



Technical Assistance Report

Project Number: 38558
October 2006

Kingdom of Cambodia: Preparing the Water
Resources Management (Sector) Project
(Cofinanced by the Government of France)

CURRENCY EQUIVALENTS

(as of 31 August 2006)

Currency Unit	–	riel (KR)
KR1.00	=	\$0.0002396
\$1.00	=	KR4,174.00

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
CNMC	–	Cambodia National Mekong Committee
CSP	–	country strategy and program
FWUC	–	farmer water user community
FWUG	–	farmer water user group
IMT	–	irrigation management transfer
IWRM	–	integrated water resources management
km ²	–	square kilometer
MAFF	–	Ministry of Agriculture, Forestry and Fisheries
MOWRAM	–	Ministry of Water Resources and Meteorology
NSDP	–	National Strategic Development Plan
NWISP	–	Northwest Irrigation Sector Project
O&M	–	operation and management
PIMD	–	participatory irrigation management and development
PPTA	–	project preparatory technical assistance
TA	–	technical assistance
TSBCC	–	Tonle Sap Basin Coordination Committee
TSBMO	–	Tonle Sap Basin Management Organization

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	General intervention
Sector	–	Agriculture and natural resources
Subsector	–	Water resource management
Themes	–	Sustainable economic growth, environmental sustainability, governance
Subthemes	–	Developing rural areas, natural resources conservation, fostering physical infrastructure development, civil society participation

NOTES

- (i) The Tonle Sap basin is, strictly speaking, a subbasin of the Mekong River basin. The tributaries that flow directly into the basin's lake are Boribo, Chikreng, Chinit, Dauntri, Mongkol Borei, Pursat, Sangker, Sen, Siem Reap, Sreng, and Staung.
- (ii) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. This project preparatory technical assistance (PPTA) paper combines two related activities proposed for the water resources sector in Cambodia.

- (i) In 2004, the Government of Cambodia requested the Asian Development Bank (ADB) to provide technical assistance (TA) to (a) prepare a feasibility study for an irrigation and water resources development (sector) project, and (b) help the Government to strengthen its capacity to manage its water resources in a sustainable, participatory, and transparent way. In April 2006, the Fact-Finding Mission of ADB and Agence Française de Développement (AFD) visited Cambodia to formulate parts A and B of the PPTA.
- (ii) In 2003, the Government requested ADB to provide TA to investigate how infrastructure development and natural resources management in the Tonle Sap basin could be better driven, coordinated, and streamlined. In response, ADB provided two TA projects to design and plan the development of an institutional framework for integrated basin planning and management.^{1,2} In February 2006, the ADB Fact-Finding Mission visited Cambodia and formulated part C of the PPTA to continue this activity, in line with the Tonle Sap Initiative.³

2. The Government has agreed with the impact, outcome, outputs, implementation arrangements, and cost and financing arrangements for the TA. The design and monitoring framework is in Appendix 1, and an initial poverty and social analysis is in Appendix 2.⁴

II. ISSUES

3. Cambodia has more than 1,000 irrigation schemes with a potential command area of about 437,000 ha. However, only about 55% of the schemes are considered operational. In the Cambodian context, irrigation largely involves the management of floodwaters in recession. Irrigation schemes are typically designed to supplement rainfall at the start and/or end of the rainy season, and to divert Mekong river water to adjacent farmlands during the dry season. Multiple cropping systems are uncommon. The sustainability of investments in the irrigation sector is a concern, and the Government is keen to improve irrigation-system performance, undertake rehabilitation, and promote beneficiary participation in operation and maintenance (O&M). Investments in irrigation are critical to (i) stabilize and increase rice production, (ii) reduce farmers' susceptibility to droughts and floods, (iii) ensure food security, (iv) encourage agricultural diversification, and (v) move into higher value-added crops.

4. The Government's Rectangular Strategy and National Strategic Development Plan (NSDP) identify the water sector as a key contributor to poverty reduction in Cambodia, primarily through its contribution to (i) improved rural livelihoods, food security, and nutrition through better water management in agriculture and fisheries; (ii) improved access to safe drinking water and sanitation; (iii) improved disaster prevention measures; and (iv) sustained conservation of aquatic ecosystems and biodiversity for the benefit of future generations. The NSDP aims to expand irrigated areas from around 20% currently to 25% of the total rice area by 2010. Reaching this target will require rehabilitating existing irrigation schemes and supporting cost-effective private irrigation technologies. Later, as institutional capacity for sustainable

¹ ADB. 2003. *Technical Assistance to the Kingdom of Cambodia for Establishment of the Tonle Sap Basin Management Organization*. Manila (TA 4212-CAM).

² ADB. 2004. *Technical Assistance to the Kingdom of Cambodia for Establishment of the Tonle Sap Basin Management Organization II*. Manila (TA 4427-CAM).

³ ADB. 2005. *The Tonle Sap Basin Strategy*. Manila.

⁴ The TA first appeared in *ADB Business Opportunities* on 2 June 2006.

management and operation is developed, the program will be expanded into areas covered by large-scale irrigation schemes (i.e., greater than 5,000 ha) in lowland areas.

5. In recent years, the Government has progressed steadily in establishing a legal and policy framework for the water sector. The Ministry of Water Resources and Meteorology (MOWRAM) was set up in 1999. The National Water Resources Policy was approved in early 2004. The Law on Water Resources Management was approved by the Council of Ministers in 2005, and is currently before the National Assembly for approval. Draft regulations have been prepared for (i) river basin management and planning, and (ii) water allocation and basin management. MOWRAM, with ADB's assistance, is finalizing its Strategic Development Plan (SDP),⁵ which was prepared in line with the Rectangular Strategy and NSDP. Elements of the SDP are being incorporated into the Medium Term Strategy for Agriculture and Water (MTSAW, 2006–2010), currently under development by the Technical Working Group for Agriculture and Water Resources. The SDP's institutional goal is to strengthen MOWRAM's capacity to (i) implement water-related legislation and policy; (ii) improve water resources information management; and (iii) develop its administration, management, and human resources.

6. The legal and policy framework promotes sustainable water resources planning and management in a river basin context. Through the adoption of integrated water resources management (IWRM), water will be used to achieve the greatest net economic and social benefit. IWRM aims to prevent conflict and competition by creating an environment conducive to satisfying present and foreseeable demands. However, the policy has yet to be fully implemented and further resources and institutional capacity building are needed.

7. The Government is promoting a participatory irrigation management and development (PIMD) policy to increase water user participation in managing irrigation schemes. MOWRAM has issued *prakas* (regulations) to transfer irrigation management from the Government to farmers and to increase participatory management. Under this approach, the O&M costs of irrigation schemes are shared between the Government and beneficiary communities. However, implementation of this policy varies widely between provinces, districts, and schemes. To date, this policy has produced mixed results.

8. Both ADB and AFD have had considerable involvement in the sector. Since 1999, ADB's assistance has included two loans cofinanced with AFD for irrigation development^{6,7} and one loan for rehabilitation of irrigation and flood-control infrastructure.⁸ ADB has also facilitated in developing the legal and policy framework for the water resource and irrigation sector.⁹ The Northwest Irrigation Sector Project (NWISP, footnote 7) continues to assist in developing policy and the strategic framework, promoting inter-agency cooperation, IWRM approach in river basins, and regulatory framework for irrigation management transfer.

