



Nile Basin Initiative



E. Nile Technical Regional Office (ENTRO)
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Eastern Nile Watershed Management Project Cooperative Regional Assessment (CRA) for Watershed Management

EASTERN NILE WATERSHED MANAGEMENT PROGRAMME IMPLEMENTATION PLAN



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ACRONYMS AND ABBREVIATIONS

CCBO	Community-based Organization
CQ	Consultant Qualifications
CRA	Cooperative regional Assessment
DSS	Decision Support System
ENCOM	Eastern Nile Council of Ministers
ENSAP	Eastern Nile Subsidiary Action Programme
ENSAPT	Eastern Nile Subsidiary Action Programme Team
ENTRO	Eastern Nile Technical Regional Office
EN-WMP	Eastern Nile Watershed Management Programme
FAO	United Nations Food and Agriculture Organization
FMR	Financial Management Report
GEF	Global Environment Facility
GIS	Geographical Information System
IC	Individual Consultant
ICB	International Competitive Bidding
IDEN	Integrated Development of the eastern Nile
IMS	Information Management System
NBI	Nile Basin Initiative
NCB	National Competitive Bidding
NGO	Nongovernmental organization
NPO	National Project Coordinator
PIP	Project Implementation Plan
PMU	Programme Management Unit
PSC	Programme Steering Committee
QCBS	Quality & Cost-Based Selection
SAP	Subsidiary Action Program
SVP	Shared Vision Program
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services

INTRODUCTION

This Programme Implementation Plan (PIP) has been produced as an integral component of the IDEN Watershed Management Cooperative Regional Assessment (CRA). It derives from the Transboundary Analysis undertaken at both Country and Sub-basin levels, the Distributive Analysis, the Cooperative Mechanisms Analysis and the preparation of ten Project Profiles. The latter constitute the first round of Projects of Component 4 of the Eastern Nile Watershed Management Programme, the subject of this PIP.

I. The Programme

A. Programme Development Objective

Eastern Nile Subsidiary Action Programme (ENSAP): The Eastern Nile Subsidiary Action Program (ENSAP), which includes the countries of Egypt, Ethiopia, and Sudan, seeks to initiate a regional, integrated, multipurpose program through a first set of investments. Within this regional context, the Eastern Nile riparian countries decided that the objective of the first ENSAP project, referred to as the Integrated Development of the Eastern Nile (IDEN) project, was to initiate a regional, integrated, multipurpose development program that confirms tangible win-win gains and demonstrates joint action for the Eastern Nile countries. IDEN comprised the following seven components: Eastern Nile Planning Model, Baro-Akobo Multipurpose Water Resources Development, Flood Preparedness and Early Warning, Ethiopia–Sudan Transmission Interconnection, Eastern Nile Power Trade Investment, Irrigation and Drainage, and Watershed Management.

Watershed Management CRA: The recently completed first Cooperative Regional Assessment (CRA) for Watershed Management in the Eastern Nile Basin undertook a Transboundary Analysis, a Distributive Analysis and identified mechanisms for cooperation. The CRA identified the baseline conditions and provided an understanding of four Sub-basins as integrated water systems: the Baro-Sobat-White Nile, the Abbay-Blue Nile, the Tekeze-Atbara and the Main Nile from Khartoum to the Aswan High Dam. The CRA identified a programme of Direct and Supporting Interventions for sustainable watershed management. The potential impacts of these were assessed in qualitative and in some case quantitative terms at the local, national, regional and global levels.

Objectives. The immediate objective of the Eastern Nile Watershed Management Programme (EN-WMP) is to provide continued and enhanced support the sustainable watershed management of the Eastern Nile Basin in order to improve the living conditions of the people, create alternative livelihoods, enhance agricultural productivity, protect the environment and in the long term reduce sediment transport and siltation of infrastructure and prepare for sustainable development oriented investments. The overriding regional significance of this will be its contribution to enhanced food security and poverty alleviation in the region and its long term contribution to arresting degradation of the natural resource base.

B. Key Policy and Institutional Reforms Supported by the Programme

The EN-WMP supports the Eastern Nile Basin countries to develop sound approaches to sustainable watershed management at the regional and national level. The Eastern Nile countries recognize that future development of the Basin must be environmentally and socially sustainable. Identifying natural resource base and development synergies and thus sustainable development opportunities in the Eastern Basin is now a major priority. Focusing on trans-boundary issues provides

the riparian countries with a major opportunity to make significant progress towards their economic, social and environmental goals in ways that have proved difficult to achieve independently.

