

ASIAN DEVELOPMENT BANK

TAR: STU 37149

TECHNICAL ASSISTANCE

FOR

**SUPPORT FOR THE MEKONG RIVER COMMISSION
FLOOD MANAGEMENT AND MITIGATION PROGRAM**

December 2003

ABBREVIATIONS

ADB	–	Asian Development Bank
BDP	–	basin development plan
CEO	–	chief executive officer
CSO	–	civil society organization
CTA	–	chief technical advisor
FMMP	–	flood management and mitigation program
GIS	–	geographic information system
GMS	–	Greater Mekong Subregion
MRC	–	Mekong River Commission
NMC	–	National Mekong Committee
PPMS	–	program performance management system
RFMMC	–	regional flood management and mitigation center
RNE	–	Royal Netherlands Embassy
TA	–	technical assistance
TOR	–	terms of reference
WUP	–	water utilization program

NOTE

In this report, "\$" refers to US dollars.

This report was prepared by a team consisting of I.B. Fox (team leader) and P.M. Smidt.

I. INTRODUCTION

1. With the assistance of the Asian Development Bank (ADB), Cambodia, Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, Viet Nam, and Yunnan Province in the People's Republic of China (PRC)—comprising the Greater Mekong Subregion (GMS)—initiated a program of subregional economic cooperation in 1992. The GMS program has contributed to the establishment of infrastructure and services to develop the subregion's shared resource base and promote the freer flow of goods and people. As one of the stakeholder organizations involved in GMS planning, the Mekong River Commission (MRC) has actively contributed to formulation of GMS strategies and programs. This cooperation resulted in the identification of improved flood management and mitigation in the lower Mekong River basin as one of 11 GMS flagship projects.

2. In 2003 MRC requested ADB to provide technical assistance (TA) to support its flood management and mitigation program (FMMP).¹ An ADB Fact-Finding Mission visited MRC's headquarters in Phnom Penh during 9–13 June 2003 to discuss with MRC the objectives, scope, costs, and implementation and financing arrangements for the TA.²

II. ISSUES

3. **The Flood Problem.** Flooding of the vast floodplains in the lower Mekong River basin is an annual event that adversely impacts economic and human activities, often claiming lives and causing extensive damage to important infrastructure, human settlements, and essential services. Nonetheless, persons living in the affected areas do not consider floods that last for as long as 6 months a year as disasters unless they are deeper than normal, unexpectedly fast in onset, or unusually prolonged. Regular floods are seen as a source of livelihood and sustenance. Their beneficial impacts include rejuvenation of wetlands as breeding grounds for aquatic plants, fish, and animals (vital sources of income and food for the poor); enrichment of soil by river-borne sediments and nutrients beneficial to agriculture; and replenishment of reservoirs and groundwater as reserves against dry season water shortages.

4. The Mekong River basin has experienced several major floods during the last 50 years. Those of 1961 and 1966 were particularly disastrous in the central part of the river basin. In 1996 and 2000, floods were exceptionally severe in the lower part of the basin. Although less damaging than the flood of 2000, the 2001 flood was at even higher levels at certain locations along the river.

5. Severe floods counteract efforts to improve economic development and reduce poverty in the lower Mekong River basin. In 2000 more than 800 people died and economic damage was assessed at more than \$400 million. In 2001 more than 300 lives were lost and damage was \$100 million. The international community assisted the affected communities by providing emergency relief and rehabilitation assistance. Following the 2000 floods, ADB provided emergency assistance for flood damage rehabilitation in Cambodia and Viet Nam.³

¹ MRC's FMMP was approved by the MRC Council in October 2002. The FMMP comprises six interrelated components: (i) establishment of a regional flood management and mitigation center, (ii) structural measures, (iii) transboundary mediation, (iv) flood emergency management, (v) flood-proofing measures, and (vi) land use management.

² The TA first appeared in *ADB Business Opportunities* (Internet edition) on 18 October 2003.

³ ADB provided a total of \$135.3 million in loan funds, comprising \$76.5 million for the Emergency Flood Rehabilitation Project in Cambodia and \$58.8 million for the Emergency Assistance for Flood Damage Rehabilitation in Viet Nam.

6. **The Flood Management and Mitigation Program.** Rapidly increasing populations in the region have necessitated intensification of land use throughout the Mekong River basin, and the riparian countries have made large investments in infrastructure and services to meet the needs of the growing population. Although the improvements have helped the region achieve strong economic growth, there has been a corresponding increase in the adverse impacts of floods. The activities of humans (including interventions such as roads, bridges, flood embankments, in-filling of drainage channels and lowlands, river diversions, land clearing and intensification of agriculture, and building within flood-prone areas) have increased the risk posed by floods. In addition, in the absence of a strong coordinating mechanism, the riparian countries have tended to adopt development programs that have potentially negative impacts on other parts of the river basin.

