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**SUBREGIONAL ENVIRONMENTAL MONITORING AND  
INFORMATION SYSTEMS Phase - II**

**T.A. No. 5899-REG**

**IMPLEMENTATION PLAN**

**UNEP Regional Resource Centre  
for Asia and the Pacific**

**January 2001**

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## Abbreviations

ADB	Asian Development Bank
AIT	Asian Institute of Technology
GIS	Geographic Information Systems
GMS	Greater Mekong Sub -region
GRID	Global Resource Information Database
ICIMOD	International Center for Integrated Mountain Development
IRS	Indian Remote Sensing
Landsat	US Earth Resource Satellite
LISS	Linear Imaging Self Scanner
MODIS	Moderate Resolution Imaging Spectroradiometer
MRC	Mekong River Commission
NGO	Non-Governmental Organizations
RETA	Regional Technical Assistance
RS	Remote Sensing
RRC.AP	Regional Resource Centre for Asia and the Pacific
SACEP	South Asia Cooperative Environment Program
SEF	Strategic Environmental Framework
SEMIS	Sub-regional Environmental Monitoring and Information Systems
SoE	State of the Environment
SPOT	Systeme Pour l'Observation de la Terre
SPREP	South Pacific Regional Environmental Program
TA	Technical Assistance
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Program
UNEP RRC.AP	UNEP Regional Resource Centre for Asia and the Pacific
USGS	United States Geological Survey
WIFS	Wide Field Sensor
WGE	Working Group on Environment
WWW	World Wide Web

## 1. Introduction

The Asian Development Bank (ADB) is implementing a Technical Assistance (TA) for the Subregional Environmental Monitoring and Information Systems - Phase II (SEMIS II) in collaboration with the United Nations Environment Program - Regional Resource Centre for Asia and the Pacific (UNEP RRC.AP). The project is co-financed by ADB through the Japan Special Fund and The Government of Norway and the UNEP RRC.AP.

A follow-up of SEMIS-I was requested by the Greater Mekong Subregion (GMS) countries at the Fourth Meeting of the GMS Working Group on Environment (WGE) held in Hanoi in March 1998. GMS countries are Cambodia, Yunan province of the People's Republic of China (referred as a Country), Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam. The GMS Ministerial Meeting held in Manila in September 1998 endorsed the request. The project was approved by ADB on 29 December 1999.

The objective of the TA is to build upon the achievements of SEMIS-I. The achievements of SEMIS-I include:

- 1) a defined core dataset;
- 2) a conceptual database design (spatial); and
- 3) technical capacity for exchange of data.

The overall goal of SEMIS-II is to help GMS governments to make informed decisions regarding sustainable development through Integrated Economic and Environmental Development Planning (IEEDP). The duration of the project is 24 months starting August 2000.

## 2. Background and Rationale

GMS countries have shared common natural resources, for example rivers and the coastal areas. Across the subregion, the countries have similar ecology, geology, and climate. Based on similar and interdependent natural resource base, the GMS countries also share common environmental problems of the region as the initiatives taken by one-country affects its neighbors. For these reasons, there is a need for sharing data and information on environmental and natural resources in a timely manner. The shared information will assist in informed decision making related to resource allocation and management. This need has been recognized and is being addressed by the ADB and other development agencies.

The UNEP RRC.AP envisions being the key agency to service the needs of environment data and information in the region. During SEMIS-I, out of 16 outputs, the UNEP RRC.AP was responsible for implementing five major outputs including:

- 1) maintaining catalogue of environmental data and information in GMS;
- 2) development of in-country training capacity in GIS and database management;
- 3) development of agreements on data sharing and access;
- 4) development of sub-regional GIS database; and
- 5) hardware/software support to the countries.

In SEMIS-II, the UNEP RRC.AP will facilitate and assist in the implementation of the project in close collaboration with the ADB.

### 3. Objectives

The overall goal of the project is to help GMS Governments to make informed decisions regarding sustainable development through integrated economic and environmental planning. SEMIS-I provided mechanisms for sharing of information on environmental and natural resources issues. SEMIS-II will build on this mechanism to undertake pilot demonstration projects using data and information for integrated economic and environmental planning. The key objectives of SEMIS-II include:

- 1) assess the availability of useful and relevant data for planning purposes;
- 2) increase and strengthen the capacity of the national Governments to collect and process the information/data;
- 3) increase the capacity of national Governments to make informed decisions regarding development investments relating to sustainable utilization of natural resources;
- 4) enhance the ability of GMS national Governments to conduct integrated economic and environmental planning with relevant data; and
- 5) conduct, store, manipulate, and share actual integrated planning information using the data collected in pilot projects for some “Hotspot” areas, such as those identified in TA 5783--REG: Strategic Environmental Framework for the GMS (SEF-GMS).

## 4. Scope

SEMIS-I helped to define the core datasets and metadata format. SEMIS-II will assess the current data available and use the format to populate the core database. Such database will be valuable information for addressing the environmental issues of local or trans-boundary magnitude. Data requirements and gaps to address these issues will be identified. The project will adopt a consultative approach building on institutional bases and strengthening the existing network of users and producers of data in the GMS countries. The major components of the project include:

- 1) an assessment of currently available data for further development of sub -regional and national databases that are useful to address the cross-border issues in GMS;
- 2) review of the current mechanism for collection of identified core data within each country to determine the best approach to strengthen ongoing data collection, storage, manipulation, and transmission to other users;
- 3) capacity building through training seminars to collect appropriate and accurate data needed for planning;
- 4) develop mechanism for exchange of public domain data/information through the World Wide Web (WWW) with links to existing operational homepages;
- 5) conduct pilot application projects (case studies), such as environmental planning for energy development, using the data collected and or existing data assembled;
- 6) organize seminars/workshops to present the use and importance of information, and IE&E planning process to the authorities involved in or can influence decision making in GMS countries;
- 7) update existing GIS database and generate new sets of land cover data (coarse resolution for whole GMS, and large resolution for selected sites/SEF Hotspot areas); and
- 8) assess potential of private sector and/or NGO participation in data collection and manipulation to ensure sustainability of the project objectives after completion.

## 5. Work Program and Implementation Strategies

### 5.1 Overview

The project will be implemented jointly by the National Governments, ADB and the UNEP RRC.AP with the collaboration of Mekong River Commission (MRC). ADB will coordinate the implementation of the TA at the sub-regional level, in consultation with the UNEP RRC.AP. Duties and responsibilities of the national Governments, ADB, and the UNEP RRC.AP, including MRC collaboration are presented in Appendix-1.

The proposed implementation strategies to achieve the individual objectives of the project are presented in Table 1. It also explains the required baseline information, constraints, and timeframe for completion for each activity/strategy. However, some of the strategies may serve to achieve more than one objective.

**Table 1.** Work Program and Implementation Schedule.

No.	Objectives	Item	Activities	Baseline/Available Information	Constraints	Solution	Time frame for completion	Responsibility
1	Assess the availability of useful and relevant data for planning purposes	1.1	Compile and analyze available information at the UNEP RRC.AP, evaluate its quality, usefulness and relevance for IE&E planning. Identify information/Data gaps.	Final data sets of the SEF-GMS including Forest data, Land cover data, projects information, statistical data for the five Hotspot areas.			Mar. 2001	SEMIS Team + USGS Consultant
		1.2	Develop IE&E planning procedures and prepare supporting background papers/materials on IE&E planning process to present to GMS countries		Timely recruitment of consultant		May 2001	ADB +Team + Subcontract to International Consultant
		1.3	Organize a sub-regional meeting to present IEEDP concept, and finalize implementation strategies (No.1)	Output of item 1.2			Aug. 2001	Team
		1.4	Plan and organize meetings in each country to (a) present available information/data relevant to IEEDP planning and data gaps, and (b) seek assistance from the concern agency/ies to address the data gaps for Hotspot areas.	Output of item 1.1	Inadequacy of resources for technical and logistical support and survey works.	TA to consider provision of required financial support.	Sep. 2001	Team + NCs
2	Increase and strengthen the capacity of national Government to collect and process the information/data	2.1	Assess the capacity strengthening needs for data collection, analysis and processing. Specific information will be gathered regarding the number of persons to be trained, institution concerned and staff level. Identification of material, equipment, hardware/software and other requirements will form an integral part of assessment.	Available information obtained from participating countries.			Oct. 2001	Team + NCs