The policy guidelines adopted by the NBI's Council of Ministers of Water Affairs (Nile-COM) in February 1999 further define the primary objectives of the EN-WMP. These objectives are:

- To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples;
- To ensure efficient water management and the optimal use of the resources;
- To ensure cooperation and joint action between the riparian countries, seeking win-win gains;
- To target poverty eradication and promote economic integration; and
- To ensure that the program results in a move from planning to action.

C. Sector Issues addressed by the Programme and Strategic Choices

Identifying the environment, natural resources and development synergies, and thus the sustainable development opportunities in the Basin, has emerged as a major priority. More effective cooperation and coordination between the riparian countries is essential if the Eastern Nile Basin's natural resource base is to be managed in ways that help improve the quality of life of the inhabitants.

This Programme will strengthen riparian cooperation and coordination through trans-boundary activities including establishing a watershed management data and information system, monitoring of watershed management interventions, supporting erosion-sedimentation research, undertaking longer-term hydro-ecological-livelihood studies and institutional capacity building. Emphasis will be given to encouraging diverse stakeholder groups to work together, not only within their own countries but especially with counterparts in other riparian countries, as an essential contribution to building the mutual understanding, relationships and trust that will be essential to collaborative problem-solving for the Eastern Nile Basin as a whole.

D. Programme Description

Programme Components: The Eastern Nile Watershed Management Programme will provide enhanced support to sustainable watershed management activities that address the root causes of poverty of the peoples of the Basin. There are six main areas: (1) Programme Coordination, (2) establishing a watershed management data and information system, (3) establishing and undertaking coordinated watershed monitoring for the Eastern Nile Basin, (4) prioritizing and preparing a first and second round of watershed management projects, (5) undertaking a joint hydro-ecological-livelihoods study in the Baro-Sobat-White Nile Sub-Basin, and (6) capacity building in

the fields of watershed management planning, monitoring, evaluation and impact assessment.

Component 1 – Programme Coordination – This component will support effective coordination of the programme implementation and management. It will increase the capacity of ENTRO to effectively coordinate cooperative Watershed Management activities across the Eastern Nile Basin and ensure effective cooperation among the riparian countries and across other ENTRO Programmes and projects. It will also provide for building institutional capacity at the national level by supporting three National Programme Coordinators (NPC's). The NPC's will interact between the Regional Thematic Specialists and national individuals, institutions and organizations involved in implementing all of the Programme's components within their respective countries. The Programme Steering Committee will provide guidance to the project. The Steering Committee will review and approve annual work plans and will receive and review annual substantive and financial reports on project activities.

Component 2 – Establishing a Watershed Management Data and Information System – This component will establish within ENTRO a system to systematically collate and store relevant data and information for effective watershed management planning, monitoring, evaluation and undertaking environmental, social and economic impact studies. The system will comprise a documentation centre, a social, environmental and economic data base and a Geographical Information System. The Data and Information System will build on that established by the Watershed Management CRA. This component will have strong linkages to Component 3 and to other data collation and storage activities: e.g. the collation and storage of stream flow and meteorological data.

Component 3 - Establishing and undertaking coordinated watershed monitoring for the Eastern Nile Basin.- This component will establish a long-term coordinated system of monitoring of erosion (water and wind) and erosion control, sediment loads and land cover change at various catchment scales. The component will have strong linkages to component 2. It will be important to not only monitor implementation of watershed management interventions but also determine their impacts at the local, regional and global levels. Assessment of impacts will include physical, social and economic. It will not be possible to undertake this across the whole Basin. A number of hydrologically linked micro and sub-catchments will be selected, representative of specific agro-ecological and livelihood systems (e.g. annual cropping, perennial cropping, agro-pastoral, pastoral). These will be studied in detail to obtain a deeper understanding of the impacts of watershed management interventions on livelihoods and on poverty reduction. The Programme would support purchase of transport and equipment, participatory field studies, data collection and analysis.

Component 4 - Preparing a first and second round of watershed management projects – The Watershed Management CRA identified and prepared Project Briefs for a number of potential follow-up watershed management projects. In a first Phase the Programme will support ENTRO in prioritizing and preparing full project Documents from these Briefs, seek financing sources and coordinate their implementation. In a second phase the Programme will support ENTRO in identifying

and preparing a second round of watershed management projects that address issues and constraints identified by the Monitoring and Evaluation studies.