7. Given the urgent need for coordination among the riparian countries and the increasing loss and suffering caused by floods, MRC was charged in 2001 to develop a strategy and program to deal with the threat of future flood disasters in the Mekong River basin. The overall goal of the Flood Management and Mitigation Program or the FMMP is to prevent, minimize, or mitigate people's suffering and economic losses due to floods while preserving the environmental benefits of floods. The FMMP is based on priorities agreed upon by the four member countries of MRC, and its components are closely interrelated.⁴ It has been designed to be implemented over 6 years at an estimated cost of \$23.79 million.⁵

8. MRC member countries have thus committed to manage the natural resources of the basin in a sustainable manner and for their mutual benefit. They recognize the need to conserve the beneficial economic and environmental impacts of floods and, by adopting the principles defined in the FMMP, have agreed to an integrated approach to management and mitigation of Mekong River floods.

9. A detailed basinwide implementation plan is now needed to realize the FMMP. The TA will assist MRC to develop the implementation plan and to build its own capacity for continued refinement of the plan. Development of the plan will use a regional approach giving attention to transboundary issues and taking account of the outputs of all ongoing MRC programs and other activities under the FMMP.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. The purpose of the TA is to reduce the vulnerability of people living in the Mekong River basin to the negative impacts of floods. Its main deliverable will be an implementation plan for components 2 and 5 of MRC's FMMP for the Mekong River basin and its subbasins. The plan will bring a more concrete form to the strategic approach and program described in the FMMP, and will be used subsequently under the GMS program to prepare investment projects with cross-boundary implications and synergies. A project framework is in Appendix 1.

⁴ The FMMP was developed through national consultations and regional workshops during 2001 and 2002.

⁵ The program will be funded by grant funds provided by bilateral sources, multilateral aid agencies, and member country contributions.

B. Methodology and Key Activities

11. The TA will support implementation of all activities grouped under MRC's FMMP components 2 (structural measures) and 5 (flood-proofing measures). The TA will realize the following outputs: (i) implementation plan for the FMMP (output 1); and (ii) capacity built within MRC and its four National Mekong Committees (NMCs) for development and refinement of the plan (output 2). Key activities for output 1 are to (i) describe Mekong River basin flood characteristics; (ii) evaluate flood-proofing measures and derive guidelines and best practices; (iii) determine the potential for structural interventions and develop guidelines and procedures for incorporating best practices in the design of structural measures; (iv) develop an implementation plan for components 2 and 5 of the FMMP, including optimum sequencing; and (v) determine discrete programs of subbasin interventions and assign priorities. Key activities for output 2 are to (i) build the capacity of MRC for stakeholder participation and consensus building, and (ii) prepare and implement training programs on various aspects of the implementation plan. A summary initial poverty and social analysis is in Appendix 2. Supplementary Appendix A provides an indicative schedule of activities for components 2 and 5.

12. In developing the plan, the TA consultants will evaluate transboundary issues and will ensure that all relevant outputs from ongoing MRC programs and related activities under the FMMP are fully integrated into a comprehensive and phased implementation plan.⁶ The plan will provide a regional framework for high priority flood management interventions to reduce vulnerability to floods, especially among the poor and other vulnerable groups.

C. Cost and Financing

13. The total cost of the TA is estimated at \$3.7 million equivalent, comprising \$2.14 million in foreign exchange and \$1.56 million in local currency (Appendix 3). ADB will finance \$1.0 million equivalent on a grant basis from the ADB-funded TA program. The Government of the Netherlands (through its Royal Netherlands Embassy [RNE] in Hanoi) will provide a grant of \$2.7 million equivalent as parallel cofinancing. The TA will support the provision of consulting services, training, and national and regional consultation workshops.

D. Implementation Arrangements

14. ADB will enter into a TA agreement with MRC to implement the TA.⁷ MRC is an international agency charged with promoting cooperation in all fields of sustainable development, utilization, management, and conservation of the water and related resources of

⁶ Components 1, 3, 4, and 6 of the FMMP are being supported by other agencies and will be undertaken simultaneously with components 2 and 5. The work will require a high level of coordination by MRC, and it will be incumbent on the TA consultants to liaise closely with MRC and consultants engaged in parallel and related activities (para. 0).

⁷ The TA is a relatively small component of the FMMP, and its management by MRC will help ensure better integration and coordination among the different components.

the Mekong River basin.⁸ MRC conducts a wide range of technical services using its own staff augmented by consultants and specialists, and is the most qualified and competent agency to provide the services required. It has implemented many externally financed programs of a similar nature, and can mobilize well-qualified personnel quickly. Accordingly, MRC is considered competent to manage the TA.

15. The four NMCs, represented by their secretariats, will help coordinate the TA and other FMMP activities at the country level.⁹ The NMC secretariats will also interface with collaborating government agencies. Consultants, local institutions, and civil society organizations (CSOs) will be engaged under the TA to assist MRC and the NMC secretariats. Consultation with national and international agencies and with representatives of specific target groups will be achieved through a series of national and regional workshops.¹⁰

16. The TA will be implemented over 22 months, beginning in early 2004. It will require approximately 284 person-months (110 international, and 174 domestic) of additional technical expertise. Expertise will be required in the fields of project management, social surveys and related analyses, community participation, environmental studies, flood management, hydrology and river hydraulics, mapping and geographic information systems, economic and financial analyses, and training. An indicative staffing schedule is in Supplementary Appendix B.