9. Since 1996, the Government has been implementing a program of decentralization and deconcentration that promotes increased local-government and community involvement in natural resources planning and management. In 2003, CNMC began encouraging local

⁵ Ministry of Water Resources and Meteorology. 2006. Strategic Development Plan 2006–2010 (Draft).

⁶ ADB. 2000. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Kingdom of Cambodia for the Stung Chinit Irrigation and Rural Infrastructure Project (Summary Procedure)*. Manila (Loan 1753-CAM).

⁷ ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Kingdom of Cambodia for the Northwest Irrigation Sector Project (Summary Procedure)*. Manila (Loan 2035-CAM).

⁸ ADB. 2000. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Proposal to Use Loan Savings for the Emergency Flood Rehabilitation Project*. Manila (Loan 1824-CAM).

⁹ ADB. 1999. *Technical Assistance to the Kingdom of Cambodia for Capacity Building in the Ministry of Water Resources and Meteorology*. Manila (TA 3292-CAM); and ADB. 2001. *Technical Assistance to the Kingdom of Cambodia for Preparing the Northwest Irrigation Sector Project*. Manila (TA 3758-CAM).

governments and communities to adopt river-basin-management principles consistent with the basin planning process of the Mekong River Commission. Two TA projects (footnotes 1 and 2) were implemented against this backdrop in 2004 and 2005, and an agreement was reached on the model for the Tonle Sap Basin Management Organization (TSBMO). This activity complements the loan, grant, and TA projects under the ADB-assisted Tonle Sap Initiative.¹⁰

III. THE TECHNICAL ASSISTANCE

10. The PPTA will assist the Government to prepare an investment project to increase irrigation productivity and area and to implement irrigation management transfer (IMT) to meet its NSDP goals. It will also assist MOWRAM to successfully implement the non-investment aspects of its SDP. Similarly, the PPTA will support the establishment of TSBMO and the process of IWRM, following the recommendations of the TA project Establishment of the TSBMO II (footnote 2) under the Tonle Sap Initiative.

A. Impact and Outcome

11. The project is designed to support the Government's NSDP target of reducing poverty in selected rural areas through enhanced agricultural production and diversification. In line with the National Water Resources Policy and MOWRAM's SDP, the PPTA will strengthen the Government's capacity to manage water resources in a sustainable, participatory, and transparent way, focusing on improving irrigation facilities and river subbasin management within the Tonle Sap basin.¹¹

B. Methodology and Key Activities

12. The PPTA will have three components: (i) part A, investment project preparation; (ii) part B, capacity strengthening for MOWRAM; and (iii) part C, establishment of TSBMO (Phase III).

13. Part A: investment project preparation will focus on preparing an investment project, suitable for possible ADB and AFD cofinancing, that aims to increase incomes in rural areas through irrigated agriculture, and builds on the experience of the ongoing NWISP. Based on a detailed study of representative core subprojects, the PPTA will prepare a 6-year program of small and medium-scale irrigation systems covering a target area of about 20,000 ha.¹² ADB's country strategy and program (CSP) has programmed a loan of \$20 million for approval in 2008, and AFD is considering cofinancing the project with a grant of €8 million (\$10.2 million equivalent).

14. The investment project will emphasize a participatory, process-oriented, and integrated approach to irrigation and water resources development, focusing on the agricultural context. The aim will be to establish sustainable farmer water user groups and communities (FWUGs, FWUCs) and to strengthen MOWRAM's capacity to operate and maintain larger system facilities. Project implementation will be managed through MOWRAM's provincial offices and closely linked to agricultural support services to be provided by the provincial and district extension staff of the Ministry of Agriculture, Forestry and Fisheries (MAFF). The investment project will provide capacity building for MOWRAM and MAFF staff at provincial and district levels. Agricultural extension activities, as well as establishment of FWUCs, will begin well before the design and construction of civil works, and continue after the construction has been

¹⁰ The Tonle Sap Initiative is 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.

¹¹ The proposed investment project may also include minor activities to monitor or support components of ongoing projects funded by ADB or AFD outside the Tonle Sap basin.

¹² Including full control irrigation and flood spreading and/or recession agriculture.

completed. Experience indicates that early participation by water users in scheme development and management improves the chances of successful IMT, and long-term support of agricultural extension activities is essential to promote sustainable project outcomes.

15. Two river subbasins and four core subprojects will be identified and subproject feasibility studies undertaken. As with the NWISP, the activities will include (i) subbasin identification and selection; (ii) a participatory approach to prepare long lists of potential subprojects involving the provincial rural development committee prioritization process, the views of beneficiaries, and the views of other ministries such as MAFF; (iii) development of social, economic, technical, and institutional selection criteria, similar to NWISP, to identify core subprojects and the mix of small- and medium-scale activities; (iv) feasibility studies of at least four core subprojects involving engineering and agricultural data collection, feasibility design, and economic and environmental analysis; (v) and the design of a sector investment project incorporating the selection principles and strategies developed in the PPTA and promoting project readiness.

16. Part B: capacity strengthening for MOWRAM will strengthen MOWRAM's capacity to implement its SDP and its commitments under the MTSAW, and to execute its statutory responsibilities, building on initiatives begun under NWISP. This part of the PPTA will involve (i) improving the planning of investments in water resources to maximize their contribution to the Government's social and environmental goals, and (ii) providing specific assistance to MOWRAM in the areas of (a) water resources information management; (b) benefit monitoring and evaluation; (c) strategic and annual planning; and (d) financial and budget management (including O&M financing) to achieve selected SDP goals, objectives, and activities.

17. Part C: establishment of TSBMO (phase III) will establish a Tonle Sap basin coordinating committee (TSBCC) within the Cambodian National Mekong Committee (CNMC)¹³ following the recommendations of the TA for TSBMO Phase II (footnote 2),¹⁴ to (i) provide coordinated water sector and related resources planning, (ii) facilitate stakeholder and community participation, and (iii) provide information on water sector and related resources. This TA will review, revise, recommend, and establish the structure, membership, and operating protocol for the TSBCC secretariat. Subbasin committees, provincial water sector and related resources committees, and district taskforces will be established in Battambang, Kompong Chhnang and Pursat provinces to provide the necessary links to decentralized and deconcentrated administrative levels. Formal training and on-the-job experience on institution development, information gathering, strategic planning, inter-province coordination, and valuation analysis will establish a water sector and related resources planning, management, and development process. A follow-up TA will advance the road map set out under TSBMO phase I (footnote 1), with emphasis on the development of basin and subbasin plans.

C. Cost and Financing

18. The TA is estimated to cost \$1,560,000 equivalent. ADB will provide \$1,000,000 equivalent on a grant basis from its TA funding program. The Government of France will provide \$300,000 equivalent.¹⁵ The Government of Cambodia will finance \$260,000 equivalent through the provision of counterpart staff and per diem payments, office space in Phnom Penh and Battambang, data, administration and clerical services, and communications. The cost estimates and financing plan are presented in Appendix 3. The Government has been informed that approval of the PPTA does not commit ADB or AFD to finance any ensuing project.

¹³ CNMC has a membership of 10 ministries and a link to the Mekong River Commission. Together with MOWRAM, it is responsible for promoting basin planning and management. The Minister of Water Resources and Meteorology is currently the chairperson of CNMC.