Component 5 - Hydro-ecological-livelihoods Study in the Baro-Sobat-White Nile Sub-basin – The hydrology, ecology and livelihoods of the peoples of the Lowlands in this Sub-basin are inextricably linked. It will be important to obtain an understanding of these complex relationships before any major development initiatives are undertaken by the Southern Sudan government. Although some studies were undertaken in connection with the construction of the Jonglei canal, the Baro-Sobat Sub-basin was largely not covered. As some of the peoples of the Sub-basin are found in both Ethiopia and Sudan and given the strong hydrological linkages it would be important that this is undertaken as a joint Ethiopian-Sudanese study. The Programme would support participatory field studies, data collection and analysis, transport and equipment.

Component 6 – Capacity Building and Institutional Strengthening in the fields of Watershed Management Planning, Monitoring, Evaluation and Impact Studies - This component would support capacity building and institutional strengthening through improved communication, information exchange and specific training. These would be implemented through specially commissioned courses, regional training workshops, linkages to universities and national research institutes and civil society organizations involved in watershed management activities. It would have strong linkages with Components 2, 3 and 5.

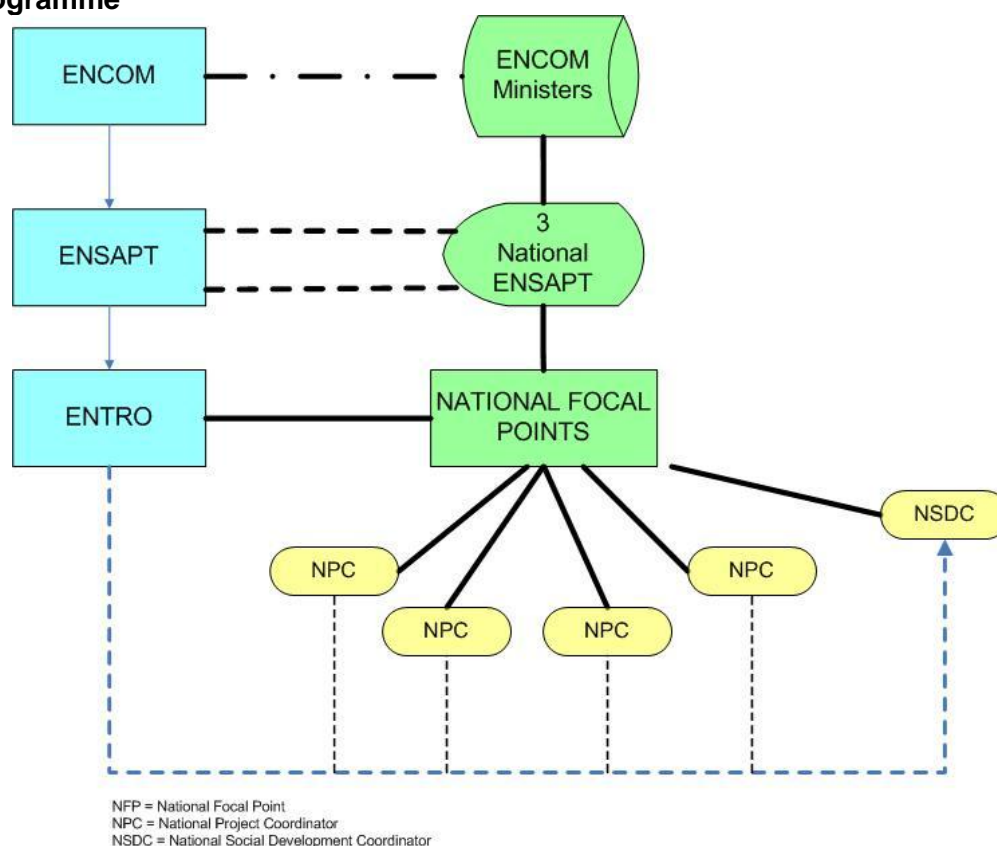
II. Institutional Arrangements and Programme Administration

A. Coordination and Programme Implementation

(i) ENSAP and ENTRO

The Eastern Nile Subsidiary Action Programme (ENSAP) is an investment programme by the Governments of Egypt, Ethiopia and the Sudan under the umbrella of the Nile Basin Initiative (NBI). It is led by the Eastern Nile Council of Ministers (ENCOM). ENCOM comprises the Ministers representing key stakeholder ministries and the ENSAP Teams (ENSAPT) comprising three technical country teams. The primary objective of ENSAP is to achieve joint action of the ground to promote poverty alleviation, economic growth and arresting environmental degradation. The Eastern Nile Technical Regional Office (ENTRO), which is a legal entity established by an ENCOM decision in 2002, manages and coordinates the preparation of ENSAP Projects. (Figure 1)