17. ADB will finance 32 person-months of international consulting services and 90 of domestic. The specialists will be recruited as individuals and will comprise (i) an international chief technical advisor (CTA) with responsibility for technical overview of the TA and its overall supervision,¹¹ (ii) international and domestic training and public participation specialists, and (iii) national program specialists representing flood management agencies of the four member countries of MRC. Their role will be twofold: capacity building within MRC and the NMCs for stakeholder participation, consensus building, and refinement of the implementation plan (output 2); and technical oversight and day-to-day coordination of TA activities to ensure splicing of the various components of the FMMP into the implementation plan. The ADB-financed specialists will work closely with those financed by the Netherlands' grant and will be integrated, as necessary, into the team responsible for output 1 under the direction of the team leader. All specialists will be selected by MRC following ADB's procedures or through other arrangements acceptable to ADB for selecting and engaging domestic experts.¹² The terms of reference for the technical expertise are in Appendix 4.

⁸ MRC started in 1957 as the Mekong Committee under the umbrella of the United Nation's Economic Commission for Asia and the Far East. It became an independent international organization in 1995 with the signing of an agreement on cooperation by Cambodia, Lao PDR, Thailand, and Viet Nam for the sustainable development of the Mekong River basin. The agreement has the status of an international treaty and gives full management responsibility of MRC to a Council of Ministers of member countries. Its Articles provide the basis for the member states to negotiate specific agreements on a comprehensive basin development planning process, rules of water utilization, and a range of political, social, economic, and technical matters needed to ensure sustainable development within the basin. MRC provides a continuous point of reference and source of knowledge relating to the natural resources of the lower Mekong River Basin.

⁹ The NMCs of Cambodia and Lao PDR are under the jurisdiction of the office of their respective prime ministers. The NMC of Thailand is under the jurisdiction of the Ministry of Natural Resources and Environment, and the NMC of Viet Nam is under the Ministry of Agriculture and Rural Development.

¹⁰ The Annual Flood Forum—one of the FMMP activities—will provide a regular forum for broad-based, regional consultation.

¹¹ The CTA will ensure close coordination with all ongoing MRC programs and FMMP activities.

¹² The personnel will be selected from among qualified nationals of ADB's member countries.

18. MRC will establish a special account for expenditures to be financed under the TA, to be used for the ADB and the Netherlands grants. MRC will maintain separate records (expressed in dollars) of the ADB and Netherlands funds. An advance payment facility will be used: the initial advance from each organization will cover anticipated expenditures for the first 6 months of TA implementation. Subsequent payments to the account will be based on projected needs over the next 6 months and will be subject to liquidation of the initial advance.

19. MRC will prepare separate accounts for ADB and Netherlands grants, and arrange an annual audit of ADB's financing by an auditing firm acceptable to ADB. The annual audit report will be submitted to ADB within 9 months of the close of each fiscal year. In reporting progress (see para. 20), MRC will provide details of expenses incurred during the reporting period, cumulative expenditures, and expenditures projected during the next 6 months for each account.

20. MRC will submit 6-monthly progress reports to ADB and RNE covering all activities financed under the TA. The reports will describe achievements in relation to the activities schedule and FMMP's time-bound targets and indicators, identified problems and steps being taken to resolve such problems, and plans for the next reporting period. MRC will prepare and submit a TA midterm report, and a completion report to ADB and RNE within 6 months of TA completion. In addition, MRC will submit technical reports prepared under the TA and under other FMMP components to ADB and RNE for information and comments. MRC will make all TA outputs available to the public through its library services and on its web site.¹³

21. MRC will facilitate joint aid agency reviews of the TA and other components of the FMMP. The reviews will be scheduled at least 2 months before the annual Council Meeting so that their findings can be shared with the Council. The joint reviews will be undertaken at least annually. ADB may also undertake separate reviews of the TA. MRC will invite—with sufficient advance notice—representatives of ADB and RNE to country and regional workshops organized under the TA and other components of the FMMP.

22. MRC will adopt a program performance management system (PPMS) for monitoring and evaluating overall progress, outputs, and outcomes of the TA at various stages of implementation. The PPMS will comprise (i) FMMP's program framework with its quantified and time-bound targets and indicators, and associated key risks and assumptions; (ii) regular program progress reports to track progress from the baseline situation against the targets (based on the indicators identified in the program framework); (iii) baseline and follow-up surveys; and (iv) component completion reports and an overall FMMP completion report. The baseline and follow-up surveys will be conducted among agencies, local authorities, and communities, including the specific target groups that are key beneficiaries of the FMMP. Special attention will be given to discerning pro-poor effects of the FMMP. The PPMS will be financed by the Netherlands Government through separate grant financing.

IV. THE PRESIDENT'S DECISION

23. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$1,000,000 on a grant basis for Support for the Mekong River Commission Flood Management and Mitigation Program, and hereby reports this action to the Board.