¹⁴ See the final report of November 2005 and its working papers of July 2005.

¹⁵ The Government of France funds, blended with ADB's funds, will be used to finance parts A and B of the TA.

D. Implementation Arrangements

19. The TA will be undertaken over 18 months. Part A will run from January to December 2007, and parts B and C will run from November 2006 to April 2008. MOWRAM, through its Project Management Office, will be the Executing Agency, and it will be the Implementing Agency for parts A and B. CNMC will be the Implementing Agency for part C. The national Project Steering Committee (PSC) for water resources development¹⁶ will provide overall guidance to the TA. The Project Management Office will assign a TA director and a full-time project manager for part A when the TA Agreement is signed. At least one full-time counterpart staff from MOWRAM will be assigned to work with each consultant under part B for the duration of their inputs. MOWRAM will provide suitable office space (including telephone and Internet connections) for the consultant team and counterparts in Battambang, Kompong Chhnang, and Pursat for parts A and C, and in Phnom Penh for part B. CNMC will provide suitable office space in Phnom Penh for part C.

20. An international consulting firm in association with national consultants will be engaged under part A using a simplified technical proposal under quality- and cost-based selection procedures to provide 19 person-months international and 24 person-months national consulting services with expertise in water resources management, sociology, irrigation organizations, poverty reduction, agricultural/natural resources economics, irrigation, agriculture, resettlement, environment, monitoring and evaluation, irrigation management transfer and geographical information systems. Part B requires 12 person-months of international and 12 person-months of national individually recruited consulting services with expertise in water resource policy and planning, benefit monitoring and evaluation, financial and institutional management and data management. Part C requires 5 person-months of international and 16 person-months of national individually recruited consulting services with expertise in river basin management, water resources management, and institutional development. ADB will recruit the consultants in accordance with its *Guidelines on the Use of Consultants*. Workshops will be organized at key stages of the TA project to promote awareness and encourage stakeholder participation. Equipment, training, workshops and surveys will be procured or organized by ADB or by the consultants in accordance with ADB's *Procurement Guidelines*. Outline terms of reference are given in Appendix 4.

21. As also described in Appendix 4, part A consultants will submit (i) an inception report, (ii) two progress reports, (iii) a draft final report, and (v) a final TA report. Tripartite meetings will be held after the submission of the first and second progress reports and the draft final report, and ADB and AFD will jointly review the progress of the PPTA during its implementation. Part A consultants will be required to assist on a loan fact-finding mission. Parts B and C consultants will prepare inception reports, progress reports, and working papers.

IV. THE PRESIDENT'S DECISION

22. The President, acting under the authority delegated by the Board, has approved (i) ADB administering a portion of technical assistance not exceeding the equivalent of \$300,000 to be financed on a grant basis by the Government of France, and (ii) ADB providing the balance not exceeding the equivalent of \$1,000,000 on a grant basis, to the Government of Cambodia for preparing the Water Resources Management (Sector) Project, and hereby reports this action to the Board.

¹⁶ The Project Steering Committee (PSC) was established for Stung Chinit, NWISP, and Prey Nup projects (established under Prakas 335-MEF 3/05/2002 and Decision 6939 MEF on 30/12/2002).

DESIGN AND MONITORING FRAMEWORK

Table A1.1: Parts A and B

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Reduced poverty in selected rural areas through enhanced agricultural production and diversification</p>	<ul style="list-style-type: none"> • The proportion of the population below the national poverty line is halved (from 39% in 1993 to 19.5% in 2015) • Average real growth rate in the agriculture sector increases to 3.5% per year during 2006–2010 	<ul style="list-style-type: none"> • Central and provincial government statistics • ADB's country partnership strategies and operational business plans 	<p>Assumption</p> <ul style="list-style-type: none"> • The Government develops a medium-term strategy for agriculture and water management, and it adopts and implements an overall strategy and policy framework.
<p>Outcome Strengthened capacity of the Government to manage its water resources in a sustainable, participatory, and transparent way, focusing on improving irrigation management in the Tonle Sap basin</p>	<ul style="list-style-type: none"> • Implementation of MOWRAM's Strategic Development Plan (2006–2010) • Increased food security, targeting improvements in rice productivity by at least 30% per ha • Introduction of diversified agricultural production • Promotion of PIMD/IMT in target irrigation schemes 	<ul style="list-style-type: none"> • TA completion report • TA reports and review missions • TA tripartite meetings 	<p>Assumptions</p> <ul style="list-style-type: none"> • The Law on Water Resources Management is enacted. • Agreement is reached on developing regulations that support the Law on Water Resources Management. • Key Government ministries, including MAFF, MEF, and MOWRAM, continue to work together. <p>Risk</p> <ul style="list-style-type: none"> • The process of decentralization and deconcentration stalls.
<p>Outputs 1. Feasibility study for an investment project that would rehabilitate small- to medium-scale irrigation infrastructure, develop FWUCs through PIMD/IMT, and improve agricultural extension services in selected provinces of the Tonle Sap basin (part A) 2. Government implementation of key institutional elements of MOWRAM's Strategic Development Plan for 2006–2010 (part B)</p>	<ul style="list-style-type: none"> • 20,000 ha of improved agricultural production (including full control irrigation and flood spreading and/or recession agriculture) in small- to medium-scale irrigation schemes • Review and dissemination of information on water resources policy and legal framework • Improved water resources information management • Strengthened capacity of MOWRAM in the areas of budgeting, administration, and O&M 	<ul style="list-style-type: none"> • TA final report • TA reports and review missions • TA tripartite meetings • Meeting and workshop findings and recommendations • TA working papers 	<p>Assumptions</p> <ul style="list-style-type: none"> • The Government provides effective project guidance at the policy level. • A national project director is appointed and provides day-to-day supervision. • Senior officials of line agencies are available for policy and strategy decisions. • Staff of line agencies at national and provincial levels provide support. • Effective collaboration with ongoing projects is achieved. • MOWRAM provides project offices and other agreed inputs. • Counterpart staff are assigned and available.

<p>Activities with Milestones (for details of activities and their milestones, see the indicative staffing schedule and the terms of reference)</p> <p>Part A:</p> <ol style="list-style-type: none"> 1.1 Review implementation of NWISP and other relevant projects. 1.2 Identify priority basins and subprojects. 1.3 Select potential core subprojects. 1.4 Undertake feasibility study of core subprojects. 1.5 Prepare overall proposed investment project. <p>Part B:</p> <ol style="list-style-type: none"> 2.1 Strengthen MOWRAM's capacity to implement water-related legislation 2.2 Build capacity in budgeting, administration, and O&M. 2.3 Identify and assess lessons learned. 	<table> <tr> <td>Inputs</td> <td style="text-align: right;">\$'000</td> </tr> <tr> <td>ADB/AFD</td> <td></td> </tr> <tr> <td>• Consultants</td> <td style="text-align: right;">853</td> </tr> <tr> <td>• Equipment</td> <td style="text-align: right;">13</td> </tr> <tr> <td>• Training/workshops</td> <td style="text-align: right;">20</td> </tr> <tr> <td>• Studies/surveys/ fieldwork</td> <td style="text-align: right;">30</td> </tr> <tr> <td>• Others/contingency</td> <td style="text-align: right;">84</td> </tr> <tr> <td>Government</td> <td style="text-align: right;">200</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">1,200</td> </tr> </table>	Inputs	\$'000	ADB/AFD		• Consultants	853	• Equipment	13	• Training/workshops	20	• Studies/surveys/ fieldwork	30	• Others/contingency	84	Government	200	Total	1,200
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Total	1,200																		

ADB = Asian Development Bank, AFD = Agence Française de Développement, FWUC = farmer water user community, IMT = irrigation management transfer, MAFF = Ministry of Agriculture, Forestry and Fisheries, MEF = Ministry of Economy and Finance, MOWRAM = Ministry of Water Resources and Meteorology, O&M = operation and maintenance, PIMD = participatory irrigation management and development, TA = technical assistance.