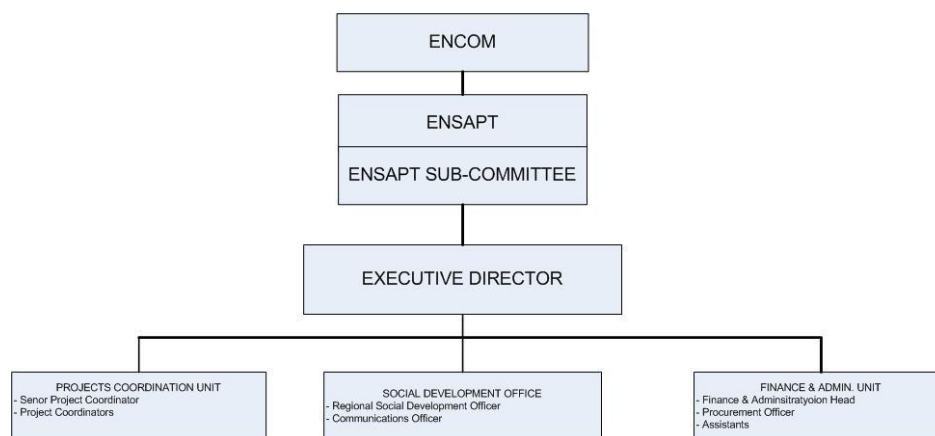
Figure 1. Institutional Structure of the Eastern Nile Subsidiary Action Programme



The Eastern Nile Technical Regional office (ENTRO) currently prepares, manages and coordinates projects within the Eastern Nile basin. As well as coordinating the implementation of ENSAP, ENTRO strengthens institutions and provides secretariat support to ENCOM/ENSAPT. ENTRO has a Social Development Office (SDO) that supports all ENSAP Projects through capacity building in social development, input into project design, formulation of guidelines and the initiation of studies and analysis.

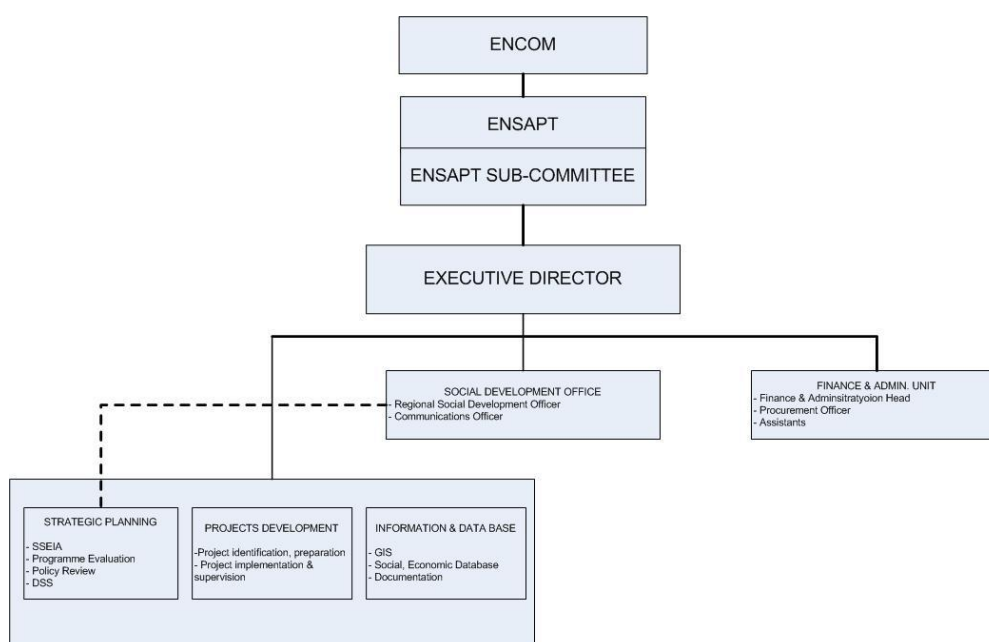
At the Country level ENSAP has National Focal Points (NFP) that undertakes overall coordination and liaison of National Coordinators and Working Groups (of specific projects) and the National Social Development Coordinators (NSDC's). Restructured in 2003. ENTRO itself is led by the Executive Director and has three Units: (i) Projects Coordination Unit, (ii) Social Development Office and (iii) the Finance and Administration Unit. The Projects Coordination Unit has a Senior Project Coordinator and Project Coordinators for each of the ENSAP Projects (Figure 2)

Figure 2. Current Organizational Structure of ENTRO



However, as the Joint Multi-purpose Programme moves into Phase II and the long-term CRA's come into operation the organizational structure of the Projects Coordination Unit is likely to see considerable expansion¹. Although its exact composition cannot be determined at this stage it would incorporate a functional structure as shown in figure 3.