## Implementation Plan

No.	Objectives	Item	Activities	Baseline/Available Information	Constraints	Solution	Time frame for completion	Responsibility
		2.2	Develop a capacity building plan for each participating country. The plan will include the nature of training, duration, number of persons and the place where such training can be imparted. The plan will specifically target planning/finance and environment/natural resources management (NRM) agencies.	Assessment (Item 2.1).			Oct. 2001	Team + NCs
		2.3	Prepare Guidelines for data collection and data management.				August 2001	Team + Consultant
		2.4	Procurement of materials, equipment, hardware/software and other requirements.	Procurement under SEMIS-I and SEF-GMS.	Inadequate Hardware/software (HW/SW).	TA to provide financial support to procure additional HW/SW.	Nov.2001	Team
		2.5	Conduct regional training/ capacity building Training Seminars (GIS/RS) for data collection, processing and analysis targeted at environment/NRM agencies. At the end, each trained participant will be required to produce a case study for presentation at the national Training Seminars targeted at the national policy and planning agencies.	Item 2.2 and available resources	Limited resources	TA to provide financial support	Nov. 2001	Team
		2.6	Regional training seminar on IEEDP methodologies (No.2)	Output from IEEDP consultant		TA to provide financial support	Feb. 2002	Team + consultant
		2.7	Collection of information/data relevant to IEEDP and poverty-environment linkage analysis for the Hotspot area(s).	Available information in participating countries, UNEP, MRC.	Inadequacy of resources for technical and logistical support and survey works.	Provide local consultants and consider provision of required financial support.	Mar. 2002	Team + NCs + subcontract
		2.8	Translated version of Guidelines for data collection and management.	Prepared guidelines (Item 2.3)			Dec. 2001	Team

## Implementation Plan

No.	Objectives	Item	Activities	Baseline/Available Information	Constraints	Solution	Time frame for completion	Responsibility
		2.9	Establish an information/data exchange network among participating countries facilitated through the UNEP RRC.AP.	Data collected under item 2.6 above. Available data under SEF and UNEP database.			Apr. 2002	Team
		2.10	Follow -up to assist trained participants of capacity building Training Seminar (item 2.5) in data analysis and generate outputs using their own data sets.	Current state of data collection, processing and management.		Regular contacts and communication	Until Jul 2002, Contd. If necessary	Team
		2.11	Assist participating environment/NRM agencies to set up/strengthen the information/data center (as appropriate) where all relevant information/data will be stored, processed and disseminated. Assist secure an agreement between participating agencies for developing information/data sharing mechanism.	Current baseline and processed data.	Agreement on hosting the data center in participating countries.	Help secure an agreement among the participating agencies to host the data center and provide access to other agencies during the national seminar (item 3.2).	Jul. 2002	Team + NCs
3	Increase the capacity of the national Government to make informed decision regarding development investments relating to sustainable utilization of natural resources	3.1	Training study tour for national planning/finance agencies to Hotspot area(s) to study the application of IE&E planning processes and procedures.		Nomination of individuals not responsible for IEEDP planning.	Secure an agreement with the national focal point to ensure that only the concerned individuals are nominated.	Jun. 2002	Team + NCs

## Implementation Plan

No.	Objectives	Item	Activities	Baseline/Available Information	Constraints	Solution	Time frame for completion	Responsibility
		3.2	National Training Seminars conducted by the national environment/NRM agencies facilitated by the UNEP RRC.AP. The Training Seminar will include presentation of case study prepared by the national agencies demonstrating the processes and procedures of IE&E planning.	Case study completed by national environment/NRM agencies.			Jun. 2002	Team + NCs
4	Enhance the ability of GMS national Governments to conduct integrated economic and environmental planning with relevant data	4.1	National Training Seminars conducted for the national environment/NRM agencies and facilitated by the UNEP RRC.AP (Item 3.2) will also include participants from national planning/finance agencies to understand the processes and procedures of IE&E planning.	Case study completed by national environment/NRM agencies.	Inadequacy of resources for technical and logistical support and survey works.	TA to consider provision of required financial support.	Jun. 2002 (same as above)	Team + NCs
5	Conduct, store, manipulate and share actual integrated planning information using data collected in pilot projects for some Hotspot areas such as those identified in SEF for the GMS	5.1	Prepare and update of Land use/Land cover data for participating countries that serve as a baseline for future references. a) Large resolution for selected areas (HS) b) Coarse/medium resolution for GMS				Mar. 2002	Team + subcontract
		5.2	Carry out a case study on poverty - environment linkage in selected area (HVA) to demonstrate the use of spatial environmental information.	Available SEF-GMS data and other information collected.	Available SEF-GMS data insufficient for the exercise.	Additional data to be generated under the TA.	Jul. 2002	Team
		5.3	Carry out case 6 studies on IEEDP	Prepared ToR under 2 <sup>nd</sup> phase of Item 1.2	Timely recruitment of consultants by ADB		Jul. 2002	Domestic consultants
		5.4	Organize and conduct a Regional seminar targeted at national planning/finance/environment/NRM agencies to present and discuss shortcomings and further improvement for IEEDP planning process.				Aug. 2002	Team consultant +

NCs = National Project Coordinators

Team = SEMIS Team

## 5.2 Specific Objectives and Expected Outputs

Various activities are planned under each five specific objectives of project, each of them leading to specific output. These activities and outputs are presented in Table 2.

**Table 2.** Specific Objectives and Expected Outputs.

No.	Objectives	Item	Activities	Expected Outputs
1	Assess the availability of useful and relevant data for planning purposes.	1.1	Compile and analyze available information at UNEP RRC.AP, evaluate its quality, usefulness & relevance for planning purpose, and identify data gaps.	Report on the availability, accessibility and data gaps
		1.2	Develop Integrated Economic and Envi. Dev. Planning (IEEDP) procedures and prepare supporting background papers.	Inception report on IEEDP
		1.3	Organize a subregional meeting to present IEEDP concept and finalize implementation strategies	Inception workshop report (counterparts comments incorporated)
		1.4	Plan and organize meetings in each country to present available information and discuss on data gap.	Detail discussion on the project objectives emphasizing the need of environmental monitoring and information systems
2	Increase and strengthen the capacity of national Government to collect and process the information/data.	2.1	Assess the capacity strengthening needs for data collection, analysis and processing.	Report containing current status of data collection and processing capability of participating Govts. organization, personnel to be trained and level of training required.
		2.2	Develop a capacity building plan for each participating GMS country.	
		2.3	Prepare Guidelines for data collection and mgmt.	Manual on data collection guidelines and management
		2.4	Procurement of materials, equipment, hardware/software and other requirements.	Delivery and installation of hardware and software report
		2.5	Conduct regional training/ capacity building Training on data collection, processing and analysis, and presentation.	Six person (one from each country) will be trained on the use of GIS/RS and data collection/management techniques for IE&E planning
		2.6	Regional training seminar on IEEDP methodologies to the individuals who will carry out the case studies.	Trained personnel to carry out the case studies
		2.7	Collection of information/data needed for conducted poverty-environment linkage analysis.	Report on available data sets/information on Hotspot areas
		2.8	Translate data collection guidelines in local languages.	Translated version of data collection guidelines in national languages
		2.9	Establish an information/data exchange network among participating countries facilitated through UNEP RRC.AP.	SEMIS II web page on-line for information and data dissemination at the UNEP RRC.AP
		2.10	Follow-up to assist trained participants in data analysis and generate outputs.	Increased capacity of trained participants to conduct the data analysis
		2.11	Assist participating environment/NRM agencies to setup/strengthen the data center.	Agreement between different organizations to setup a data/information center within the country
3	Increase the capacity of the national Government to make informed decision regarding development investments relating sustainable utilization of natural resources.	3.1	Training study tour for national planning/finance agencies to hot spot areas.	Increased awareness of decision makers on the transboundary issues of GMS countries
		3.2	Facilitate National Training Seminars conducted by national agencies to present their work on IEEDP to line agencies.	Establishment of an informed decision-making process
4	Enhance the ability of GMS national governments to conduct IEEDP with relevant data.	4.1	Ensure representation of planning and finance agencies in the National Training Seminars.	