Table A1.2: Part C

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Sound management of natural resources and the environment in the Tonle Sap basin by line agencies in partnership with civil society</p>	<ul style="list-style-type: none"> • Effective policy, institutional, organizational, and management systems for the Tonle Sap basin • Collective decision making by line agencies and civil society • Improved trends in poverty and environmental indicators 	<ul style="list-style-type: none"> • Central and provincial government statistics • Research program publications • ADB's country partnership strategies and operational business plans 	<p>Assumptions</p> <ul style="list-style-type: none"> • Support for decentralization and deconcentration strengthens. • Regulatory and management framework for water sector and related resources improves. • Line agencies are willing and able to cooperate in the management of water sector and related resources. • Management capacity exists, particularly at sub-provincial levels. • Sustainable funding for management of water sector and related resources can be arranged.
<p>Outcome Advanced establishment of the Tonle Sap Basin Management Organization and its subnational structures, mainly in Pursat province</p>	<ul style="list-style-type: none"> • The TSBCC and its secretariat, subbasin committees, provincial water sector and related resources committees and their secretariats, and district taskforces are established and functioning by the end of month 5. • Capacity to establish a planning, management, and development process is built by month 11. • The roadmap set out by the TA project Establishment of the Tonle Sap Basin Management Organization (footnote 1 in the main text) is advanced by month 12. 	<ul style="list-style-type: none"> • TA completion report • TA completion questionnaire • TA reports and review missions • Tripartite meetings • Meeting and workshop findings and recommendations 	<p>Assumptions</p> <ul style="list-style-type: none"> • The Organic Law on Deconcentration is enacted. • The Law on Water Resources Management is enacted. • Agreement is reached on developing regulations that support the Law on Water Resources Management. • Agreement is reached on draft sub-decree on the creation, arrangements, and operation of the Tonle Sap Basin Management Organization. <p>Risk</p> <ul style="list-style-type: none"> • The process of decentralization and deconcentration stalls.
<p>Outputs 1. The TSBCC and its secretariat is established and functioning. 2. The subbasin committees, provincial water sector and related resources committees, their secretariats, and district taskforces are established and functioning.</p>	<ul style="list-style-type: none"> • Project offices are opened by month 2. • Four meetings of the TSBCC are held by month 7. • All committees, secretariats, and taskforces are set up by month 5. • Guidelines for integrated water resources 	<ul style="list-style-type: none"> • TA reports and review missions • Tripartite meetings • Meeting and workshop findings and recommendations • TSBCC meetings • Pursat Provincial Water Sector and Related Resources Management Committee meetings 	<p>Assumptions</p> <ul style="list-style-type: none"> • Senior officials of line agencies are available for policy and strategy decisions. • Staff of line agencies at national and provincial levels offer support. • Water and natural resource user groups collaborate in studies, surveys, and fieldwork.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>3. Capacity to establish a water sector and related resources planning, management, and development process is built.</p> <p>4. The outline of a follow-up TA to advance the establishment of improved institutional and organization arrangements for water sector and related resources in the Tonle Sap basin is designed.</p>	<p>management are prepared by month 3.</p> <ul style="list-style-type: none"> • Pilot studies, surveys, and fieldwork and activities are implemented from month 3. • A follow-up TA is outlined by month 12. 	<ul style="list-style-type: none"> • District taskforce meetings 	<ul style="list-style-type: none"> • Effective collaborative arrangements are struck with: <ul style="list-style-type: none"> - Northwest Irrigation Sector Project - D&D-NREM program - Partnership for local governance • CNMC and MOWRAM provide the project offices and other agreed inputs. • Counterpart staff are available.
<p>Activities with Milestones (for details of activities and their milestones, see the indicative staffing schedule and the terms of reference)</p> <p>1.1 Establish a TSBC in CNMC to (i) provide coordinated water sector and related resources planning, (ii) facilitate stakeholder and community participation, and (iii) provide information on water sector and related resources.</p> <p>1.2 Review, revise, recommend, and establish the structure, membership, and operating protocol for the TSBC secretariat.</p> <p>2.1 In Battambang, Kompong Chhnang, and Pursat provinces, review, revise, recommend, and establish the memberships of the subbasin committees and provincial water sector and related resources committees.</p> <p>2.2 Review, revise, recommend, and establish the structure, membership, and operating protocols of the subcommittee secretariats, the provincial water sector and related resources committee secretariats, and the district taskforces.</p> <p>3.1 Pilot the operating outputs needed to support the establishment and functioning of the planning, management, and development process.</p> <p>4.1 Advance the roadmap set out by Establishment of the Tonle Sap Basin Management Organization (footnote 1 in the main text), with emphasis on the development of basin and subbasin plans.</p>			<p>Inputs \$'000</p> <p>ADB</p> <ul style="list-style-type: none"> • Consultants 152 • Equipment 6 • Trainings/workshops 30 • Studies/surveys/fieldwork 77 • Others/contingency 35 <p>Government 60</p> <p>Total 360</p>

ADB = Asian Development Bank, D&D-NREM = multi-donor supported program for decentralization and deconcentration of natural resources and environmental management, CNMC = Cambodia National Mekong Committee, MOWRAM = Ministry of Water Resources and Meteorology, TA = technical assistance, TSBC = Tonle Sap basin coordination committee.

INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Contribution of the sector or subsector to reduce poverty in Cambodia: Cambodia based its National Poverty Reduction Strategy (NPRS) 2003–2005 on the Socioeconomic Development Plan 2001–2005 (SEDP II). The NPRS provides a comprehensive set of monitoring indicators towards achieving the Millennium Development Goals (MDGs) that have been integrated into a number of national and sector strategies. The Poverty Reduction Partnership Agreement (PRPA) was signed in July 2002. To overcome barriers to poverty reduction in line with SEDP II, NPRS and the Rectangular Strategy, the Asian Development Bank (ADB) has focused its country strategy and program (CSP) (2004) on (i) fostering broad-based economic growth, (ii) improving livelihoods and reducing vulnerability, and (iii) improving governance at all levels. In particular, the CSP is targeting a broad-based and inclusive development process to include increasing agriculture productivity and diversification, and targeting poverty interventions in a limited geographic area (the Tonle Sap basin) to maximize the number of beneficiaries and thereby improve the development impact of ADB's assistance.</p>			