Figure 3. Possible Future Organizational Structure of ENTRO



¹ See the Initial Watershed Management CRA's Report - "Cooperative Mechanisms Analysis".

The Eastern Nile Watershed management Programme would be coordinated through the **Projects Development Unit** and in particular through ENTRO's Regional Watershed Management Coordinator **who will be the Eastern Nile Watershed Management Programme Coordinator**. The Programme Coordinator will be supported by technical specialists in project planning and monitoring and evaluation.

(ii) Programme Steering Committee

A *Programme Steering Committee* will be established to provide strategic guidance to the Programme. The Steering Committee will review and approve annual work plans and will receive and review annual substantive and financial reports on Programme activities. The Steering Committee will be composed of the Watershed Management focal point from each participating country. Any relevant donor partners, the World Bank, and other appropriate parties will be invited as observers to the meetings. The Steering Committee is expected to meet at least annually and may circulate among the three Countries. It will be alternately chaired by the host country member of the Steering Committee. ENTRO's Project Coordinating Unit will provide secretariat support to the Committee.

(iii) National Programme Coordinators

The Programme will employ a **National Project Coordinator** (NPC) in each of the participating countries. The NPC will be responsible for supervising and coordinating the implementation of Programme's activities at the country level. At the National level the NPC will keep the National Focal Point (who covers all activities, projects and programmes under ENSAP) informed on all matters relating to the Watershed Management Programme.

The NPC will provide a critical link between ENTRO's Watershed Management Coordinator and the national and international specialists and organizations involved in implementing the various Programme components within the respective countries. The NPC will be a full-time position that is Programme-funded and competitively hired with the active involvement of the concerned Ministry. The NPCs will be housed in a Ministry to be selected by each Country. They will be supported by a National Working Group (NWG) comprising representatives from a wide range of concerned Stakeholders.

(iv) Universities and Research Institutes

Two Sub-components of Component 2: Establishing and undertaking coordinated watershed monitoring for the Eastern Nile Basin would be contracted to Research Teams from Universities and/or Research Institutes: the sample watershed erosion-sediment monitoring Sub-component and the sample watershed impact assessment studies Sub-component.

This will support the Programme's capacity building component, contribute to the sharing of knowledge and enhance cooperation among the riparian countries.

B. Participation and Stakeholder Involvement

Significant Programme components aim to broaden and deepen stakeholder involvement in watershed management. Programme implementation will ensure participation of all relevant stakeholders, including Ministries of Water, Agriculture, and Forestry, NGOs, educational institutions, local and traditional communities, and private sector organizations. Local stakeholders, especially communities and smaller NGOs/CBOs. This will be particularly important in the impacts assessments undertaken at the local level and in the Hydro-Ecological-Livelihoods Study.

A wide range of stakeholders is also expected to be involved in and benefit from the capacity building and institutional strengthening component through information and knowledge exchange.

C. Donor Coordination and Financing

To be determined.

III. Programme Implementation – Component Activities

A. Objective

The primary objective of the long-term Eastern Nile Watershed Management Programme (EN-WMP) is to provide continued and enhanced support to sustainable watershed management of the Eastern Nile Basin in order to improve the living conditions of the people, create alternative livelihoods, enhance agricultural productivity, protect the environment and in the long term reduce sediment transport and siltation of infrastructure and prepare for sustainable development oriented investments.

The Programme will strengthen cooperation and coordination among the riparians of the Eastern Nile Basin by supporting a series of measures focusing on various aspects of trans-boundary watershed management. Programme activities will include establishing a watershed management data and information system; establishing and undertaking coordinated watershed monitoring for the Eastern Nile Basin; undertaking a joint hydro-ecological-livelihoods study in the Baro-Sobat-White Nile Basin; and capacity building in the field of watershed management planning, monitoring, evaluation and impact assessment. Emphasis will be given to encouraging diverse stakeholder groups to work together, both within their own countries and with counterparts in other riparian countries, as an essential contribution to building the mutual understanding, relationships and trust that are essential to collaborative problem-solving in the future.