## Implementation Plan

No.	Objectives	Item	Activities	Expected Outputs
5	Conduct, store, manipulate and share actual integrated planning information using data collected in pilot projects for some hotspot areas such as those identified in SEF for the GMS.	5.1	Prepare and update of Land use/Land cover data a) large resolution for hot spot areas b) coarse resolution for subregion.	Land cover map of GMS (1:250K), and GIS database of Hotspot areas (1:50K)
		5.2	Carry out case study on GIS-based poverty-environment linkage in selected areas (hotspot areas).	One case-study report on poverty-environment linkage using spatial information
		5.3	Carry out case studies on IEEDP, and GIS-based poverty-environment linkage in one hotspot.	7 IEEDP case studies technical reports 1 poverty-environment case study report
		5.4	Organize and conduct a Regional Conference to present and discuss shortcomings and further improvement for IEEDP planning process.	Presentation of case studies and Identification of shortcomings and future strategies for enabling GMS countries to make informed decisions

## 6. Outputs/Milestones

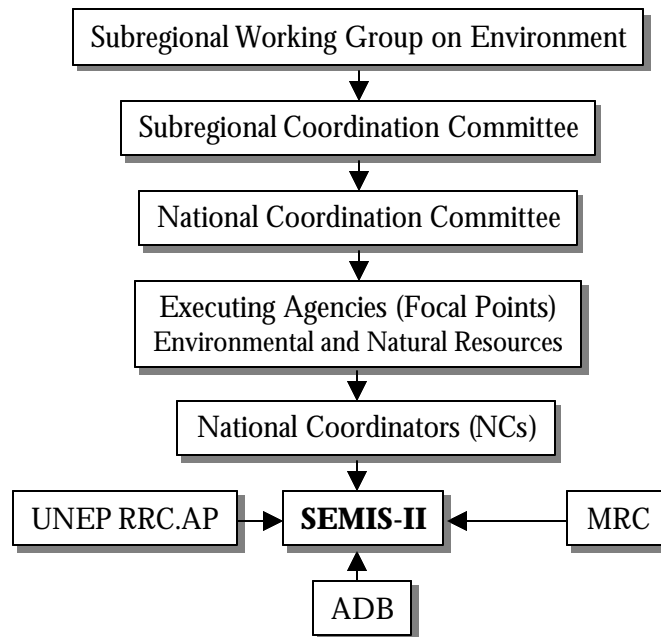
The details on the expected completion date of each activity are presented earlier in Table 1. However, a summary of major outputs and milestones are presented below (Table 3). Appendix-2 presents detail activities and assumptions for each of the outputs as presented in Table 2. Similarly, the detail work plan and schedule are presented in Appendix 3.

**Table 3.** Outputs and Target Dates.

Output	Product	Target Date
1	<ul style="list-style-type: none"> <li>Report on the availability, accessibility and usefulness of available data and data gaps</li> </ul>	Apr. 2001
2	<ul style="list-style-type: none"> <li>Inception report on IEEDP (concepts/backgrounds)</li> <li>IEEDP Manuals and detail ToR for case studies</li> </ul>	Aug. 2001
3	<ul style="list-style-type: none"> <li>Report on current status of data collection and processing capability of participating organization, hardware/software needs, and personnel to be trained</li> </ul>	Feb. 2002 Oct. 2001
4	<ul style="list-style-type: none"> <li>Guidelines for effective data collection and data management</li> <li>Translated versions</li> </ul>	Aug. 2001 Dec 2001
5	<ul style="list-style-type: none"> <li>Report on completion of delivery and installation of hardware and software in the countries</li> </ul>	Dec. 2001
6	<ul style="list-style-type: none"> <li>Report on training on GIS, RS, database and information technology for six national coordinators or designated personnel</li> </ul>	Dec. 2001
7	<ul style="list-style-type: none"> <li>Report on one sub-regional and national information networks operational through Intranet</li> <li>SEMIS web-page on-line</li> </ul>	May 2002 May 2001 - contd.
8	<ul style="list-style-type: none"> <li>Report on the study tour of national coordinators</li> </ul>	Jun. 2002
9	<ul style="list-style-type: none"> <li>GIS database of "Hotspot" areas (1:50K), wherever possible</li> </ul>	Apr. 2002
10	<ul style="list-style-type: none"> <li>Baseline data for GMS (1:250-500K scale), wherever possible</li> </ul>	Apr. 2002
11	<ul style="list-style-type: none"> <li>Case studies technical reports: 6 on IEEDP and 1 on GIS-based poverty-envi. linkage</li> </ul>	Sep. 2002
12	<ul style="list-style-type: none"> <li>Reports on sub-regional and national workshops</li> </ul>	As required (Table 5)
13	<ul style="list-style-type: none"> <li>Project reporting and management</li> </ul>	

## 7. Organizational Arrangements

The ADB is implementing and the UNEP RRC.AP are executing the project together with GMS countries with collaboration of MRC. The Executing Agencies will be the Environmental or Natural Resource agencies identified as Focal Points (FC) by the National Coordinating Committees in each GMS country, reporting to the National Subregional Coordinating Committees established for SEMIS-I, and in consultation with ADB and UNEP RRC.AP. The Executing Agencies will appoint National Project Coordinators (NCs) as the key personnel to interact with subregional institutions and Consultants appointed under the TA following the guidelines proposed at the subregional consultative meeting (Fig. 1). The linkage between the focal points and subregional organizations will be developed through electronic data transfer mechanisms, regular meetings, and newsletters. The executing agencies are will be responsible for ensuring the sustainability of the systems developed under the TA.



**Figure1.** Organizational Arrangements for Implementation.

The full-time SEMIS Coordinator will be appointed and financed by the UNEP RRC.AP. Two full-time administrative/research assistants, financed under the ADB grant, will support the coordinator in carrying out day-to-day TA activities. The GMS counterpart team members will each provide about six person-months input from their home offices for production of digitized data sets. International and domestic consultants hired and financed by ADB will support the SEMIS team. Information on the composition of SEMIS project team, their names and positions and presented in Appendix 4. List of national focal points and national coordinators are presented in Appendix-5 and 6, respectively.

## 8. Project Implementation and Management

### 8.1 Project Phases

The project activities will be carried out and concluded in three main phases, namely Inception, Implementation, and Concluding phase.

#### 8.1.1 Inception Phase

The main activities during the inception phase are to establish a project office at the UNEP RRC.AP with supporting staff; prepare a position paper on the availability, accessibility and usefulness of available data and data gaps; and to finalize the detailed planning of the project. The inception phase nine months and will be completed in April 2001 after holding a subregional consultative meeting/workshop for detail discussion on the implementation activities with the counterparts to agree on the implementation strategies. The outcome of the meeting will be presented as an Inception report.

#### 8.1.2 Implementation Phase

The Implementation phase, which is the major phase of project implementation, will immediately start after the completion of Inception phase. The details on planned activities for this phase, expected outputs and milestones are presented earlier in Table 1 through 3. However, the main outputs of implementation phase will be various reports on:

- Concepts and methodologies of IEEDP planning;
- Status of data collection and processing capability of participating Government organization
- Capacity building plan - personnel to be trained and level of training required;
- Hardware/software support to the GMS countries;
- Capacity building (provide training on data collection and analysis);
- Selected GIS data generation for Hotspot areas;
- Web-page on-line for information data dissemination and data sharing/exchange;
- Case studies to demonstrate the IE&E planning methodologies; and
- Land cover data generation for the whole GMS (medium-coarse resolution), and hotspot areas (high resolution).

It is also expected that the project would contribute towards raising awareness of the GMS planners and decision-makers on the use of information, environmental data in particular, in economic or development planning in the GMS region, and share the information among the countries. Several national and subregional workshops will be organized not only to know the state-of-the-art situation on data collection, use, and sharing but also to disseminate the information and facilitate dialogues between participating countries on the issues of trans-boundary importance and mutual interest.

#### 8.1.3 Concluding Phase

This phase will follow the Implementation phase. The major activities planned for this phase are: 1) prepare the draft final report; 2) hold a sub-regional seminar for presenting draft final report for comments and feedback; and 3) finalize the report.

## 8.2 Personnel Time Allocation

There will be three full time project staff: Project Coordinator, Research Associate, and Administrative Assistant based at UNEP RRC.AP for the whole project period (Table 4). Two categories of International Consultants will assist in the project activities. IEEDP experts will prepare the concept/background papers, and the manual on IEEDP (ToR and work schedule attached in the Annex -8). The consultant under USGS secondment will help to review the available data set and their usefulness.

The Domestic consultants will be hired to carry out the case studies to demonstrate the application of IEEDP based on the ToR developed by the international consultant on IEEDP. The arrangements also include that six National Counterparts, one from each country, will contribute to project activities equivalent to 6 person-months each while based at their respective home countries.

**Table 4** Personnel Time Allocation.

Position	Person-months	Remarks
A. Project Staff		
• Project Coordinator	24	Fulfilled
• Research Associate	24	Fulfilled
• Administrative Staff	24	To be hired
B. Consultants		
• International Consultant (IEEDP)	6	To be hired
• International Consultant – (spatial data)	2	USGS secondment
• Domestic Consultants	12	To be hired
C. National Counterparts	36	(in-kind support)

## 8.3 Reporting

The SEMIS team will submit the reports as required, such as (i) Inception report, (ii) Interim report, (iii) Final report, (iv) Bi-monthly progress reports, and (v) Meeting/Workshop proceedings and Discussion records (Table 5).

