranging and ambitious organization is premature, and may well lead to conflict and confusion, rather than improved cooperation and efficiency. The capacity of stakeholders, including both government and community, remains to be sufficiently developed, there is no perceived need for such an organization amongst stakeholders, Cambodia's D&D strategy remains to be fully developed, and the political foundations necessary for a BMO are not yet firmly established.

The ADB's aggressive push to impose the TSBMO would therefore appear linked to its wider ambitions to become the 'lead' agency of the water sector. The TSBMO would possess significant influence, if effectively established, not just over 'water', but over all of the natural resources that depend upon it (*i.e.* agriculture, fisheries, and forestry). In this way, through providing technical support via its consultants directly to ministries member to TSBMO, the ADB will yield considerable influence over all of the natural resources of the TSLB, and therefore able to impose its own brand of development.

The TSLB is, geographically, one of the most economically important regions of Cambodia, containing the most productive fisheries and agricultural land. In the future, agriculture is envisioned as an 'engine of growth', and therefore it is opportune for the ADB to be so influential in such important sectors. In fact, the ADB is already active in Cambodia's agricultural sector. The ADB's CSP 2005-2009 for Cambodia states that '... the main thrusts of ADB's interventions in agriculture are directed at increased commercialization' and 'ADB's support for irrigation development will be integral to its support for agriculture'. There is no doubt that expansion of irrigated agriculture is urgently needed in Cambodia, although development following a route of commercialization that encourages large-scale irrigation schemes may not be appropriate. A sensitivity in project development to local circumstances may yield project designs favoring smaller scale irrigation schemes, combined with improved agricultural techniques and local water resource management (Middleton and Pen,

2005<sup>c</sup>). Irrigated agriculture development at the expense of wild capture fisheries that remain of vital importance to many of Cambodia's poorest should be actively discouraged.

The imposition of the ADB's water policy that views water as an 'economic good', via laws, regulations, and project designs, is in many ways prerequisite to the commercialization of natural resource sectors be it agriculture, forestry, or fisheries. Whether such commercialization will be sufficiently pro-poor is questionable, in particular considering the likely ongoing weak voice of local communities and the general trends of natural resource exploitation experienced in Cambodia at presented.

## **8. Recommendations**

### **8.1 ADB and Cambodia's Water Sector**

Cambodia has become yet another test-bed for the ideals enshrined within the ADB's Water Policy<sup>45</sup>. This paper has demonstrated the extensive and influential intervention of the ADB in the early stages of development of Cambodia's water sector, and as a consequence in implementing its Water Policy which is founded on the paradigm of water as a 'socially vital economic good'. However, first and foremost water is a common property owned by the people and the state and therefore the Cambodian citizens' right of access to adequate amounts of water must be ensured. Development of the water sector, and therefore necessarily the fisheries and agriculture sector, must be ensured to be pro-poor and that small-scale farming and fishing activities are not under-valued and therefore sacrificed in the name of economic development, which whilst ostensibly in the name of poverty alleviation often works against the most vulnerable. Therefore, it is of paramount importance at this stage to recognize that management of water resources must be founded on meaningful participation of all stakeholders to ensure equitable development of this shared resource.

### **8.2 The Tonle Sap Initiative and the Tonle Sap Basin Strategy**

Whilst it is commendable that the ADB has committed to a long-term strategy for the TSLB, rather than a series of shorter term interventions, the rapidity of the loans proposed together with the banks limited experience to date leaves little space for lessons learnt to be incorporated into future project designs. Cambodia is one of the poorest countries in Asia and is unlikely to achieve many of its Millennium Development Goals. According to ADB, Cambodia is categorized as a debt-stressed country (ADB 2005<sup>a</sup>). As a result of these conditions, it is arguably more appropriate to slow the rate of lending to ensure an adequate monitoring, appraisal, and process of incorporation of lessons learnt such that money is not spent wastefully. If projects prove to be poorly designed and therefore fail on implementation then rather than the loans benefiting all Cambodian's and paying themselves back, the only result for Cambodia will be a crippling debt. Grants should be provided to develop pilot activities that can demonstrate the effectiveness of proposed interventions before loans are taken out; it is encouraging that the Sustainable Livelihoods project is now offered as a grant rather than a loan.