B. Poverty Analysis

Targeting Classification: General intervention

<p>What type of poverty analysis is needed? Initial poverty and social assessment will be conducted during the project PPTA). Basic poverty and social analysis is proposed. The PPTA will look at the incidence of poverty using existing data sources and supplementing it through the social survey of potential beneficiaries. The analysis will be carried out following ADB's <i>Handbook on Poverty and Social Analysis</i>^a and <i>Handbook for Integrating Poverty Impact on Economic Analysis of Projects</i>.^b Particular attention is to be given to profiling the beneficiaries, including gender disaggregated demographic, economic, and social data where possible, plus the incidence of poverty, vulnerable groups, and any adverse impacts anticipated from the project.</p>

C. Participation Process

<p>Is there a stakeholder analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Extensive stakeholder analysis will be carried out during project preparation. This will include a series of workshops targeted at various stakeholders including beneficiaries aimed at confirming PPTA findings.</p>
<p>Is there a participation strategy? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No In addition to their active participation in the diagnosis of performance and rehabilitation of irrigation schemes, the beneficiaries, through the farmer water user groups and communities (FWUGs/FWUCs), will participate in the operation and maintenance and management of irrigation schemes when irrigation management is transferred to FWUGs/FWUCs after rehabilitation. The transfer will follow the Government's participatory irrigation management and development (PIMD) policy of increasing water user participation in managing irrigation schemes.</p>

D. Gender Development

<p>Strategy to maximize impacts on women: The gender and development strategy will include steps to (i) enhance women's access to information, (ii) participate in irrigation management institutions, and (iii) increase their ability to protect their interests and improve their livelihoods. Through gender sensitization training and gender-disaggregated data, awareness of gender and development issues will be created among the Executing Agency staff as well as the FWUCs.</p>
<p>Has an output been prepared? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The project envisages interventions for the rehabilitation and improvement of existing irrigation infrastructure. Land acquisition is expected to be minimal and impact will be assessed during the TA. If needed, a short resettlement plan will be prepared for core subprojects and a resettlement framework will be prepared for the rest of the subprojects.	<input type="checkbox"/> Full <input checked="" type="checkbox"/> Short <input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	Irrigation management transfer (IMT) will result in the FWUCs having increased roles in the operation and maintenance (O&M) of the schemes after rehabilitation. The overall cost of irrigation operations to the Government will be reduced. The costs to individual farmers may be increased, but they will be offset by a greater incentive to pay irrigation service fees due to improved irrigation water deliveries and scheme performance.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Labor	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	FWUCs will be involved in rehabilitation of irrigation schemes as their counterpart contribution to project funding. Following rehabilitation and IMT, farmers will continue to contribute labor for regular O&M.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Indigenous Peoples	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	The project is not expected to affect groups with special vulnerabilities that would require preparation of a separate indigenous people's development plan (IPDP). If indigenous peoples are identified who may be significantly affected by project implementation, then IPDPs will be prepared in accordance with ADB's <i>Policy on Indigenous Peoples</i> , and implementation of project activities at such sites would be conditional on the ADB's approval of the relevant IPDPs. An indigenous people's planning framework will be prepared should this be required for specific subprojects.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Other Risks and/or Vulnerabilities	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None	A plan may be required to assist farmers to gradually assume responsibility for O&M during the period of IMT. The PPTA will evaluate potential O&M problems during the transition phase. Agricultural extension activities, as well as establishment of FWUCs, will begin well before the design and construction of civil works, and continue after the construction is complete.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

^a ADB. 2001. *Handbook on Poverty and Social Analysis*. Manila.

^b ADB. 2001. *Handbook for Integrating Poverty Impact on Economic Analysis of Projects*. Manila.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Total Cost
A. Asian Development Bank (ADB) Financing^a	
1. Consultants ^b	
a. Remuneration and Per Diem	
i. International Consultants	744.00
ii. National Consultants	140.00
b. International and Local Travel	91.00
c. Reports and Communications	30.00
2. Equipment ^c	19.00
3. Training, Seminars, and Conferences ^d	50.00
4. Surveys ^e	107.00
5. Miscellaneous Administration and Support Costs ^f	37.00
6. Representative for Contract Negotiations ^g	3.00
7. Contingencies ^h	79.00
Subtotal (A)	1,300.00
B. Government Financingⁱ	
1. Office Accommodation and Transport	71.00
2. Remuneration and Per Diem of Counterpart Staff	80.00
3. Others (Data and Publications)	91.00
4. Contingencies	18.00
Subtotal (B)	260.00
Total	1,560.00

^a Financed by ADB's technical assistance funding program (\$1,000,000) and the Government of France (\$300,000). Funding from the Government of France will be administered by ADB. The Government of France funds, blended with ADB's funds, will be used to finance Parts A and B of the TA.

^b Comprising \$525,000 for part A, \$328,000 for part B, and \$152,000 for part C.

^c Includes provision for office equipment, comprising \$13,000 for part A and \$6,000 for part C.

^d Comprising \$20,000 for part A and \$30,000 for part C for training, seminars, and conferences, to support costs of participants.

^e Comprising \$30,000 for part A and \$77,000 for part C.

^f Comprising \$16,000 for part A, \$6,000 for part B, and \$15,000 for part C.

^g For part A.

^h Comprising \$40,000 for part A, \$19,000 for part B, and \$20,000 for part C.

ⁱ In kind.

Source: ADB estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Part A: Investment Project Preparation

1. The purpose of part A of the project preparatory technical assistance (PTTA) will be to prepare a feasibility study for a proposed investment project to (i) rehabilitate small- and medium-scale irrigation infrastructure, (ii) transfer facilities to farmer water user committees (FWUCs) through participatory irrigation management and development (PIMD), and (iii) improve agricultural extension services in selected provinces of the Tonle Sap basin. Part A provides for 19 person-months of international and 24 person-months of national consulting services. International consultants will have expertise in water resources management (team leader, 9 person-months), sociology and/or irrigation organizations (3 person-months), poverty reduction and/or resettlement (2 person-months) and agricultural and/or natural resource economics (5 person-months). National expertise will be sought in irrigation engineering (deputy team leader, 8 person-months), agriculture (3 person-months), social studies (3 person-months), geographical information/data management (2 person-months), environment (3 person-months), monitoring and evaluation (2 person-months), and irrigation management transfer (3 person-months). The study will be undertaken in 3 phases:

1. Phase 1: Project Scoping

2. **Background Information Assessment.** The consultants will review current government policy, strategies, projects, and donor/internationally financed programs in the water resources and agriculture sector in Cambodia. Specific tasks include (i) review of the current status and future potential of irrigated agriculture in Cambodia and (ii) review of information and implementation experience arising from the ongoing and recently completed TA and loan projects of the Asian Development Bank (ADB) and Agence Française de Développement (AFD).

3. **Basin Identification and Evaluation.** The consultants will work closely with the Ministry of Water Resources and Meteorology (MOWRAM) at the national and provincial levels to identify priority river basins within the Tonle Sap basin that could benefit from small and medium-sized water resource development under the project. Specific tasks include (i) identification of at least four river basins for initial consideration; (ii) examination of the natural resources, hydrology, and climates of the major river basins; (iii) identification of riparian water rights issues arising from current activities and new developments or inter-basin transfers, particularly for dry season flows; (iv) identification of issues of watershed degradation that might impact on selected developments; (v) review of other activities in the area to ensure scope for ADB and AFD investment is adequate; (vi) carrying out of field reconnaissance to determine the plans and priorities of local authorities and to assess the overall potential for irrigation development; and (vii) listing of potential subprojects for each basin based on past and ongoing irrigation and water resources studies, consultations with MOWRAM, provincial line agencies, provincial and district rural development committees, national and local nongovernment organizations (NGOs), and interviews with village chiefs and farmers.