B. Approach

Hitherto, the countries of the Eastern Nile Basin have generally worked in isolation while developing and implementing their plans for the use, conservation or development of the Basin' resources. This Programme will help build bridges between the countries, to better enable a variety of key stakeholders to identify and take advantage of the opportunities offered by international collaboration. In its totality, the Programme aims to create many "points of contacts" among and between a large and varied set of stakeholders in the three Eastern Nile Basin countries. As these contacts grow, and as independent networks are established around common issues of concern, this is expected to contribute to an overall reduction of tension, to building of greater understanding and trust and, eventually pave the way for sustainable cooperative developments for poverty alleviation.

For example, through monitoring and evaluation of watershed management interventions and capacity building the Programme will bring together decision makers, watershed management experts and communities to create a variety of networks of key actors in the region. Decision makers will become better informed of linkages, opportunities and tradeoffs as a result of integrated watershed management thereby improving their abilities to frame more effective policies and plans with improved sustainability prospects. Improved regional exchanges and capacities will encourage streamlining of the monitoring of watershed management interventions. Bringing together experts in watershed management, hydrology, ecology, livelihoods development, environmental, sociology and economics for joint Programme implementation and capacity enhancement and institutional strengthening will help to develop a spirit of cooperation and shared experiences.

C. Programme Components and Activities

The Programme will support continued cooperation in trans-boundary watershed management by supporting activities in the following areas:

- (1) Establishing the Programme Steering Committee, Programme Coordination Unit and hiring national programme Coordinators,
- (2) Establishing a watershed management data and information system,
- (3) Establishing and undertaking coordinated watershed monitoring for the Eastern Nile Basin,
- (4) Prioritizing and preparing a first round of watershed management projects previously identified and then deriving from the monitoring and evaluation studies preparing a second round of watershed management projects;
- (5) Undertaking a joint hydro-ecological-livelihoods study in the Baro-Sobat-White Nile Basin, and
- (6) Capacity building in the field of watershed management planning, monitoring, evaluation and impact assessment.

Table 1: Summary of Component Activities and Tasks
COMPONENT 1 – PROG
<i>Sub-component 1.1 Programme Management Staff</i>
<i>1. Establish Programme Steering Committee</i>
<i>2. Establish Programme Management Unit</i>
<i>3. Hire National project Coordinators</i>
COMPONENT 2 – WATERSHED MANAGEMENT INFORMATION CENTRE AND DATA BASE
<i>Sub-component 2.1 Document Centre</i>
<i>Activities & Tasks</i>
1. Procure and install hardware/software
2. Establish Subject Areas and set up Computerized Document Record System (with keyword areas)
3. Collate and sort all available documentation: hard copy and digital
4. Enter records into Database:
5. Make Document Database available on-line (ENTRO web site)
<i>Sub-component 2.2 Social, Environmental and Economic Data Base</i>
<i>Activities & Tasks</i>
1. Procure and install hardware
2. Establish data base structure: thematic areas; geographic area;
3. Collate and sort all available information
4. Establish system for future data collection (hydrology, sediment, demography, etc)
5. Make Social, Environmental and Economic Data Base available on-line (ENTRO web site)
<i>Sub-component 2.3 Geographic Information System</i>
<i>Activities & Tasks</i>
1. Procure and install hardware/software
2. Establish geo-data base structure
3. Prepare inventory of available GIS data (including digital remote sensing data) relevant to Watershed Planning in East Nile Basin
4. Collate all available GIS data (including digital remote sensing data); enter into Geo-data base.
5. Develop meta data base (theme, source, description, scale)
6. Make meta data base available on-line (ENTRO web-site)