**Table 5.** Reporting Schedule.

Report	Deadline
Implementation Plan	Jan 2001
Inception Report	Sep 2001
Progress Reports	Bi-monthly
Activities Report	Upon completion of each activity
Interim Report	Dec 2001
Draft Final Report	Oct 2002
Meeting/Workshop Reports	As required

There will be also deliverables including Output reports as outlined in Table in Table 3. Besides these output reports, the deliverables include:

- A web-page on-line at subregional level for wider dissemination of information including data
- CD-ROM production containing project reports, datasets, case studies reports, and other documents, such as SoE at the end of project completion.

### **8.4 Current Status**

The Asian Development Bank approved SEMIS-II in December 1999. The ADB and the UNEP RRC.AP signed a *Letter of Agreement* in February 2000 (Appendix-7). As of August 2001, the UNEP RRC.AP has already established a project office at AIT and recruited the staff. A consultant (Mr. Michael Starbuck) is seconded by United States Geological Survey (USGS) through ADB and is on 2-month TDY at the UNEP RRC.AP starting 30 January 2001. The TORs for the consultants are given in Appendix-8 including one for USGS consultant. IEEDP Consultant is hired and he has submitted an Inception report. The schedule of scope of services of the Consultants is presented in Appendix-9, and the period of services is presented in Table 4.

## 9. Budget and Cash Flow

ADB is financing and administering US\$600,000 for the implementation of SEMIS-II. UNEP RRC.AP is providing US\$150,000 in-kind support for the implementation of the project. Six National Governments are providing an equivalent of US\$150,000 in-kind support (Table 6). The detail annual cash flow estimates are presented in Appendix -10.

**Table 6.** Cost Estimates and Financing Plan.

*(in thousand US\$)*

Item	ADB	UNEP RRC.AP	Govt.	Total
1. Staff Resource/Consultants				
a. Remuneration and Per Diem				
i. International Consultants	90	0	0	90
ii. Domestic Consultants	50	10	0	60
iii. Coordinator	0	60	0	60
iv. Government Counterpart	0	0	100	100
b. International and Local Travel	30	0		30
c. Reports and Communications	5	10		15
2. Equipment (including HW/SF)	45	0	0	45
3. Training, Seminars, and Conferences				
a. Facilitators	10	0	0	10
b. Training Program/Internship	50	10	0	60
4. Satellite imageries and field verification	190	50	0	240
5. Miscellaneous Administration and Support Costs (including assistants)	50	10	50	110
6. Subregional/National workshops	80	0	0	80
<b>Total</b>	<b>600</b>	<b>150</b>	<b>150</b>	<b>900</b>

Note: Previously proposed budget was for 3 subregional and 6 national seminar/workshops. Current revision proposes 2 subregional workshops, 12 national workshops and one training study tour. Thus additional budget (approx. US\$ 30,000) be added/adjusted to accomplish revised undertakings

## Appendices

## **Appendix – 1: Duties and Responsibilities of the National Governments, ADB, and the UNEP RRC.AP**

This section describes the major duties and responsibilities of ADB, UNEP RRC.AP and the National Governments.

### **National Governments:**

1. The national government will designate an appropriate ministry to act as the focal point and the executing agency to implement SEMIS-II project. The government will also appoint a project coordinator as the key personnel to interact with sub-regional institutions and consultants appointed under the Technical Assistance. For continuity of project implementation, it would be helpful if the focal person or project coordinator of SEMIS-I will be re-designated as SEMIS-II project coordinator;
2. Nominate the project coordinator or Government representative with qualifications and experience satisfactory to the ADB to participate in the one-month internship-cum-training. The trainee will then provide about six-person months input from his home office for production of digitized data sets;
3. Make in-kind contribution in the form of office space, local travel, remuneration of counterpart and supporting staff, cost of data acquisition, office facilities and utilities, and use of available equipment and all data;
4. Ensure the sustainability of the systems (i.e. electronic data transfer mechanisms) developed under the Technical Assistance;
5. Provide the consultants and ADB staff assigned/engaged under the TA with the usual privileges, exemptions and immunities conferred upon experts performing missions for the ADB, as provided in the Agreement Establishing the Asian Development Bank; and
6. The Chief of the ADB's Office of Environment and Social Development will henceforth be responsible for all matters pertaining to the implementation of the Technical Assistance on behalf of the ADB. All communications on this matter may therefore, be addressed to him.

### **Asian Development Bank (ADB):**

1. The Asian Development Bank is implementing the project in collaboration with UNEP RRC.AP.
2. The ADB will engage and finance the following international, regional and domestic consultants: an international integrated economic-and-environmental development planning specialist (4 person-months), a regional development engineering specialist (2 person-months), a regional natural resource management specialist (2 person-month), and a domestic energy and environment specialist (2 person months);
3. The ADB will finance two full-time administrative/research assistants and their travel cost, who will support the SEMIS Coordinator in carrying out day-to-day technical assistance activities;
4. The ADB will cover travel expenses of the SEMIS Project Coordinator hired and financed by UNEP RRC.AP.
5. The ADB will finance the participation of the GMS counterpart team members in a one-month internship-cum-training. Cost of participation will be provided to UNEP RRC.AP in advance that includes travel, per diem and miscellaneous travel allowance of the participants.

6. The ADB will monitor and periodically review the progress of TA implementation through (i) quarterly progress reports; and (ii) at least three review missions, particularly to review the inception, interim and draft final reports of the study.
7. The ADB will be responsible for procurement of equipment and materials including computers, software, satellite imageries, maps, and field verification equipments etc. required under the TA. UNEP RRC.AP will assist the ADB during the procurement.
8. The ADB will communicate with the national Governments to ensure their full participation and collaboration in the project. The ADB will also communicate with their Resident Missions in each country to help facilitate successful implementation of the project.
9. The ADB will help explain the TA scope, objectives, outputs and activities, if deemed necessary, while preparing the inception report.
10. On behalf of the ADB, Mr. Tahir Qadri, Senior Environmental Specialist, Environment Division of the Office of Environment and Social Development, will act as the authorized representative of the ADB with respect to the TA.

### **UNEP RRC.AP:**

1. UNEP RRC.AP will assist in the implementation of the project in collaboration with the ADB;
2. Administer its TA contribution of US\$150,000 equivalent;
3. Hire and finance a full-time SEMIS coordinator who will be responsible for overall coordination of SEMIS-II activities;
4. Hire two full time administrative & research assistant financed by ADB;
5. Provide overall guidance and quality control of the project.
6. UNEP RRC.AP, through the SEMIS-II team, will prepare a detailed work program for approval by the ADB. It will also undertake other initial activities to prepare for regional Technical Assistance implementation.
7. Organize a one-month training-cum-internship program for at least six participants from GMS countries, and provide training facilities and trainers.
8. Assist the ADB in the procurement of equipment and materials required for the TA in accordance with the ADB's Guidelines for Procurement.
9. Through the SEMIS team, undertake data acquisition, data analysis and mapping in selected GMS areas.
10. Prepare reports, such as Inception report, Interim report, draft final report, quarterly progress reports, training-cum-internship report and meeting proceedings and submit to the Bank.
11. On behalf of UNEP RRC.AP, Surendra Shrestha, Director of UNEP RRC.AP, Asian Institute of Technology, will act as the authorized representative with respect to the Technical Assistance.

### **MRC's Role and Collaboration in SEMIS-II:**

1. MRC will be invited to the meetings/workshops and be provided copies of project documents.
2. MRC will share/provide data and information for the use in SEMIS-II related activities.
3. The data/information generated and collected under SEMIS-II will also be shared/provided to MRC if MRC wants to .
4. Explore/conduct other joint-undertakings within the framework of SEMIS-II, such as trainings. For example, MRC staff can avail of the opportunity to attend the training sessions organized by SEMIS-II team but with their own resources.

## **Appendix - 2: Output, Activities, and Assumptions**

### **General Assumptions**

The followings are the assumptions that are general to all the outputs.

- Participating countries will cooperate, actively participate and provide anticipated counterpart contributions;
- Partner organizations will cooperate and invest resources as planned;
- Participating countries will help arrange visa, organize meetings and workshops;
- Participating countries assist in the importation of hardware and software in the country;
- Participating countries actively participate during field data collection;
- Countries will provide appropriate delegates to the workshops and trainings; and
- Institutions in the countries willing to provide/share the information/data they are holding and to participate in the network.