¹³ Final versions of the reports, approved by ADB and RNE, may be disseminated.

TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal Reduce people's suffering and economic losses due to floods without losing the environmental and economic benefits of floods	Systems and capacity for well-coordinated regional flood management in place and functioning in the member countries of the Mekong River Commission (MRC)	Approval of the major findings and recommendations of the flood management program by MRC member countries and integration of the related guidelines into national policy and practice	
Objective Reduce the vulnerability of people living in the Mekong River basin to the negative impacts of floods	<i>End of Project Success Status</i> Implementation plan for components 2 and 5 of the MRC Flood Management and Mitigation Program (FMMP) for Mekong River basin adopted by the four MRC member countries by end-2005 Capacity of MRC, National Mekong Committees (NMCs), and agency staff to prepare and refine the implementation plan strengthened by mid-2005	Progress reports Project completion report Decisions of MRC council meetings Official declarations by NMCs and national agencies in MRC member countries Socioeconomic indicators in MRC member countries	<i>Objective to Goal</i> MRC member countries align their national development strategies and programs in accordance with the implementation plan for the FMMP. MRC member countries continue to inform each other of their immediate and long-term development goals in relation to the implementation plan for the FMMP.
Components, Outputs, and Activities A. Developing an implementation plan for components 2 and 5 of the FMMP 1. Characteristics of Mekong River basin floods are described. a. Assist MRC to draft a flood management strategy as an input to the basin development plan (BDP) b. Compile, review, and inventory available data concerning the nature, extent, timing, duration of Mekong River floods, including perceived changes in the cycle c. Assist MRC to update existing maps and ensure compatibility of	a. Strategy prepared by end-April 2004 b. Available data compiled, reviewed, and inventoried by end-September 2004 c. Maps updated and GIS compatibility ensured by end-March 2005	Project output accomplishment reports Maps updated and GIS satisfactorily modified as necessary Reports submitted to MRC Council	<i>Components, Outputs, and Activities to Objective</i> All available data and maps are made available by MRC member countries. Mobilization of TA consultants is timely.