---

<sup>45</sup> It should be noted that the ADB Water Policy is not so different to the World Bank Water Policy or to the policies of bilateral donors (*e.g.* DFID, DANIDA, Netherlands, AFD)

### **8.3 TSBR Secretariat**

The TSBR secretariat and the committees to whom it is secretariat might be considered the precursory step to formation of the more wide-ranging TSBMO. Whilst several challenges are faced by the meaningful development of the secretariat in its coordination role, these are not insurmountable if sufficient political will exists. Of paramount importance, the finalized secretariat structure must include appropriate channels of communication between Civil Society and the RGC, in particular at the grassroots level. Related to this is the successful establishment of community-based natural resource user groups, together with implementation of the RGC's D&D strategy. Component II of TSEMP relates to the establishment of community fisheries which, although at present is fraught with difficulties, can potentially be in part successful if all stakeholders are able to cooperate in a constructive fashion. Indeed, the ADB's Water Policy states that 'Participation will be the cornerstone of ADB's country water sector strategies; institutional arrangements for participation, particularly at the community level, will be strengthened', and 'ADB will encourage a participatory approach to the conservation and protection of water resources...'

### **8.4 TSBMO**

Whilst the TSBMO is desirable in the long-run, and consistent with the ADB's Water Policy, it is the conclusion of this paper that its full-scale implementation is premature. It would seem more appropriate to wait until the TSBR secretariat/ committees have become established such that there is a general awareness and acceptance amongst stakeholders about the benefits derived from a lake-wide organization, before a wider ranging basin-wide organization is attempted. Undoubtedly implementation of the TSBR secretariat coordination mechanisms, particularly at local levels, will generate crucial lessons learnt that will be of relevance to the TSBMO. In the section entitled 'Getting the policy to work' of the ADB Water Policy it is stated that 'Country capacity to undertake sustainable reform will be continuously assessed and factored into individual water action agenda', which is appropriate to considering the appropriateness of pursuing the TSBMO at this time.

This paper would recommend that full-scale establishment of the TSBMO be postponed until many of the difficulties identified within the paper are more favorable to its establishment. Instead preliminary activities should be conducted in the interim, including small-scale pilot projects that would generate lessons learnt regarding stakeholder awareness raising, community participation, provincial line-agency staff capacity building, and interaction between various committees to generate knowledge, experience, and awareness for a more widespread organization in the future. At this early stage, emphasis should focus on provincial level (i.e. the lower levels of the proposed TSBMO) rather than the national level institutions.

## References

- ADB (2005<sup>a</sup>), 'Country Strategy and Program 2005-2009, Kingdom of Cambodia', *published by Asian Development Bank, January 2005.*
- ADB (2005<sup>b</sup>), 'ADB's CSP, Cambodia Lending Portfolio' in *ADB News from Cambodia: A Quarterly Newsletter of the Cambodia Resident Mission of the Asian Development Bank* March 2005
- ADB (2005<sup>c</sup>), 'The Tonle Sap Basin Strategy' *Published by Asian Development Bank* April 2005
- ADB (2005<sup>d</sup>), '\$18 Million Grant to Help Provide Clean Water and Sanitation to Poor around Tonle Sap, Cambodia' *ADB News Release 163/05, 24<sup>th</sup> October 2005.*
- ADB (2004), 'The Tonle Sap Basin Strategy' *Future Solutions Now: The Tonle Sap Initiative Magazine* Published by the Asian Development Bank
- ADB (2003<sup>a</sup>), 'Water For All: The Water Policy of the Asian Development Bank' *Published by the Asian Development Bank June 2003, based on a policy paper approved by the ADB Board of Directors on 16<sup>th</sup> October 2001.*
- ADB (2003<sup>b</sup>), 'Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Kingdom of Cambodia for the Northwest Irrigation Sector Project' RRP:CAM 34379 *Published by Asian Development Bank October 2003.*
- ADB (2002), 'Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Kingdom of Cambodia for the Tonle Sap Environmental Management Project' RRP:CAM 33418 *Published by Asian Development Bank October 2002.*
- Baran, E. (2005), 'Cambodian Inland Fisheries: Facts, Figures, and context' *WorldFish Centre and Inland Fisheries Research and Development Institute, Phnom Penh, Cambodia*
- Bradley, A. (2005), 'Natural Resource Management Networking in Cambodia: Status, Lessons Learnt, and Future Possibilities', *Published by Community Forestry Alliance for Cambodia*
- Claridge, G. (2004<sup>a</sup>), 'Coordination of Management of the Tonle Sap Biosphere Reserve: Proposed Structures and Mechanisms' *Tonle Sap Biosphere Reserve Secretariat, Cambodian National Mekong Committee*
- Claridge, G. (2004<sup>b</sup>), 'Some reflections on the creation of a Tonle Sap Basin Management Organization' *Discussion paper, Unpublished.*
- Evans, P.T., Marschke, M., and Paudyal, K. (2004). 'Flood Forests, Fish and Fishing Villages: Tonle Sap, Cambodia'. *Asia Forest Network, Philippines.*
- FACT (2002), 'Feast or Famine: Solutions to Cambodia's fisheries conflicts' *Fisheries Action Coalition Team*
- Hughes, C., and Conway, T. (2004). 'Understanding pro-poor political change: the policy process. Cambodia. Third Draft – January 2004'. Overseas Development Institute, London.
- Keskinen, M. (2003). 'The great diversity of livelihoods? – Socio-economic survey of the Tonle Sap Lake, WUP-FIN Socio-economic studies on Tonle Sap 8' *MRCS/WUP-FIN, Phnom Penh*
- Mak, S. (2005) 'Effective use of ADB loans for the development of community fisheries' *Tonle Sap Watch Newsletter Issue 4, Published by FACT*
- Mak, S., Hoeun, H., and Pen, R. (2005). 'Decentralization and Natural Resource Management in Cambodia: Implications of the Decentralization Process to Date, Case Studies in Pursat Province' *Published by FACT*
- McKenney, B. and Tola, P. (2002) 'Natural Resources and Rural Livelihoods in Cambodia: A Baseline Assessment'. CDRI Working Paper 23. *Published by Cambodia Development Resource Institute.*