COMPONENT 3 – Monitoring, Evaluation and Impact Assessment of Watershed Management Interventions
<i>Sub-component 3.1 Establish Basin-wide System of Monitoring Sediment</i>
<i>Activities & Tasks</i>
1. Develop Basin-wide System of Sediment monitoring System (harmonization of methodologies, data recording & communication)
2. Identify key monitoring stations, identify gaps.
3. Procure equipment and install
4. Collate all previous data
5. Design data base and data entry protocols
6. Data entry
<i>Sub-component 3.2 Establish System of Monitoring Erosion and Sediment in Sample Watersheds</i>
<i>Activities & Tasks</i>
1. Identify University Research Teams and conclude Research Contracts
2. In participation with stakeholders - select Sample Micro and Sub-watersheds;
3. Develop system of erosion and sediment monitoring and data collection, design data base
4. Procure and install equipment; hire & train recorders; develop data collection & communication system
5. Undertake baseline physical survey (soils, slope, land cover, land management, climate)
6. Collect and analyze data
7. Determine Erosion: Land Management: Sediment delivery: Sediment load relationship at various catchment scales
8. Determine impact of Soil & Water Conservation Measures on sediment load & stream flows.
<i>Sub-component 3.3 Establish System of Environmental, Social and Economic Impact Assessment of Watershed Management Interventions in Sample Watersheds</i>
<i>Activities & Tasks</i>
1. Identify University Research Teams and conclude Research Contracts
2. Using the same sample micro and Sub Watersheds: establish contact with local communities, and key government and non-government stakeholders.
3. Develop programme of social, environmental and economic impact assessment
4. Undertake Baseline Surveys
5. Undertake analysis and determine impacts
6. Write and produce Reports
7. ENTRO analyze and determine Policy and Strategy Implications
COMPONENT 4: PREPARING A FIRST AND SECOND ROUND OF WATERSHED MANAGEMENT PROJECTS
<i>Sub-component 4.1 Prioritizing, Preparing and Coordinating Implementation of First Round of Watershed Management Projects</i>
<i>Activities and Tasks</i>
1. Prioritize projects on basis of agreed criteria
2. Prepare Project Documents
3. Seek funding sources
4. Establishing institutional arrangements for implementation
5. Negotiate & sign contracts/sub-contracts
6. Coordinate implementation
<i>Sub-component 4.2 Identifying, Preparing and Coordinating Implementation of Second Round of Watershed Management Projects</i>
1. Identify 2 nd Round projects
2. Prepare Project Documents
3. Seek funding sources
4. Establishing institutional arrangements for implementation
5. Negotiate & sign contracts/sub-contracts
6. Coordinate implementation
COMPONENT 5 - Undertaking a joint hydro-ecological-livelihoods study in the Baro-Sobat-White Nile Basin
<i>Activities & Tasks</i>
1. Prepare TOR, Invite expressions of interest, shortlist, invite proposals, evaluate and select.
2. ENTRO Supervise Implementation and chair Regional Workshops
3. Consultants hold stakeholder consultations, collect and analyze data
4. Establish linkages between hydrology, ecology and livelihood systems
5. Present findings at International Workshop with all key stakeholders
6. Prepare and produce Reports

COMPONENT 6 – Capacity Building and Institutional Strengthening
Sub-component 6.1 Formal Training
<p>Activities & Tasks</p> <ol style="list-style-type: none"> 1. Prepare work plan 2. Request UNESCO-IHE to prepare training course in Integrated Watershed Management Planning 3. Request NRI, Egypt to host the Training Course 4. Identify Course participants
Sub-component 6.2 Regional Training Workshops:
<p>Activities & Tasks</p> <ol style="list-style-type: none"> 1. Identify in-basin Training Institutes for training in Social Impact Assessment; Environmental Impact Assessment, and Environmental Economics 2. Conduct 3 Training Works Shops in Social Impact Assessment; Environmental Impact Assessment, and Environmental Economics

D. Detailed Programme Components

1. Establishing Programme Steering Committee and Programme Coordinating Unit

Total funding: US\$ 2.390 million

This component will enable effective coordination of all programme components and activities. It will increase the capacity of ENTRO to effectively coordinate cooperative Watershed Management activities across the Eastern Nile Basin and ensure effective cooperation among the riparian countries and across other ENTRO Programmes and projects. It will also provide for building institutional capacity at the national level by supporting three National Programme Coordinators (NPC's). The NPC's will interact between the Regional Thematic Specialists and national individuals, institutions and organizations involved in implementing all of the Programme's components within their respective countries

1.1 Programme Steering Committee

1.1.1 Introduction

This component will support the establishment and the operational activities of the Programme Steering Committee. The programme will support meetings of the Committee. The Committee is expected to meet at least annually and may circulate among the three Countries.

1.1.2 Organisation

The Steering Committee will be composed of the Watershed Management focal point from each participating country. Any relevant donor partners, the World Bank, and other appropriate parties will be invited as observers to the meetings. It will be alternately chaired by the host country member of the Steering Committee. ENTRO's Project Coordinating Unit will provide secretariat support to the Committee.

1.2 Programme Management Unit

1.2.1 Introduction

The Programme Management Unit (PMU) will strengthen ENTRO's capacity to (i) to coordinate and implement the national components of the Programme, (ii) ensure effective cooperation with the IDEN Projects and the Joint Multi-purpose Programme (JMP), and (iii) effectively coordinate cooperative Watershed Management activities across the Eastern Nile Basin.

1.2.2 Organization

The PMU will comprise the Regional Watershed Programme Coordinator, two thematic Specialists in Project Planning and Monitoring and Evaluation with Secretarial support. It will be supported by three national project Coordinators and their respective National Working Groups.