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>geographic information systems (GIS) with the needs of the project</p> <p>d. Undertake frequency and deterministic statistical analyses of historic floods and their impacts</p>	<p>d. Statistical analyses of historic floods and their impacts completed by end-March 2005</p>		
<p>2. Flood-proofing measures are evaluated.</p> <p>a. Compile data on the beneficial social, environmental, and economic impacts of floods in the Mekong River basin</p> <p>b. Evaluate the benefits of flood proofing and other soft measures (including flood forecasting and early warning, evacuation roads, and financial instruments)</p> <p>c. Conduct socioeconomic surveys and poverty analyses of flood-affected communities to determine positive and negative impacts of floods</p> <p>d. Evaluate traditional coping mechanisms of communities faced with recurrent floods</p> <p>e. Undertake flood vulnerability analyses and desegregate impacts on women, children, and other vulnerable groups</p> <p>f. Develop guidelines for incorporating best practices in the design of flood-proofing measures</p>	<p>a. Data compiled by end-October 2004</p> <p>b. Flood proofing and other soft measures evaluated by end-2004</p> <p>c. Socioeconomic surveys of flood-affected communities conducted by end-June 2005</p> <p>d. Coping mechanisms evaluated by end-February 2005</p> <p>e. Flood vulnerability analyses completed by end-April 2005</p> <p>f. Guidelines completed by end-June 2005</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC Council</p> <p>Survey results</p> <p>Guidelines for design of flood-proofing measures</p>	<p>All available data are made available by MRC member countries.</p> <p>Suitable NGOs are contracted for community mobilization and social surveys.</p> <p>Affected communities participate effectively and freely in workshops and consultation meetings.</p>
<p>3. Potential for structural interventions is determined.</p> <p>a. Prepare an inventory of existing and planned structures that have hydraulic</p>	<p>a. Inventory completed by end-2004</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC</p>	<p>All available data are made available by MRC member countries.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>impacts on Mekong River flows</p> <p>b. Determine the nature and extent of structural impacts on Mekong River flows</p> <p>c. Review and assess the operating rules and operation and maintenance (O&M) capabilities for major hydraulic structures</p> <p>d. Review and compare national design standards for dams, reservoirs, and flood control works</p> <p>e. Undertake failure risk analyses of structural interventions; and examine the potential impacts of proposed new structures</p> <p>f. Develop guidelines and procedures for incorporating best practices in the design of structural measures</p>	<p>b. Nature and extent of impacts determined by end-March 2005</p> <p>c. Operating rules and O&M capabilities for major hydraulic structures assessed by end-March 2005</p> <p>d. National design standards compared by end-March 2005</p> <p>e. Failure risk analyses of structural interventions completed by end-June 2005</p> <p>f. Guidelines completed by end-August 2005</p>	Council	Available data are sufficient to support risk analyses.
<p>4. Implementation plan for components 2 and 5 of the FMMP are developed.</p> <p>a. Review and compare national flood management strategies and identify any inconsistencies</p> <p>b. Determine flood management constraints and opportunities encapsulated in BDP, environment program (EP), and water utilization program (WUP)</p> <p>c. Formulate subbasin flood management programs to reduce the risk of loss and damage due to floods</p> <p>d. Establish appropriate design standards and guidelines for integrated structural and nonstructural flood management measures, including</p>	<p>a. National flood management strategies reviewed and compared by end-December 2004</p> <p>b. Flood management constraints and opportunities determined by end-April 2005</p> <p>c. Regional and subbasin flood management programs formulated by end-July 2005</p> <p>d. Appropriate design standards and guidelines for integrated structural and nonstructural flood management measures established</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC Council</p> <p>Completed BDP and EP</p> <p>Adoption of the program by NMCs and national agencies in MRC member countries</p>	<p>BDP completed on time.</p> <p>Recommended strategy and design standards are agreed upon in workshops and consultation meetings.</p> <p>Recommendations prepared under the Flood Emergency Management Strengthening component are appropriately incorporated.</p> <p>Specific measures to assist women, children, and other vulnerable groups are appropriately incorporated.</p> <p>Findings related to transboundary and cumulative impacts are agreed to by MRC member countries.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>flood proofing, based on outcomes of activities 2(f) and 3(e)</p> <p>e. Determine transboundary and cumulative impacts of various measures in isolation and in combination</p> <p>f. Prepare an implementation plan for realization of components 2 and 5 of the FMMP for Mekong River basin and its subbasins to maximize socioeconomic and environmental benefits (integrating to the extent possible the outputs of other FMMP components)</p> <p>g. Determine optimum sequencing of interventions based on technical, environmental, and socioeconomic aspects, and formulate an overall implementation schedule</p>	<p>by end-September 2005</p> <p>e. Impacts of various measures determined by end-October 2005</p> <p>f. Implementation plan for realization of components 2 and 5 of the FMMP prepared by end-October 2005</p> <p>g. Optimum sequencing of interventions determined, and overall implementation schedule formulated by end-2005</p>		<p>Recommended overall plan and implementation schedule for the FMMP is endorsed by MRC member countries.</p>
<p>5. The implementation plan is desegregated into subbasin components.</p> <p>a. Determine discrete programs of interventions on the basis of subbasins and assign priorities</p> <p>b. Propose arrangements for sharing costs among member countries where appropriate</p>	<p>a. Discrete programs of interventions determined and priorities assigned by end-2005</p> <p>b. Cost-sharing arrangements among member countries prepared by end-2005</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC Council</p> <p>Adoption of the subbasin programs and priorities by NMCs and national agencies in MRC member countries</p>	<p>MRC member countries align their national development strategies and programs in accordance with the prioritized subbasin interventions.</p> <p>MRC member countries continue to inform each other of their immediate and long-term development goals in relation to the FMMP.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>B. Building management capacity for development and refinement of the implementation plan for components 2 and 5 of the FMMP</p> <p>1. Capacity for stakeholder participation and consensus building is enhanced.</p> <p>a. Develop mechanisms for coordination of flood management activities with those of other programs</p> <p>b. Institute a process for stakeholder participation in developing and refining the FMMP implementation plan</p> <p>c. Conduct national and regional consultation workshops</p> <p>d. Prepare and implement public awareness campaigns</p>	<p>a. Mechanisms for coordination with other programs developed by end-July 2004</p> <p>b. Stakeholder participation instituted by end-September 2004</p> <p>c. National and regional consultation workshops conducted according to work plan</p> <p>d. Public awareness campaigns prepared by end-January 2005 and implemented continuously</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC Council</p> <p>Workshop reports</p> <p>Progress reports of related programs</p>	<p>Staff are made available for training and are retained for a defined period.</p> <p>Concerns of NGOs and other stakeholders are dealt with effectively.</p> <p>Preparation of the implementation plan for the FMMP is effectively coordinated with the activities of other programs.</p>
<p>2. Training programs are developed.</p> <p>a. Prepare and implement structured on-the-job training programs</p> <p>b. Formulate and implement staff training in technical, environmental, and social aspects of development and refinement of the implementation plan for components 2 and 5 of the FMMP</p> <p>c. Formulate programs for special training at regional education centers</p> <p>d. Prepare and implement formal in-country training programs</p>	<p>a. Structured on-the-job training programs prepared by end-2004 and implemented continuously</p> <p>b. Staff training for developing and refining the implementation plan formulated by end-March 2005 and implemented continuously</p> <p>c. Programs for special training at regional education centers formulated by end-May 2005</p> <p>d. Formal in-country training programs prepared by end-May 2005 and implemented continuously</p>	<p>Project output accomplishment reports</p> <p>Reports submitted to MRC Council</p> <p>Training reports</p>	<p>Staff are made available for training and are retained for a defined period.</p>

SUMMARY INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Sector identified as a regional priority in Greater Mekong Subregion (GMS) poverty analysis?	Yes	Sector identified as a regional priority in country poverty partnership agreements?	Yes
Contribution of the sector/subsector to reduce poverty in GMS: Severe floods counteract efforts to improve economic development and reduce poverty in the lower Mekong River basin. At the household level they cause loss of life due to drowning and illness; destruction of crops, houses, and other possessions; loss of livestock; and worsening poverty and indebtedness in rural areas. Floods can be particularly devastating for poor farmers/fishers for whom recovery (replanting of crops, purchase of inputs and livestock, repair of houses and fishing gear) entails borrowing. As part of a broad program of improved natural resources management, the GMS Subregional Cooperation Strategy and Program (SCSP) aims to reduce risks posed by natural disasters. Improved flood management, based on a combination of flood proofing and structural flood protection measures, can contribute substantially to poverty reduction.			