- Middleton, C. (2004) 'General Fisheries Plan for Management and Development of Tonle Sap' *Tonle Sap Watch Newsletter Issue 1*, Published by FACT
- Middleton, C., and Pen, R. (2005<sup>a</sup>) 'The development of community fisheries around Tonle Sap Lake by TSEMP' *Tonle Sap Watch Newsletter Issue 4*, Published by FACT
- Middleton, C., and Pen, R. (2005<sup>b</sup>) 'The Community Fisheries Forum: Forum Proceedings' *Report on Forum held in Phnom Penh Cambodia on 7<sup>th</sup> July 2005*, Published by FACT.
- Middleton, C., and Pen, R. (2005<sup>c</sup>) 'The Stung Chinit Irrigation and Rural Infrastructure Project' *Tonle Sap Community Database project: Livelihoods Series*, Published by FACT.
- Middleton, C., Pen, R., and Soeung, P. (2005) 'The Stung Chinit Irrigation and Rural Infrastructure Project' *Tonle Sap Watch Newsletter Issue 2*, Published by FACT.
- Milner, H., Carson, S., Sopharith, T., and Sokco, U. (2005). 'Establishment of the Tonle Sap Basin Management Organization II. Draft Final Report. July 2005. TA4427-CAM'. *Asian Development Bank and the Cambodian National Mekong Committee*.
- Milner, H., and Carson, S. (2005). 'Presentations made at National Workshop for TA4427-CAM, Establishment of the Tonle Sap Basin Management Organization II' *Workshop held at Sunway Hotel, 20<sup>th</sup> July, 2005*.
- Mitchell, A.H. (2005). 'Tonle Sap Biosphere Reserve Policy Analysis and Secretariat Strategy' *Tonle Sap Biosphere Reserve Secretariat, Cambodian National Mekong Committee*
- MRC (2004), 'An introduction to Cambodia's Inland Fisheries' *Mekong Development Series No 4*
- Royal Government of Cambodia (2004), 'Address by Samdech Hun Sen, Prime Minister of the Royal Government of Cambodia on Rectangular Strategy for Growth, Employment, Equity and Efficiency', *First Cabinet Meeting of The Third Legislature of the Nation Assembly At The Office of the Council of Ministers Phnom Penh, 16<sup>th</sup> July 2004*.
- Sugita, R., and Goto, A. 'The Chong Kneas Environmental Improvement Project' *Tonle Sap Watch Newsletter May – October 2004*. Published by Fisheries Action Coalition Team
- Wright, G., Moffatt, D., Wager, J., Dararath, Y., and Peng, P. (2004). 'Establishment of the Tonle Sap Basin Management Organization. Final Report. March 2004. TA4212-CAM'. *Asian Development Bank and the Cambodian National Mekong Committee*.