4. **Identification of Potential and Core Subprojects.** The consultants will (i) review and assess existing subproject identification guidelines and criteria, including those already established under the Northwest Irrigation Sector Project (NWISP), part A of this TA (based on lessons learned), and the Cambodia Australia Agricultural Extension Project (CAAEP), for use under the project; (ii) recommend any improvements or modifications; and (iii) identify four potential core subprojects within two subbasins for feasibility studies. The subprojects will be presented for consideration by ADB/AFD and MOWRAM at the first tripartite meeting. The core subprojects

should vary in size, technical requirements, and target production, thereby providing a representative sample of future subprojects.

2. Phase 2: Feasibility Study of Core Subprojects

5. The consultants will conduct full feasibility studies for each of the core subprojects including technical, social, environmental, and economic analyses, as described below.

6. **Data Collection and Analysis (Technical).** The consultants will (i) determine the scope of technical data needed for the feasibility studies and arrange the necessary collection and analyses; (ii) using farmer surveys and the commune databases of the Seila program, prepare representative “with/without project” farm models and budgets with associated estimates of the financial internal rate of return (FIRR); (iii) summarize data on climate and prepare a monthly (and if possible 10-day) water balance for potential project areas; (iv) assess irrigation water requirements and timing; (v) assess the existing and required incremental agricultural technical support, the sources of support, and institutional strengthening requirements; (vi) review and assess all available hydrologic data on surface-water and groundwater resources in the priority basins, and determine its suitability for design purposes; and (vii) review survey data and topographical mapping available for each subproject, and, if necessary, undertake topographic surveys to prepare base maps at an appropriate scale for irrigation design.

7. **Preliminary Subproject Design.** For each core subproject the consultants will (i) in consultation with farmers and extension agents, and taking into consideration the background agriculture assessment, propose suitable and practical irrigation cropping patterns that may be adopted, based on a detailed agronomic assessment including soils, climate, and other relevant parameters; (ii) fully assess the opportunities and constraints to achieve the proposed cropping patterns, including but not limited to: the availability of agricultural inputs, credit, labor and extension services; understanding and acceptability of the production technology by the farmers; and post-harvest and marketing aspects; (iii) assess the crop water requirements, irrigation flows required and timing for the proposed cropping patterns; (iv) assess irrigation water requirements in relation to the hydrological characteristics of the water sources, including considerations of pumped and/or gravity irrigation, drainage, flood recession and groundwater; (v) assess the condition and functionality of existing full water control irrigation and/or flood recession infrastructure, and its suitability for improvement or development; (vi) develop a land use/land ownership plan of the core subproject to provide a basis for community engagement, establishment of FWUCs, and development of resettlement plans, if required; and (vii) prepare feasibility designs of new/rehabilitated irrigation infrastructure to support the proposed cropping patterns, including the preparation of feasibility level engineering drawings, cost estimates, and implementation schedules.

8. **Social Analysis and Data Collection.** For the priority basins and subproject areas the consultants will (i) collect and review existing socioeconomic data and studies, including the World Food Program’s Vulnerability Assessment Mapping, the Seila datasets of the United Nations Development Programme (UNDP), and official provincial, district, commune, and village data sources; (ii) in accordance with ADB’s gender checklist, and in consultation with the Ministry of Women and Veterans’ Affairs, suggest subproject-specific interventions to address gender imbalances and interventions to support other vulnerable groups; (iii) prepare a social assessment report for each core subproject to include socioeconomic profiles of beneficiaries (including land tenure and ownership); (iv) prepare a socioeconomic baseline report for the core subproject communities; (v) prepare a benefit monitoring and evaluation plan for subsequent subprojects implemented under the project; and (vi) design or adopt existing social assessment guidelines for

subsequent subprojects, which include data collection methodologies for rapid rural assessment, community consultation, surveys, steps for water user group formation and management, strategy for women's participation, and other relevant areas as necessary. The consultants should assess the possible use of NGOs and identify possible organizations to assist in data collection, consultation, surveys, and water user group formation.

9. Irrigation System Sustainability, and Agricultural and Other Support Services. For each core subproject, based on consultations with beneficiary communities, the consultants will (i) evaluate the readiness of the community to participate in the process of PIMD, (ii) estimate the resources required to organize FWUCs and achieve irrigation management transfer (IMT), (iii) assess the capacity of provincial MOWRAM staff to support FWUCs, and (iv) prepare a training program for staff and FWUCs. They will also (i) review the availability and capacity of existing agricultural support services, (ii) determine the need for enhanced extension services to develop and support the proposed cropping systems, (iii) prepare a program of assistance, and (iv) identify the costs and institutional implications of providing additional support, both during the proposed investment project period, and following completion. Finally, they will identify the costs and services required to support sustainable operation and maintenance (O&M) of the completed irrigation systems before and after IMT, for both the farmers and MOWRAM.

10. Economic Analysis. The consultants will (i) conduct economic and financial analyses of each core subproject and for the overall investment project, according to ADB's *Guidelines for Economic Analysis of Projects*;¹ (ii) prepare a narrative description of the analysis, including quantification and description of benefits, methodologies, and key assumptions; (iii) prepare fully documented Excel spreadsheets supporting the economic analysis; (iv) prepare a draft financing plan according to ADB standards, including ADB, Government, and beneficiary contributions; (v) conduct a poverty impact assessment of core subprojects and prepare a distributional analysis according to ADB guidelines; (vi) based on field trips and sensitivity analyses, describe major project risks, potential impact on project feasibility, and safeguards to be incorporated in project design; (vii) prepare economically sound subproject selection criteria for subsequent subprojects to be used during project implementation; and (viii) assess training requirements to conduct these analyses.

11. Environmental Analysis. In cooperation with the Ministry of Environment (MOE), the consultants will verify that subprojects conform with the Government's environmental regulations, guidelines, and standards related to irrigation development and natural resources management. For each of the core subprojects they will prepare initial environmental examinations (IEEs, or environmental impact assessment [EIAs] if category A subprojects) and a composite initial environmental examinations (SIEE, and summary environmental impact assessment [SIEA] if any category A subprojects) covering all four subproject IEEs, as well as an environmental assessment and review procedure (EARP), in accordance with ADB guidelines. They will assess training requirements for provincial and district staff for integrated pest management, watershed protection, and nutrient management, and they will provide guidance on the appropriate institutional links between MOWRAM and MOE for environmental screening, assessment, and monitoring in future irrigation sector programs.