B. Poverty Analysis

Proposed Classification

Proposed Classification: Poverty Intervention	Thematic: Environment Protection
What type of poverty analysis is needed?	
Poverty in the lower Mekong River basin is related to lack of access to resources, limited opportunity for alternative livelihoods, and heightened uncertainty due to wide-ranging variability in floods and related natural phenomena. The poverty analysis will aim to delineate priority areas for assistance and determine the most appropriate form of assistance for sustainable socioeconomic improvement. The vulnerability of poor rural communities to floods and other natural disasters in lowland areas will be assessed to design means of strengthening traditional coping mechanisms and self-reliance through such means as flood proofing of houses, creation of community-financed and managed funds for disaster relief and recovery, flood damage insurance, and alternative livelihood initiatives.	

C. Participation Process

Stakeholder analysis	Yes
Participation strategy	Participatory approaches will be used to understand the determinants and characteristics of poverty and vulnerability

D. Gender and Development

The poverty analysis will examine the particular impacts of natural disasters on women and children and the role of women during and after disasters. Means of minimizing negative impacts will be developed and incorporated into overall flood management strategies.

E. Social Issues

Subject	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	None		No
Indigenous Peoples	Possibly significant	Surveys will discern impacts of floods on different ethnic groups, and determine whether or not an indigenous peoples plan is required.	To be determined during TA implementation
Labor	None		No
Affordability	None		No
Other Risks/ Vulnerabilities	None		No

COST ESTIMATES AND FINANCING PLAN (\$)

Item	Foreign Exchange	Local Currency	Total Cost
A. Financed by Asian Development Bank^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	475,200	0	475,200
ii. Domestic Consultants	0	282,000	282,000
b. International and Local Travel	13,200	0	13,200
2. Stakeholder Workshops and Meetings	0	180,000	180,000
3. Contingencies	25,500	24,100	49,600
Subtotal (A)	513,900	486,100	1,000,000
B. Financed by Government of the Netherlands			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	1,418,300	0	1,418,300
ii. Domestic Consultants	0	294,550	294,550
b. International and Local Travel ^b	44,000	91,000	135,000
c. Reports and Communications	34,000	15,000	49,000
2. Equipment ^c	40,000	0	40,000
3. Surveys and Investigations			
a. Social Surveys	0	280,000	280,000
b. Other Surveys	0	160,000	160,000
4. Office Operations ^d	0	46,620	46,620
5. Management Fee	0	126,200	126,200
6. Contingencies	90,050	60,280	150,330
Subtotal (B)	1,626,350	1,073,650	2,700,000
Total	2,140,250	1,559,750	3,700,000

^a Financed from the Technical Assistance Special Fund.

^b Includes vehicle rental and regional airfares.

^c Includes desktop computers and printers, scanners, photocopiers, facsimile machines, and office software.

^d Includes office support staff.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Background

1. The Asian Development Bank (ADB) participated closely with the Mekong River Commission (MRC) in reviewing and finalizing its flood management and mitigation program (FMMP), which sets out a strategy for preparing an integrated flood management plan linking six interrelated components. These terms of reference (TOR) describe the major outputs, key activities, and general work plan for consultants implementing the technical assistance (TA) to support components 2 and 5 of MRC's FMMP.

2. MRC will implement the TA, and will select and engage consultants following ADB's procedures or through other arrangements acceptable to ADB for selecting and engaging domestic consultants and civil society organizations (CSOs). The consultants' team will comprise specialists recruited through a firm as well as individually. All will work together under the direction of the firm's team leader.

3. Within MRC, the Operations Division will have primary responsibility for TA activities. The office of the chief executive officer (CEO) and the regional flood management and mitigation center (RFMMC)—equivalent to a division—will also be involved in implementation, as shown in the Table. Coordination of TA activities with other FMMP components and MRC programs will be undertaken through MRC's current coordination framework.

Table A4: Arrangements for Coordination with Other Programs

Component	Responsible Division	Collaborating Divisions/ Programs
Structural and flood-proofing measures (components 2 and 5)	Operations Division	AIFP, BDP, EP, FFEWS, Fisheries Program, WUP
Establishment of RFMMC (component 1)	Initially the Technical Support Division (TSD) and later RFMMC (once established)	TSD and OPD
Transboundary mediation (component 3)	Office of the CEO	RFMMC (once established)
Emergency management strengthening (component 4)	Initially OPD and later RFMMC (once established)	TSD and OPD
Land use management (component 6)	OPD	AIFP, BDP, EP

AIFP = agriculture, irrigation and forestry program; BDP = basin development plan; CEO = chief executive officer; EP = environmental program; FFEWS = flood forecasting and early warning system; RFMMC = regional flood management and mitigation center; WUP = water utilization program.