**Output 1: AVAILABLE DATA AND DATA GAPS**

**DESCRIPTION:**

Identification of data needs and assessment of available data will provide a mechanism to identify data gaps, if any. Available data will be put together into the core database for dissemination on the intranet.

**ACTIVITIES:**

1. Review SEMIS-I and SEF-GMS outputs;
2. Identification of critical datasets necessary for quantitative analysis;
3. Inventory/review of available datasets;
4. Identification of data gaps;
5. Prepare a position paper on the availability, and accessibility of available data together with data gaps; and
6. Finalization of the position paper through consultation.

**PRODUCT:**

- A report on the availability and accessibility of available data and data gaps

**ASSUMPTIONS:**

- NCs will provide information on national data holdings on time.

**Output 2: IEEDP PLANNING PROCEDURES AND BACKGROUND PAPERS****DESCRIPTION:**

Since the integrated economic and environmental planning (IEEDP) is important component of sustainable development, understanding of IEEDP and the procedures is necessary. Techniques and procedures of IEEDP in the context of GMS will be developed to present to the concerned organizations/agencies of the participating countries. This will help the people involved in planning and decision making to better understand and use appropriate procedure of IEEDP.

**ACTIVITIES:**

1. Review of concepts and available procedures of IEEDP.
2. Review and collection of background materials/documents on IEEDP.

**PRODUCT:**

- Inception report (concepts/background/needs)
- Interim report (ToR for case studies)
- Final report (Integrated report, and case study)

**ASSUMPTIONS:**

- Timely recruitment of IEEDP consultant.

**Output 3: CAPACITY BUILDING PLAN ON HARDWARE/SOFTWARE SUPPORT AND TRAINING NEEDED**

**DESCRIPTION:**

Appropriate data collection, information processing is necessary to make use of the collected information. This is only achieved by having the trained personnel in the technologies and the planning approach. Current status of GMS Govts./participating organizations on data handling, existing trained manpower will be assessed to plan for additional trainings and computing facilities.

**ACTIVITIES:**

1. Review the existing capabilities and trained personnel under previous projects, such as SEMIS, SEF-GMS;
2. Prepare a capacity building plan for additional training, hardware/ software requirements;

**PRODUCT:**

- A report on nature of training, duration, number of persons to be trained in participating organizations of each country.

**ASSUMPTIONS:**

- National Coordinators provide the information as required.

**Output 4: GUIDELINES FOR DATA COLLECTION AND DATA MANAGEMENT**

**DESCRIPTION:**

Best approach to strengthen on-going data collection, manipulation, storage and transmission mechanism will be suggested. National coordinators after the training-cum-internship are expected to be involved heavily in actual data collection processes for “Hotspot” areas and case studies.

**ACTIVITIES:**

1. Review the existing capabilities in data collection, manipulation, storage and transmission;
2. Prepare a guideline for effective data collection and data management; and
3. Seek involvement of NCs in the data collection for identified “Hotspot” areas and case studies.

**PRODUCT:**

- A report on Guidelines for data collection and data management.

**ASSUMPTIONS:**

- NCs available for actual data collection in “Hotspot” and case study areas.

**Output 5:    **HARDWARE AND SOFTWARE SUPPORT******DESCRIPTION**

As a part of capacity building process, hardware and software needs of the countries will be identified through consultations with the national focal points in each countries. Procurement of hardware and software will be facilitated by the UNEP RRC.AP that will be used for training-cum-internship and subsequently provided to the countries. It is envisioned that one set of hardware/software and available data would be provided to all participating countries.

**ACTIVITIES**

1. Procurement of one set hardware for each country;
2. Purchase of the latest version of Arc/Info, ArcView, Imagine, and Netscape software; and
3. Installation of hardware and software followed by training-cum-internship

**PRODUCT**

- Hardware and software needs evaluation report; and
- Delivery and installation of hardware and software report.

**ASSUMPTIONS**

- Input from the national Governments in identifying actual need of hardware and software.
- Help received from the Governments during custom clearance and installation.

**Output 6: INTERNSHIP-CUM-TRAINING FOR SIX NATIONAL COORDINATORS****DESCRIPTION**

Internship at the UNEP RRC.AP for the GMS countries has been a successful experience. The trainees together with their counterparts share both formal and informal instructions. Beside training and hands-on exercise on the use of latest technology, they also get to know colleagues from other countries. This has in the past proved to be one of the key factors to sustainability in a sub-regional network.

**ACTIVITIES**

1. Develop training -cum-internship objectives and approach;
2. Develop training -cum-internship materials and examples;
3. Identification and selection of six participants for one-month long training-cum-internship;
4. Organize the training-cum-internship program at the UNEP RRC.AP office in Bangkok that includes lecture, hands-on exercise, field exercise; and
5. Follow-up through E-mail and country visits.

**PRODUCT**

- Training to six NCs or designated persons by concerned organization; and
- Training summary report.

**ASSUMPTIONS**

- Suitable trainees (candidates) provided by the Governments; and
- Trainees use acquired skills regularly in their jobs

**Output 7: ENHANCEMENT OF A SUB-REGIONAL NETWORK****DESCRIPTION**

There are six nodes in the network. Each node is coordinated by the National Coordinators (NCs). All the NCs will be together at the internship-cum-training program. They will be sharing and utilizing common tools for communication and dissemination, i.e. Internet and WWW. It is expected that there will be active exchange of data and information utilizing the network and these tools.

**ACTIVITIES**

1. Review of SEMIS-I outputs and implementation;
2. Review of existing and planned information management initiatives in the sub -region (if any);
3. Review existing sub -regional information management strategy and sub-regional network strategy;
4. Review agreements on the sub -regional information exchange mechanism;
5. Enhance and operationalize a sub -regional information network for utilizing national and subregional database through Intranet; and
6. Prepare a SEMIS-II web page and CD.

**PRODUCT:**

- Draft GMS information sharing strategy; and
- SEMIS web -page on-line and operational Intranet.

**ASSUMPTIONS:**

- Cooperation and support from the national Governments received on time.

## **Output 8: STUDY TOUR OF NATIONAL PLANNING/FINANCE PERSONNEL**

### **DESCRIPTION**

On-location visit to the selected Hotspot areas for case studies by the personnel involved in national executing agencies and/or planning and finance agencies would not only let them accumulate first hand experiences in using the data/information in planning but also provide a platform to interact with fellow GMS members on issues of mutual interest.

### **ACTIVITIES**

1. Nomination and confirmation of participants from national agencies
2. Develop study tour programs and schedule
3. Organize study tour

### **PRODUCT:**

- Increase capacity of Government personnel to make informed decisions and better plans

### **ASSUMPTIONS:**

- Cooperation and support from the national Governments received on time
- Nomination of relevant personnel

**Output 9: “HOTSPOT” DATABASE (1:50K).****DESCRIPTION:**

Strategic Environmental Framework for Greater Mekong Sub -region (SEF-GMS) project documents describe “Hotspot” areas as:

*a geographically defined and functionally characterized forest, grassland, wetland, coastal, or marine ecosystem or ecosystem cluster that is relatively intact and functioning well, and is at the same time threatened by ADB/GMS planned/funded projects or unplanned activities.*

Through consultation with the national counterpart agencies, six “Hotspot” areas are identified under SEF-GMS for detailed investigation. In close cooperation with the SEF-GMS project team, both biophysical and socioeconomic database of these “Hotspot” areas will be prepared using GIS and remote sensing techniques.

**ACTIVITIES:**

1. Maps and data collection through national coordinators;
2. Maps and data collection from MRC, and UNEP RRC.AP database;
3. Data automation (digitizing, scanning etc.) with the help of interns;
4. Preparation of a GIS database including both biophysical and socioeconomic data sets at the scale of 1:50,000 scale;
5. Satellite data acquisition in “Hotspot” areas (Landsat, SPOT or IRS LISS);
6. Preprocessing of the satellite data;
7. Secondary and Field data collection needed for satellite data interpretation;
8. Classification of the satellite data; and
9. Map production and Report writing.

**PRODUCT:**

- GIS database of “Hotspot” areas (1:50K)

**ASSUMPTIONS:**

- Timely availability of satellite data; and
- Accessibility of GIS data available in the national and sub-regional organizations.

**Output 10: BASELINE DATA OF GMS (1:250-500K)**

**DESCRIPTION:**

Most recent satellite imageries will be acquired and analyzed to produce the latest land use/land cover map of GMS. The land use/land cover map produced is expected to be useful for many projects in GMS.