12. Compensation and Resettlement Analysis. Using rapid rural appraisal, community consultations, and socioeconomic surveys for core subprojects, the consultants will (i) identify the status and key issues of land use; (ii) assess land ownership and riparian rights in the core subproject areas, and scope for temporary and permanent voluntary contributions of land and other assets for canal alignments, structures, and other construction activities; (iii) analyze potential

¹ Using COSTAB software. COSTAB files must include investment costs, recurrent costs, duties, and taxes.

voluntary contributions by verifying intent, economic impact on financing agencies within the community, and assessment of community-devised mitigation measures and ensuring safeguards for voluntary donations are in accordance with ADB's *Involuntary Resettlement Policy* (IR) and OMF2 on involuntary resettlement; (iv) assess the need and scope for involuntary land acquisition and resettlement, based on preliminary technical designs of core subprojects and results of community consultations; (v) where land donation is not feasible, prepare a resettlement and land acquisition plan in accordance with ADB's IR policy and OMF2; (vi) prepare and supervise a census of affected persons in core subprojects to be incorporated in the resettlement plan; (vii) prepare project-wide resettlement framework for involuntary land acquisition/resettlement and land donation to be followed in future subprojects; and (viii) prepare a plan for land titling in the core and subsequent subprojects, including cost estimates and implementation arrangements.

3. Phase 3: Investment Project Preparation

13. On the basis of the core subproject feasibility studies, the consultants will prepare a proposed sector investment project in accordance with ADB's and AFD's project preparation and social and environmental safeguard requirements. The consultants will undertake, among other things, the following specific activities: (i) describe the rationale for the project, identifying performance indicators and analysis, and reviewing key problems and opportunities; (ii) highlight recent sector experience and lessons learned; (iii) identify and describe the project components, including capacity-building needs within MOWRAM and other agencies, if necessary; (iv) prepare cost estimates and a financing plan for the proposed project; (v) undertake economic, financial, social, and environmental analysis in accordance with ADB and AFD guidelines, and provide an assessment of project risks and mitigation strategies; (vi) propose implementation arrangements that reflect appropriate links at central and local level with other ministries and stakeholder participating in the project; (vii) identify contract packages and procurement methods, and prepare a procurement plan and implementation schedule for major activities; (viii) identify consulting requirements, and prepare detailed terms of reference and a schedule of inputs for consulting service; (ix) prepare a project design and monitoring framework in accordance with ADB requirements incorporating appropriate arrangements and indicators for monitoring and evaluation; (x) prepare a sector assessment (based on Phase 1 sector/background review); (xi) prepare an assessment of external assistance to the sector; (xii) prepare a summary poverty reduction and social strategy, resettlement framework and summary environmental impact assessment; and (xiii) prepare an institutional analysis of MOWRAM as the proposed executing agency for the sector investment project.

4. Reporting Requirements

14. The consultants will prepare (i) an inception report within 2 weeks of mobilization outlining the study implementation and personnel schedule; (ii) a progress report after 2 months that will review the selection of target provinces and core subprojects; (iii) a second progress report after 6 months including results of the core subproject feasibility studies; (iv) a draft final report after 10 months including all design elements and supporting materials for the proposed investment project; and (v) a final TA report within 1 month of the final tripartite meeting incorporating revisions agreed upon at the meeting. Tripartite meetings will be held 2–3 weeks after the submission of the first and second progress reports and the draft final report. ADB and AFD will jointly review the progress of the TA during its implementation, and participate in joint reviews and tripartite meetings. The consultants will be required to assist a fact-finding mission, coinciding with the final tripartite meeting.

B. Part B: Water Sector Policy and Institutional Capacity Building

15. **Water-Related Legislation and Regulation** (2 water resources legal and policy specialists: 3 person-months international, 3 person-months national). Activities related to MOWRAM's Strategic Development Plan (SDP) 2006–2010 Overarching Goal 3 include the following: (i) assist MOWRAM to disseminate information and raise awareness among the Ministry's staff and water sector stakeholders on the National Water Resources Policy for the Kingdom of Cambodia (January 2004) and the draft MOWRAM SDP; (ii) assist MOWRAM to finalize the draft Law on Water Resources Management, and the related sub-decrees prepared under assistance of NWISP, based on lessons learned; (iii) in close collaboration with the Working Group on Agriculture and Water Management, assist MOWRAM to ensure consistency in policy between (a) the development of the inter-ministerial Strategy and Program Framework for Agriculture and Water Management, (b) the National Water Resources Policy, and (c) MOWRAM's SDP; (iv) assist MOWRAM to source resources and assistance to implement the SDP within the Program Framework for Agriculture and Water Management; and (v) in coordination with the financial/institutional specialist, assist MOWRAM to develop internal guidelines/regulations to prepare strategic and annual plans and budgets.

16. **Water Resources Information and Management** (2 information management specialists: 3 person-months international, 3 person-months national). Activities related to SDP Overarching Goal 4 include the following: (i) review lessons learned on data collection and management on (a) hydrological and meteorological data, (b) irrigation systems and FWUCs inventory and development status, (c) soils and agriculture development, socioeconomic surveys, and river basin studies, and (d) irrigation system O&M costs and economic benefit monitoring data; (ii) recommend way to establish a sustainable MOWRAM technical information management system, to facilitate sharing of information on the implementation of MOWRAM's SDP, for possible financing under the proposed investment project; (iii) assist MOWRAM to develop a national river basin database, a national surface-water resource database, a national groundwater database (as outlined in the SDP), an irrigation systems and FWUC database, and an irrigation system O&M cost and economic benefit monitoring database; (iv) assist MOWRAM to develop a sustainable website to improve information dissemination to the public; (v) develop an action plan to prepare extension material for dissemination to the public, including best practices and key regulations for irrigation and water resource management development; (vi) in coordination with the financial/institutional specialist and the water resources legal and policy specialist, ensure appropriate links are established with MOWRAM's management information system and budgetary planning processes; (vii) provide on-the-job training for MOWRAM staff; and (viii) prepare terms of reference for capacity building in data collection and information management, particularly for implementation under the proposed investment project.

17. **Benefit Monitoring and Evaluation** (2 benefit monitoring and evaluation specialists/economists: 3 person-months international, 3 person-months national). Activities include: (i) undertake a detailed analysis and evaluation of the performance of recently completed and ongoing development projects in the water resources sector to identify lessons learned, and assess the economic and social benefits, highlighting project sustainability, particularly in terms of operation and maintenance²; (ii) based on the evaluation of lessons learned, assist MOWRAM to prepare guidelines for project preparation and selection and guidelines for evaluating project

² This work will build on the ongoing "Review of Experiences of Irrigation Schemes Management in Cambodia" study. This study (22 irrigation schemes within 12 provinces), is conducted under the Task-Force C2 of the Technical Working Group on Agriculture and Water with the guidance of the PIMD Office of MOWRAM and with the support of ADB, AFD, the International Fund for Agricultural Development (IFAD), and the Australian Agency for International Development (AusAID).

performance, including guidelines for designing and undertaking benefit monitoring and evaluation during project implementation; (iii) establish processes to pilot test the guidelines on a trial basis, and prepare worked examples of representative projects; (iv) ensure appropriate links are established with water resources policy and legislation, benefit monitoring and technical (hydrological, agricultural) and data and budgetary planning processes; and (v) provide on-the-job training to counterpart staff within MOWRAM.