Source: MRC.

4. MRC will select a chief technical advisor (CTA) to supervise TA implementation. A FMMP coordinator, assisted by the CTA, will be placed in the Office of the CEO to ensure day-to-day coordination of TA activities. The FMMP coordinator will head the interdivisional FMMP working group. The secretariats of the four National Mekong Committees (NMCs) will provide liaison between the TA and related activities at country level, and will interface with collaborating government agencies, local authorities, and CSOs at the country level. In each country, a

national FMMP coordination group will be established comprising the head of NMC and representatives of the collaborating agencies. In the case of Viet Nam, special arrangements will be made to interact with the Cuu Long River Basin Organization.¹

5. On a day-to-day basis the TA consultants will work closely with relevant MRC staff. As much as possible, the consultants will be integrated into the existing working arrangements of MRC to permit the splicing of the particular activities under the TA into ongoing MRC programs.

B. Terms of Reference

6. The objective of consulting services is to assist MRC to develop an implementation plan for components 2 and 5 of MRC's FMMP for the Mekong River basin and its subbasins (output 1). The TA consultants will also build management capacity within MRC for developing and refining the implementation plan, including the capacity for stakeholder participation and consensus building, and for developing and implementing structured on-the-job and formal in-country training (output 2). They will formulate programs for special subject matter training at regional education centers.

7. The basic reference documents for the TA are (i) MRC Flood Management and Mitigation Strategy (November 2001), (ii) Flood Management Programme document (November 2002), (iii) Detailed Workplan for Implementation of the MRC Flood Management and Mitigation Programme (April 2003), and (iv) minutes of an informal aid agencies meeting on 24 April 2003.

1. Implementation Plan for the Flood Management and Mitigation Program (Output 1)

8. Output 1 will entail five main activities.

a. Describe Characteristics of Mekong River Basin Floods

9. The consultants' tasks are as follows:

- (i) Assist MRC draft a strategy for flood management as an input to the basin development plan (BDP), based on a review of data, maps, and reports held by MRC, and a study of the extent and nature of existing flood control measures, current status of national plans for implementing flood control works, recommended criteria for project identification, and linkages between flood management strategies and the different elements of BDP,²
- (ii) Compile, review, and inventory available data on the nature, extent, timing, and duration of Mekong River floods, including any perceived changes in the cycle,
- (iii) Revise and update existing maps and create a geographic information system (GIS) for the Mekong River basin, cross-referenced to MRC's existing databases,
- (iv) Undertake frequency and deterministic statistical analyses of historic floods and their impacts, in close cooperation with MRC staff and other consultants developing risk assessment tools under FMMP component 1 (establishment of the RFMMC).

¹ The Cuu Long River Basin Organization is being strengthened under a program supported by Australian Agency for International Development (AusAID).

² The output of this task, to be undertaken by the individually recruited flood management specialist, will be a concise report consistent with the overall reporting needs of BDP.

b. Evaluate Flood-Proofing Measures

10. The consultants' tasks are as follows:

- (i) Compile data on the beneficial (environmental, social, and economic) impacts of floods in the Mekong River basin.
- (ii) Evaluate the benefits of flood proofing and other “soft” measures (flood forecasting and early warning, evacuation roads, and financial instruments),³
- (iii) Conduct socioeconomic surveys and poverty analyses of flood-affected communities to determine the positive and negative impacts of floods on their lives,⁴
- (iv) Evaluate the traditional coping mechanisms of communities faced with recurrent flood events,
- (v) Undertake flood damage vulnerability analyses (desegregating the impacts on women, children, and other vulnerable groups),
- (vi) Develop guidelines for incorporating best practices in the design of flood-proofing measures (including recommendations covering traditional coping mechanisms).

c. Determine the Potential for Structural Interventions

11. The consultants' tasks are as follows:

- (i) Inventory existing and planned structures that have or could have hydraulic impacts on Mekong River flows,
- (ii) Determine the nature and extent of the impacts of structural interventions on Mekong River flows,
- (iii) Review and assess the operating rules for major hydraulic structures (dams, reservoirs, major flood control works, river diversions, and flood retention basins), including operation and maintenance (O&M) capabilities,
- (iv) Review and compare national design standards for dams, reservoirs, major flood control works, etc.,
- (v) Using the newly developed risk assessment tools from FMMP component 1, analyze failure risk of structural interventions; and examine the impacts of proposed new structures,⁵
- (vi) Develop guidelines and procedures for incorporating best practices in the design of structural measures.