**ACTIVITIES:**

1. Acquisition of IRS WIFS and/or MODIS data;
2. Pre-processing of satellite data;
3. Field visits of the selected sites;
4. Classification of satellite data;
5. Map production; and
6. Report writing

**PRODUCT:**

- Land cover map of GMS at 1:250-500K scale with the following features: major forest types (evergreen, deciduous, shrubs, open and closed), crop land, barren land, grass land, ice and snow, water bodies (rivers, lakes and reservoirs), urban areas, and major roads.

**ASSUMPTIONS:**

- Timely availability of satellite data; and
- Availability of secondary data and ground truth information from NCs.

**Output 11: CASE STUDIES****DESCRIPTION:**

Case studies will be conducted in the selected sites in GMS countries, most probably in the HVA/Hotspot areas as identified under SEF-GMS. Six case studies in each country will be conducted to demonstrate the application of integrated economic and environmental planning procedures. One more case study will be carried out to demonstrate the use of environmental spatial information using GIS for poverty-environment linkage.

**ACTIVITIES:**

1. Develop detail ToR for case studies (to be completed by international consultant);
2. Training on the IEEDP methodology to carry out the case study;
3. Spatial data collection; and
4. Carry out case studies.

**PRODUCT:**

- Case study technical report

**ASSUMPTIONS:**

- Timely recruitment of international and domestic consultants;
- Timely completion of ToR for case studies
- Active involvement and support of NCs, private sector and NGOs in collecting data in case study areas; and
- Availability of SEF-GMS project database.

**Output 12: SUB-REGIONAL AND NATIONAL TRAINING/SEMINARS/WORKSHOPS AND STUDY TOURS**

**DESCRIPTION**

Sub-regional workshops are needed for consultation and to seek advice from the national Governments. It is also necessary to finalize the project implementation plan, to monitor the progress and to present the outcome of the project. National workshops will be organized in six countries to increase involvement of participating organizations in collecting, processing data and disseminating the results. It also provides the opportunities to explore potential of private sector and NGO's involvement in economic and environmental planning process besides help strengthen the network.

**ACTIVITIES:**

**1. Sub-regional workshops**

- Communicate with the countries and decide the date and venue of the training/seminars/workshops;
- Prepare background papers;
- Discuss on current situation of data availability, accessibility, techniques of data collection and analysis;
- Disseminate the results, evaluate achievements, identify shortcomings, and suggest improvement strategies for future.

**2. National workshops**

- Communicate with the countries and decide the date and venue of the meetings/seminars/workshops;
- Prepare background information;
- Present IE&E planning process, present available data/information, guide data collection and analysis; and
- Disseminate planning process to wider community (organizations/departments).

**PRODUCT:**

- Two sub -regional workshop reports; and
- Twelve national workshop reports.

**ASSUMPTIONS:**

- Co operation from the host country ensured.

**Output 13: PROJECT REPORTING AND MANAGEMENT****DESCRIPTION**

The ADB has reporting requirements on a regular basis. Reporting requirements of the ADB will be followed as explained in detail in section 8.4. Project reporting and management will be done from the SEMIS project office at UNEP RRC.AP, AIT.

**ACTIVITIES**

1. Establish a project office at AIT;
2. Hiring of staff;
3. Prepare a draft inception report;
4. Finalization of Inception report;
5. Prepare Interim report;
6. Prepare a draft final report;
7. Prepare quarterly progress reports; and meeting reports

**PRODUCT**

- Inception, Interim and draft final report;
- Quarterly progress reports; and
- Meeting reports.

**ASSUMPTIONS**

- Reports produced on schedule

**Appendix-3: Work Plan and Schedule**

Activity Item	Sub-activities	Month																								
		Aug 2000	...	Jan 2001	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
1.1	1.1.1	Review of SEF-GMS and SEMIS-I data sets			X	X																				
	1.1.2	Identify critical dataset necessary for planning purposes			X	X																				
	1.1.3	Identification of data gaps				X																				
	1.1.4	Prepare a position paper/report					X																			
1.2	1.2.1	Recruitment of Int. consultant on IEEDP					X	X	X	X	X															
	1.2.2	Review of SEF-GMS and SEMIS-I reports on IE&E									X															
	1.2.3	Preparation of background papers including IE&E concepts, planning processes and procedures										X														
1.3	1.3.1	Hold sub-regional workshop										X														
	1.3.2	Hold national meetings/workshops											X													
	1.3.3	Reporting												X												
2.1	2.1.1	Assessment of existing capabilities of national agencies												X												
	2.1.2	Identify the training needs and HW/SW and other equipments required													X											
2.2	2.2.1	Identification of participants from each GMS countries													X											
	2.2.2	Develop training course materials and programs													X											
2.3	2.3.1	Prepare guidelines for data collection and data management based on the review (item 1.1)						X	X	X	X	X														
	2.3.2	Distribute guidelines and orientation to each national coordinators														X										
2.4	2.4.1	Place order and procurement of HW/SF & equipments based on item 2.1.2											X													
2.5	2.5.1	Installation of HW/SW and delivery													X											
	2.5.2	Conduct regional training seminar on data collection, input and analysis														X										

## Implementation Plan

Activity Item	Sub-activities	Month																								
		Aug 2000	...	Jan 2001	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 01	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
2.6	2.6.1																									
	2.6.2																									
2.7	2.7.1																									
	2.7.2																									
	2.7.3																									
2.8	2.8.1																									
2.9	2.9.1																									
	2.9.2																									
	2.9.3																									
	2.9.4																									
	2.9.5																									
2.10	2.10.1																									
2.11	2.11.1																									
	2.11.2																									
	2.11.3																									
3.1	3.1.1																									
	3.1.2																									
	3.1.3																									



## Appendix - 4: SEMIS Project Team and Team Composition

Project team	Remarks
<b>UNEP RRC.AP</b> Project Coordinator Research Associate Administrative Assistant	Fulfilled Fulfilled To be hired
<b>National Governments</b> National Coordinators and National Counterparts 1. Cambodia 2. Laos 3. Myanmar 4. Thailand 5. Vietnam 6. Yunan (China)	Nominated Nominated Nominated Nominated Nominated Nominated
<b>Consultants</b> International consultants Domestic consultants	Hiring in process Based on needs, to be identified for hiring by consultation with national focal points and coordinators

**Appendix - 5: National Focal Points**

<p><b>CAMBODIA</b></p> <p>HE Mok Mareth Minister, Ministry of Environment 48 Samdech Preah Sihanouk St Phnom Penh, Cambodia Tel.: 855-23-427894, mob 017 20-2874, 015-91-2874 Fax: 855-23-427844 855-23-215925</p>	<p><b>PEOPLE'S REPUBLIC OF CHINA</b></p> <p>Mr. Liu Chunyu Director, Foreign Economic Cooperation Office National Environmental Protection Agency 115 Nanxiaojie, Xizhimennei Beijing 100035, PR China Tel.: 86-10-6616-5635 Fax: 86-10-6615-1776</p>
<p><b>LAO PDR</b></p> <p>Mr. Phonechaleun Nonthaxay Head of Policy Division Science Technology and Environment Organization P. O. Box 2279, Vientiane Lao PDR Tel.: 856-21-213470 Fax: 856-21-213472</p>	<p><b>THAILAND</b></p> <p>Dr. Monthip Tabucanon Deputy Director General Dept. of Environmental Quality Promotion (DEQP) Ministry of Science, Technology and Environment 60/1 Soi Phiboon Watana 7, Rama VI Rd., Bangkok 10400, Thailand Tel.: 662-279 8552 Fax: 662-298 6065 E-mail: monthip@deqp.go.th</p>
<p><b>MYANMAR</b></p> <p>U Phae Thann Oo Joint Secretary National Commission for Environmental Affairs 37 Thantaman Road, Dagon Township Yangon, Myanmar Tel.: 951-221-535 Fax: 951-221-546</p>	<p><b>VIETNAM</b></p> <p>Dr. Nguyen Ngoc Sinh Director General, National Environmental Agency Ministry of Science, Technology and Environment 39 Tran Hung Dao Street Hanoi, Vietnam Tel.: 84 4-822-8750 or 826-2517 Fax: 844-9342123, 825-1518, 825-2733 E-mail: nsinh@nea.gov.vn</p>