18. Administration Management and Human Resources Development (2 financial/institutional specialists: 3 person-months international, 3 person-months national). Activities related to SDP Overarching Goal 5 include the following: (i) review lessons learned on the development of MOWRAM's management information system; (ii) review progress of MOWRAM's Human Resource Development Final Report recommendations (developed under TAs 3758 and 3292) and MOWRAM's activities relating to the Council of Administrative Reform (CAR) strategy for phasing out salary supplementation practices in Cambodia; (iii) in coordination with the benefit monitoring and evaluation specialist and the information management specialist, assist MOWRAM to develop, test, and refine a process for strategic and annual planning and budgeting (in compliance with the Ministry of Economy and Finance requirements to prepare transparent budgetary allocations for MOWRAM); (iv) prepare administrative guidelines for MOWRAM staff at the national and provincial levels to prepare strategic and annual plans and budgets; (v) recommend ways to establish a sustainable management information system in MOWRAM for possible implementation under the proposed investment project; (vi) provide on-the-job training for MOWRAM staff; and (vii) prepare terms of reference for subsequent capacity-building activities in administration and budget management and human resources development for possible implementation under the investment project.

C. Part C: Establishment of the Tonle Sap Basin Management Organization (Phase III)

19. River Basin Management Specialist/Team Leader (international, 5 person-months). The team leader will be responsible for accomplishing part C of the PPTA's outputs. He or she will: (i) help CNMC to appoint members to the Tonle Sap basin coordination committee (TSBCC) and to staff the TSBCC secretariat, in consultation with the focus group established under the TA project Establishment of the Tonle Sap Basin Management Organization;³ (ii) review, revise, and recommend to the provincial governments of Pursat, Battambang, and Kompong Chhnang provinces, in consultation with the focus group, the memberships of the subbasin committees, provincial water sector and related resources committees and their supporting secretariats, and district taskforces; (iii) assist the TSBCC secretariat to arrange and hold meetings of the TSBCC, to reach early agreement on: (a) the vision, objectives, and key result areas for the Tonle Sap basin; (b) the priority and scope of the studies, surveys, and fieldwork necessary to support the establishment and functioning of the planning, management, and development process; and (c) integrated water resources management guidelines for the studies, surveys, and fieldwork; (iv) assist the TSBCC secretariat to arrange and hold a workshop to agree on: (a) coordination with collaborating ongoing projects and programs; and (b) support for the action plan for Krakor and Bakan Districts and a plan for the expansion of work to Pursat, Dauntri, and Boribo subbasins; (v) prepare terms of reference for the priority studies, surveys, and fieldwork; (vi) develop a strategy and, if appropriate, terms of reference for upgrading water and related resource information in Pursat subbasin, and for its management and dissemination; (vii) advise on other matters that may improve the management of water sector and related resources at the national and basin levels; (viii) prepare, with the help of other team members, reports that detail the key activities delivered and outputs accomplished and submit them to ADB; (ix) recommend, with the help of other team

³ ADB. 2003. *Technical Assistance to the Kingdom of Cambodia for Establishment of the Tonle Sap Basin Management Organization*. Manila (TA 4212-CAM).

members, a sustainable financing mechanism and associated financing plan for the TSBCC after examining all potential sources of income, within the long-term fiscal capability of CNMC; (x) advance the road map set out by the previous TA projects Establishment of the Tonle Sap Basin Management Organization (footnote 3) and Establishment of the Tonle Sap Basin Management Organization II⁴ and, with the help of the other team members, outline the design of a follow-up TA; and (xii) prepare the TA reports specified below and, in all cases, receive and respond to comments.

20. **Water Resources Management Specialist/Deputy Team Leader** (national, 12 person-months). The water resources management specialist will deputize and assume full responsibility for the management of the TA in the absence of the team leader. He or she will also (i) guide the provincial governments of Battambang, Kompong Chhnang, and Pursat provinces to appoint staff to the subbasin committees, provincial water sector and related resources committees and their supporting secretariats, and district taskforces in line with the designs agreed in the second of the previous TA projects (footnote 4); (ii) guide the provincial water sector and related resources management committee secretariats to arrange and hold meetings and workshops to (a) agree on provincial and district bodies for managing water sector and related resources in Pursat, Dauntri, and Boribo subbasins, and (b) make recommendations to provincial governments and to the TSBCC based on the district level water and related resource mapping and analysis; (iii) guide the district taskforces to arrange and hold district-level meetings and workshops to (a) initiate water sector and related resources mapping; (b) progress and direct work in water sector and related resources mapping; (c) develop recommendations from water resources mapping, and (d) prepare activity plans for more strategic development and management of water sector and related resources; (iv) guide the provincial water sector and related resources committee secretariats to arrange and hold meetings of subbasin committees for the Pursat, Dauntri, and Boribo subbasins; (v) facilitate the preparation of resource-base maps for district and provincial levels, which are able to (a) assist in defining the boundaries of subbasins for water resources management, (b) allow water availability and current and possible future water use to be recorded, and (c) assist in defining the location of water-related resources, such as wetlands, catchment areas, and fish spawning areas; (vi) facilitate capacity building among district taskforces for mapping the water sector and related resources and for applying integrated water resources management processes; (vii) assist the team leader to implement and develop the institutional and policy arrangements for the TSBCC agreed under the second of the previous TA projects (footnote 4); (viii) assist the team leader to advance the roadmap set out by the two previous TA projects (footnotes 3 and 4) and to outline further TA; (viii) advise on other matters that may improve the management of water sector and related resources at the basin level; and (ix) assist the team leader to meet reporting requirements.

21. **Institutions Specialist** (national, 4 person-months). The institutions specialist will assist the water resources management specialist to adapt the designs of the provincial and district-level institutional structures agreed in the second of the previous TA projects (footnote 4). He or she will do so with reference to the continuing decentralization and deconcentration reforms and the multi-donor supported program for natural resources and environmental management (D&D-NREM). Based on the agreed priority and scope of the studies, surveys, and fieldwork necessary to support the establishment and functioning of the planning, management, and development process, he or she will plan the supporting meetings and workshops to be held at national, provincial, and district levels. The team leader will prepare detailed terms of reference for the institutions specialist during the inception period and seek the approval of CNMC, MOWRAM, and ADB. The design of the TA

⁴ ADB. 2004. *Technical Assistance to the Kingdom of Cambodia for Establishment of the Tonle Sap Basin Management Organization II*. Manila (TA 4427–CAM).

has synergetic potential with ongoing projects and programs: (i) Northwest Irrigation Sector Project, and (ii) D&D-NREM program.

22. **Counterpart Staff.** CNMC and MOWRAM will assign one counterpart staff each at the national level to liaise with the TSBCC's constituent members, provide full-time support to the team leader, and facilitate day-to-day administration of the TA. MOWRAM will assign three capable staff to establish the subbasin committees, provincial water sector and related resources committees and their supporting secretariats, and district taskforces. They will provide full-time support to the water resources management specialist and facilitate day-to-day administration of the TA. They will begin their functions in Pursat province and continue with Battambang and Kompong Chhnang provinces.

23. **Reporting Requirements.** The consultants will produce (i) an inception report within 4 weeks of the commencement of the TA; (ii) a midterm report within 24 weeks; (iii) a draft final report within 48 weeks; and (iv) a final report detailing TA outcomes and future actions within 52 weeks. All reports will seek to incorporate comments by CNMC, MOWRAM, and ADB. The TA's deliverables will be disseminated through the information networks of CNMC and its constituent members, especially those of MOWRAM. ADB's information networks include the biannual Tonle Sap Initiative brochure and the Tonle Sap Initiative website. CNMC will fill out a TA completion questionnaire to evaluate key activities and outputs, identify lessons learned, and suggest follow-up action.