³ In these TOR, “soft” measures are those which do not increase water levels within the river channel and do not, therefore, increase the risk of overbank flow or failure of flood control works. “Hard” measures are those which cause increases in water levels in the river channel (either adjacent to the works or at other locations within the river system as a direct result of the works). Hard measures include flood control embankments and other works designed to prevent floodwater from leaving the river and spreading over the floodplain. The classification based on impact is seen to be more useful than the more arbitrary classification of measures as “structural” or “nonstructural.”

⁴ Determine the different impacts of floods, both beneficial and negative, on different ethnic groups, their means of coping with such events, and the need to develop different approaches in designing flood management and mitigating measures. An indigenous people's plan will be prepared if ADB considers such differences to be significant.

⁵ Risks to be considered will include residual and newly created risks of flood inundation, risks associated with design and construction errors, risks of overtopping or structural failure, risks associated with extreme events (i.e., larger-than-design standard), and other pertinent risks. The consultants should draw on whatever results are available from FMMP component 4 (emergency management strengthening).

d. Develop an Implementation Plan for Components 2 and 5 of the Flood Management and Mitigation Program

12. The consultants' tasks are as follows:

- (i) Review and compare national flood management strategies to discern inconsistencies, and formulate recommendations aimed at eliminating such inconsistencies,
- (ii) Determine interactively the flood management constraints and opportunities encapsulated in BDP, environment program, and water utilization program,
- (iii) Formulate subbasin flood management development programs to reduce the risk of loss and damage due to floods,
- (iv) Establish appropriate design standards for integrated structural and nonstructural flood management measures, including flood proofing and other soft measures (based on the outcomes of related activities),
- (v) Determine transboundary and cumulative impacts of various measures, in isolation and in combination,
- (vi) Prepare an overall implementation plan for realizing components 2 and 5 of the FMMP for Mekong River basin and its subbasins to maximize socioeconomic and environmental benefits (integrating to the extent possible the outputs of other FMMP components),⁶
- (vii) Determine optimum sequencing of interventions based on technical, environmental, and socioeconomic aspects; and formulate an overall implementation schedule.

e. Desegregate the Implementation Plan into Subbasin Components

13. The consultants' tasks are as follows:

- (i) Determine discrete programs of interventions on the basis of subbasins and assign priorities,
- (ii) propose arrangements for sharing costs among member countries, where appropriate.

2. Building Management Capacity for Developing and Refining the Implementation Plan (Output 2)

14. Output 2 will entail two key activities.

a. Enhance Capacity for Consultation and Consensus Building

15. The consultants' tasks are as follows:

- (i) Develop mechanisms for coordinating the TA activities with those of the core programs, working groups, and other programs and activities as appropriate,
- (ii) Institute a process for stakeholder participation in developing and refining the FMMP implementation plan,

⁶ In preparing the plan, the consultant will identify, to the extent possible, land acquisition and resettlement impacts and will be responsive to the need to minimize involuntary resettlement. In addition, areas of particular flood hazard will be identified with a view to restricting development within them.

- (iii) Organize and conduct national and regional consultation workshops,
- (iv) Prepare and implement public awareness campaigns.

b. Develop Training Programs

16. The consultants' tasks are as follows:

- (i) Prepare and implement structured on-the-job training programs,
- (ii) Formulate and implement staff training in technical, environmental, and social aspects of developing and refining the FMMP implementation plan,
- (iii) Formulate programs for special training at regional education centers,
- (iv) Prepare and implement formal in-country training programs.

C. Surveys and Investigations

17. Surveys will be conducted to discern the impacts of floods on different ethnic minority groups. From the results, the consultants will develop appropriate indigenous peoples planning documents, as necessary. Other surveys and investigations may also be required during the TA; their exact nature will be determined in consultation with MRC. For all such surveys and for any special studies and pilot initiatives to be undertaken by other firms, institutions, or CSOs, the consultants will assist MRC to develop scope and TOR and to supervise implementation.

D. Stakeholder Workshops and Meetings

18. The consultants will assist MRC to conduct stakeholder workshops and meetings at key decision points in the work program. All such workshops and meetings will follow MRC's standard practice for stakeholder consultation and consensus building. Hence, adequate time will be built into the work program for consultation, planning, and conducting all necessary workshops and meetings. Consultation with beneficiaries and with people who may be adversely affected by any works related to the FMMP will be fully incorporated as standard operating procedure during the TA. The TA will ensure that the four member countries approve the implementation plan for components 2 and 5 of MRC's FMMP by end-2005.

E. Reporting

19. The consultants will prepare an inception report (to be submitted within 3 months of the start of the main contract for consulting services); semiannual progress reports; midterm report (to be submitted within 9 months of the start of the main contract for consulting services); and a draft final report (to be submitted 2 months before completion of the main contract for consulting services). The final report will be prepared on the basis of comments on the draft final report received from the NMCs, MRC, Government of the Netherlands, and ADB. The consultants will prepare a series of technical reports, workshop reports, training manuals, and training modules, the exact nature and timing of which are to be indicated in the inception report.

20. The consultants will also collaborate with MRC and the NMCs to prepare publications for regional and international professional journals of regional significance. The number of such publications will be decided at the time of contract negotiation.