**Appendix - 6: List of National Coordinators**

<p><b>CAMBODIA</b></p> <p>Mr. Chuon Chanrithy Deputy Director Department of Natural Resources Ministry of Environment 48 Samdech Preah Sihanouk St Phnom Penh, Cambodia Tel.: 855-23-427894, mob 017 20-2874, 015-91-2874 Fax: 855-23-427844 E-mail: 012893001@mobitel.com.kh</p>	<p><b>THAILAND</b></p> <p>Mrs. Malee Hutacharoen Senior Environmental Officer Environmental Information Division Department of Environmental Quality Promotion (DEQP) Ministry of Science, Technology and Environment 60/1 Soi Phiboon Watana 7, Rama VI Rd., Bangkok 10400, Thailand Tel.: 662-617 2766 Fax: 662-298 6038 E-mail: maleeh@deqp.go.th</p>
<p><b>LAO P.D.R.</b></p> <p>Mr. Singsavanh Singkavongxay Head of Environmental Database Center Science, Technology and Environment Agency (STEA) P. O. Box 2279, Vientiane, Lao P.D.R. Tel: (856-21) 213470 Fax: (856-21) 213472 Email: somphone@steno.gov.la</p>	<p><b>VIETNAM</b></p> <p>Ms. Duong Thi To Director, Database Management Div. National Environmental Agency (NEA) Ministry of Science, Technology and Environment, Vietnam Tel: 084-8260781, 090-257857 (cellular) Fax: 084-9342123 Email: duyto@nea.gov.vn duyto@svr1-han.unep.net</p>
<p><b>MYANMAR</b></p> <p>Ms. Daw Htwe Nyo Nyo Assistant Director National Commission for Environmental Affairs (NCEA) 37 Thantaman Road, Dagon Township Yangon, Myanmar Tel.: 951-221-535 Fax: (95-1) 221546 Email: env.myan@mptmail.net.mm</p>	<p><b>YUNAN (CHINA)</b></p> <p>Mr. Xiao Xuezi Foreign Economic Cooperation Office State Environmental Protection Administration No.115, Xizhimennei Nanxiaojie Beijing 100035, China E-mail: <a href="mailto:nfeco@public.bta.net.cn">nfeco@public.bta.net.cn</a> Tel.: (86-10) 66151792 (direct) 66153366 ext. 5518 or 5520 Fax: (86-10)66151776</p>

## **Appendix - 7: Letter of Agreement between ADB and UNEP RRC.AP**

### **ASIAN DEVELOPMENT BANK**

16 February 2000

**Mr. Surendra Shrestha**

Regional Coordinator

United Nations Environment Programme Regional Resource Centre for Asia and the Pacific,  
AIT, Bangkok, Thailand

Fax No.: (66-2) 516-2125

Dear Mr. Shrestha:

Subject: **Technical Assistance Letter Agreement for the Subregional Environmental Monitoring and Information System (SEMIS) Phase II**

1. The Asian Development Bank ("ADB") is implementing a Technical Assistance (TA) for the Subregional Environmental Monitoring and Information Systems (SEMIS) Phase II in collaboration with the United Nations Environment Programme Regional Resource Centre for Asia and the Pacific (UNEP RRC.AP).
2. The Technical Assistance is expected to complete in 2-years, commencing in January 2000 and ending in December 2001.
3. ADB proposes the following understandings in implementing the Technical Assistance with UNEP RRC.AP.

#### Undertakings of ADB

4. (a) ADB in consultation with UNEP RRC.AP will engage and finance an international consultant (4 person months) and 3 domestic consultants (2 person-months each) to provide support to the SEMIS Team.
- (b) ADB will finance two full-time administrative/research assistants hired by UNEP RRC.AP as part of the SEMIS Team, who will support the project coordinator in carrying out day-to-day Technical Assistance activities.
- (c) ADB will finance the participation of the GMS counterpart team members in a one-month internship-cum-training. Costs of participation which include travel, per diem and miscellaneous travel allowance.

#### Financing Arrangements

5. Payments in respect of the services of the two assistants. Payment will be made in advance in: two (2) instalments (together, "Advance Payment 1"), as follows:
  - (i) Within fourteen (14) days after ADB's receipt of your confirmation of this Agreement, curriculum vitae of the assistants, their appointment papers and monthly rates, ADB will transfer 50% of \$50,000 to UNEP RRC.AP through a designated project account. The second instalment of \$25,000 will be remitted not later than the third month of the second year of project implementation.

- (ii) UNEP RRC.AP will submit to ADB not later than 60 days after completion of the services of the two assistants a Certified Statement of Expenditures showing the utilization of the funds provided as Advance Payment 1. ADB reserves the right to verify the documentation (invoices and receipts) supporting the Statement of Expenditures.
  - (iii) Except as ADB may otherwise agree, any remaining balance of Advance Payment 1 upon completion of the services of the two assistants shall be reimbursed by UNEP RRC.AP within thirty (30) days after receipt by UNEP RRC.AP of demand thereof.
6. Payments in respect of the Internship will be made as follows:
- (i) Within fourteen (14) days after ADB's receipt of your confirmation of this Agreement and the cost estimates of the travel, per diem and miscellaneous travel allowance of the participants, ADB will pay an advance payment (Advance Payment 2) corresponding to the estimated costs of the Internship.
  - (ii) UNEP RRC.AP will submit to ADB not later than 60 days after completion of the Internship, a Certified Statement of Expenditures showing the utilization of the funds provided as Advance Payment 2. ADB reserves the right to verify the documentation (invoices and receipts) supporting the Statement of Expenditures.
  - (iii) Except as ADB may otherwise agree, any remaining balance of Advance Payment 2 upon completion of the services of the two assistants shall be reimbursed by UNEP RRC.AP within thirty (30) days after receipt by UNEP RRC.AP of demand thereof.

#### Undertakings of UNEP RRC.AP

- 7. (a) UNEP RRC.AP will administer its Technical Assistance contribution of US\$150,000 equivalent.
- (b) UNEP RRC.AP will hire and finance a full-time SEMIS coordinator who will be responsible for overall coordination of SEMIS-II activities. Two full-time administrative/research assistants financed by ADB will also be hired by UNEP RRC.AP.
- (c) UNEP RRC.AP, through the SEMIS team will prepare a detailed work program for approval by ADB. It will undertake other initial activities to prepare for regional Technical Assistance implementation.
- (d) UNEP RRC.AP will convene a subregional consultative meeting in the beginning of the fourth month of Technical Assistance implementation, and prepare an inception report taking into consideration recommendations from the subregional consultative meeting.
- (e) Without limiting the generality of the foregoing, UNEP RRC.AP will:
  - (i) organize a one-month training-cum-internship program for at least six participants from GMS countries, and provide the training facilities and trainers.
  - (ii) Furnish to ADB all such information concerning the Internship, and submit a final report within a month after the completion of the Internship.
  - (f) Through the SEMIS team, undertake data acquisition, data analysis and mapping in selected GMS areas.
  - (g) Prepare an interim report to be submitted to ADB during the 4<sup>th</sup> month of project implementation. Other reports to be submitted to ADB are the final report, quarterly progress reports; and meeting proceedings.

Implementation Coordination and Monitoring

8. ADB will coordinate the implementation of the Technical Assistance at the subregional level, in consultation with UNEP RRC.AP. ADB will monitor and periodically review the progress of Technical Assistance implementation through (i) quarterly progress reports; and (ii) at least three review missions, particularly to review the inception, interim and draft final reports of the study.

Procurement

9. ADB will be responsible for procurement of equipment and materials required under the Technical Assistance. However, at the request of ADB, UNEP RRC.AP will carry out procurement in accordance with *ADB's Guidelines for Procurement and Arrangement* satisfactory to ADB. Equipments to be procured include computers and software, satellite imagery and field verification equipments.
10. On behalf of ADB, Mr. Tahir Qadri, Senior Environment Specialist, Environment Division of the Office of Environment and Social Development, will act as the authorized representative with respect to the Technical Assistance. Mr. Surendra Shrestha, Director of UNEP RRC.AP will act as the authorized representative of UNEP RRC.AP.
11. Please indicate your agreement to the terms of this letter by signing and dating the form of confirmation on each of the enclosed counterparts of this Letter. One copy should then be returned to ADB; you may retain the other for your records.

Sincerely yours

ANITA KELLES-VIITANEN  
OIC, Office of environment  
And Social Development

**Confirmed:**

United Nations Environment Programme  
- Regional Resource Centre for Asia and the Pacific

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By: Authorized Signature

Date:

## **Appendix-8: Consultants' Responsibilities**

International Consultants and domestic consultants will be hired to assist in the project activities. The objective of the consultants under SEMIS-II is to demonstrate the need for cooperative data collection and sharing in order to undertake environmentally-sound development planning and implementation. The consultant team will:

- 1) develop a detailed case study work plan whereby UNEP RRC.AP and SEMIS counterparts will prepare data sets and maps for use by the consultant in undertaking the case studies;
- 2) working with GMS planning counterparts, prepare an outline (Case study) economic and environmental development plan, including delineation of development activities, mitigation, and monitoring requirements;
- 3) demonstrate application and benefits of SEMIS to sharing planning and monitoring information among GMS countries;
- 4) utilize the case studies to present a training program for key GMS development planners and environmental managers; and
- 5) identify potential opportunities for GMS Governments collaboration with the private sector for long-term implementation of SEMIS.

A special arrangement has been made through ADB for a USGS consultant to be based at RRC.AP to assist SEMIS activities for 2-months period. This secondment is the collaborative effort between USGS, ADB, and UNEP RRC.AP. The scope of services of the consultant is as follows:

### **Draft TOR for USGS Consultant**

1. Review and analyze available data/information at the UNEP RRC.AP (generated under SEF-GMS, SEMIS) to determine the usefulness and relevance for operational level development planning in GMS countries, Hotspot areas in particular.
2. Review and identify the gaps and suggest additional data/information needs that may be required for the operational level planning purposes.
3. Suggest the appropriate GMS level spatial and associate data/information and scale/format for operational level planning.
4. Assist in evaluating the status of data processing in the GMS countries and suggest personnel and material (Hardware/Software) needs to establish or strengthen the data centers, as appropriate.
5. Review the data collection and management guidelines prepared by SEMIS Team and suggest revision and refinements.
6. Assist in organizing national training seminars to be conducted in Kunming- Yunan (PRC), Vientiane- Lao PDR, Phnom Penh –Cambodia, Hanoi-Viet Nam and Bangkok-Thailand. At these seminars, make presentations on collection and processing of data/information.
7. Assist in analyzing temporal land use / land cover changes in the GMS countries.

Another international consultant will be hired as an IE&E expert. The scope of services to be provided by an IE&E expert is presented below.

**International Consultant –  
Terms of Reference (TOR) For the preparation and use of Integrated Economic and Environmental Planning (IEEDP) Manual**

**1. Background**

- 1.1 The Asian Development Bank (ADB) is implementing Technical Assistance (TA No. 5899: REG) for the Sub -regional Environmental Monitoring and Information Systems – Phase II (SEMIS II) in collaboration with United Nations Environment Program Regional Resource Centre for Asia and the Pacific (UNEP.RRC.AP) (hereafter called “UNEP”). The project is being implemented in the six Greater Mekong Subregion (GMS) countries: Cambodia, Lao PDR, Myanmar, Vietnam, Thailand, and Yunnan province of China.
- 1.2 One of the activities under the TA is to produce the manual on Integrated Economic and Environmental Planning (IEEDP) and to apply its recommended procedures to case studies in the GMS countries. Under the TA funding, Asian Development Bank wishes to engage Dr. Dariel Gunaratnam as an International Consultant to accomplish the specific tasks mentioned under the section Scope of Services below.

**2. Scope of Services:** The overall project comprises a number of tasks which are described as follows:

- 2.1 **Step 1:** Consultant will produce Inception Report (4 weeks). This will include (i) literature review and findings, (ii) need for manual to assist GMS countries, (iii) initial concept of manual and its methodology for integrating Environmental planning into Economic planning, and (iv) initial estimates of data input needs for applying manual to case studies. This will include the following:
  - 2.1.1 Review of background information pertaining to IEEDP including pertinent reports prepared to date by different agencies/individuals, including ADB, UNEP, and MRC, as related to IEEDP planning at the national and subnational level in the context of GMS countries.
  - 2.1.2 Review and compile the accomplishments under the projects, namely Sub-regional Environmental Monitoring and Information Systems I (SEMIS I, RETA: 5622), and Strategic Environment Framework (SEF, RETA: 5783) to (i) identify the lessons learned and information gaps to ensure application of IEEDP for the GMS countries, and (ii) determine prospects, potentials and nature of IEEDP in GMS.
  - 2.1.3 Review and compile accomplishments on theory/concepts/existing practices/approaches and methodology/IEEDP studies in GMS countries, and other available Developing Countries experiences.
- 2.2 **Step 2:** Consultant will present Item 2.1 at Workshop No. 1 (one day at end Month 1). DG will lead presentation.
- 2.3 **Step 3:** Consultant will produce Interim Report including (i) initial draft of manual, (ii) specifics on data needs for case studies, (iii) proposed training program for training at AIT of staff selected by UNEP on how to use manual to do case studies, and (iv) TORs for case studies including timeframes. This will include
  - 2.3.1 Manual is to be practicable for use in GMS countries

- 2.3.2 The manual will include TORs, including data requirements, methodology, reporting techniques, and implementation schedules for six case studies, one to be carried out in each GMS country.
- 2.4 **Step 4:** Consultant will conduct Workshop No. 2 to present Item 2.3 (4-5 days).
- 2.5 **Step 5:** Consultant will conduct Training Program immediately following Item 2.4.
- 2.6 **Step 6:** Following Item 2.5, Consultant will supervise/conduct one case study selected by UNEP, including field work by Consultant.
- 2.7 **Step 7:** UNEP will arrange for the other case studies to get done including field visits by UNEP staff. Consultant will guide these other studies by critiquing of case study reports furnished to Consultant by UNEP, and visiting field sites if necessary.
- 2.8 **Step 8:** Consultant will prepare a recommended IEEDP study program (for group of GMS country officials to be selected by UNEP) including places to visit, who to do at each, place, and other pertinent matters.
- 2.9 **Step 9:** Consultant will prepare Draft Final Report including final description of manual and lessons learned in its application, and submit this to ADB/UNEP for review and comments (one month to be allowed for comments).
- 2.10 **Step 10:** Consultant will conduct final Workshop No. 3 (one day) at end of Month 10 to review the Draft Final Report and result of the case studies.
- 2.11 **Step 11:** Consultant will prepare and submit Final Report (both hardcopy and electronic) at end of month 12.

**3 Role of UNEP.RRC.AP (“UNEP”):** UNEP will serve as the Coordinator for the project including liaison between the Consultant and ADB and the MRC and GMS countries. This will include:

- 3.1 Obtaining for use of reports/data/information needed by Consultant, to be obtained in timely way to Consultant’s timeframe needs for carrying out the Consultant’s tasks as noted above.
- 3.2 Administrative management of the Workshop No. 1, No. 2, and No. 3 (including costs, arranging for participants, etc.).
- 3.3 Administrative management of Training Program (including costs and including selection of trainees).
- 3.4 Assistance to GMS country teams for preparing the case studies
- 3.5 Consultant’s counterpart for Consultant’s work with UNEP will be Mr. Surendra Shrestha at the policy level and Mr. Rajendra Shrestha at the working level.

**4 Additional Notes**

- 4.1 CT’s work will be carried out primarily at UNEP’s Bangkok office, but may also work through Research assistants, and from the Home Office.
- 4.2 Consultant has no obligation for field work in GMS countries except for the one case study mentioned in Item 2.6 for which separate funds will be provided. Field services needed for the other 5 case studies are to be furnished by UNEP.
- 4.3 The manual will be designed to enable IEEDP planning (i) to cover all development sectors, and (ii) specifically the energy development sectors.

**5. Timeframe:**

Items 2.1 and 2.2:	1 month
Items 2.3, 2.4, 2.5:	4 months
Items 2.6, 2.7, 2.8, 2.9:	5 months
Allow 1 month for comments on Draft Final Report	
Items 2.10:	1 month

Total time: 1 + 4 + 5 + 1 + 1 = 12 months

**TOR for Domestic Consultants**

Number of domestic consultants will be hired who will be carrying out the IEEDP case studies and also assisting in data/information collection and gather other pertinent information. The detail ToR will be developed by International Consultant (IEEDP expert) as the part of his assignment.

**Appendix 9: Schedule for Consultant Recruitment and Scope Services**

S.N.	Activities	May 01	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 02	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>1</b>	<b>IEEDP Consultant</b>																	
1.1	Recruitment	X	X	X														
1.2	Step-1 Concept paper				X													
1.3	Workshop				X													
1.4	Step-2 Detail TOR					X	X	X	X	X								
1.5	Training workshop										X							
1.6	Step-3 Guidance/supervision											X	X	X	X	X		
<b>2</b>	<b>Domestic consultants</b>																	
2.1	Recruitment						X	X	X	X								
2.2	Training orientation										X							
2.3	Carry out case studies										X	X	X	X	X			
2.3	Presentation at regional workshop																X	