1.3 National Project Coordinators

1.3.1 Introduction

The Programme will support institutional strengthening at the National Level by supporting three full-time National Programme Coordinators (NPC's). The NPC's will interact between the Regional Thematic Specialists and national individuals, institutions and organizations involved in implementing all of the Programme's components within their respective countries.

1.3.2 Organization

The NPC will provide a critical link between ENTRO's Watershed Management Coordinator and the national and international specialists and organizations involved in implementing the various Programme components within the respective countries. The NPC will be a full-time position that is Programme-funded and competitively hired with the active involvement of the concerned Ministry. The NPCs will be housed in a Ministry to be selected by each Country. They will be supported by a National Working Group (NWG) comprising representatives from a wide range of concerned Stakeholders.

2. Establishing a watershed management data and information system,

Total funding: US\$ 0.215 million

This component will establish within ENTRO a system to systematically collate and store relevant data and information for effective watershed management planning, monitoring, evaluating and undertaking environmental, social and economic impact studies. The system will comprise a documentation centre, a social, environmental and economic data base and a Geographical Information System. The Documentation centre, Data Base and geographic Information System will build on those established by the Watershed Management CRA. This component will have strong linkages to Component 2 and to other data collation and storage activities

undertaken by ENTRO: e.g. the collation and storage of stream flow and meteorological data.

2.1 Document Centre

2.1.1 Introduction

This sub-component will provide key stakeholders across the basin with improved access to relevant watershed management information. The sub-component will support exchange of information, research findings, workshop materials and lessons learned from watershed management activities in and outside the Eastern Nile Basin.

2.1.2 Organization

The Document centre will be located in ENTRO in the Information and Data Base Unit. One Knowledge Management Specialist/editor will compile and make available watershed management resource materials. Hard copy materials will be converted to soft copy and entered into the Digital Document Data Base. Thus the Information centre will comprise hard and a softy copies. The Document Centre will collate relevant publications as they become available, and will make frequent web searches for new information.

2.2 Social, Environmental and Economic data base

2.1.1 Introduction

This sub-component will support Project identification and formulation as well as strategic watershed management planning and impact evaluation. It will be important that the data base is maintained and regularly updated.

2.2.2 Organization

The Data base will be located in ENTRO within the Information and Data Base Unit. One Information Technology (IT) Specialist will collate and enter all available social, environmental and economic data of relevance to the Eastern Nile Basin. The Data Base will maintain close contact with National Project Coordinators in order to ensure that data is the most current.

2.3 Geographic Information System

2.3.1 Introduction

Spatial data is of particular importance in project planning and monitoring and evaluation at all spatial levels. The Geographic Information System (GIS) will store all spatial data collated and assembled during the first round of the CRA's and will continue to add to the GIS as new data sets become available.

2.3.2 Organization

The GIS will be located in ENTRO within the Information and Data Base Unit. A first step will be to ensure the provenance of the data and to ensure compatibility with the selected GIS software system adopted by ENTRO. Where possible, linkages will be

established between the Social, Environmental and Economic Data Base and the GIS.

3. Monitoring, Evaluation and Impact Assessment of Watershed Management Interventions

Total; funding US\$ 5.35 million

This component will establish a long-term coordinated system of monitoring of erosion (water and wind) and erosion control, sediment loads and land cover change monitoring at various catchment scales. The component will have strong linkages to component 2. It will be important to not only monitor implementation of watershed management interventions but also determine their impacts at the local, regional and global levels. Assessment of impacts will include physical, social and economic. It will not be possible to undertake this across the whole Basin. A number of hydrologically linked micro and sub-catchments will be selected, representative of specific agro-ecological and livelihood systems (e.g. annual cropping, perennial cropping, agro-pastoral, pastoral). These will be studied in detail to obtain a deeper understanding of the impacts of watershed management interventions on livelihoods and on poverty reduction. The project would support purchase of transport and equipment, participatory field studies, data collection and analysis.

3.1 Establish Basin-wide System of Monitoring Sediment Loads

3.1.1 Introduction

It will be important that data collection methods, frequencies and presentation of data are harmonized across the Eastern Nile Basin². A communications strategy and network will be established. This could be based on the internet with national centres communicating to the ENTRO Data and Information Unit. There will be scope for network upgrading. There will be a reassessment of the station network and installation of additional stations. This will facilitate monitoring for the purpose of River Basin Management.

3.1.2 Approach

As a first step all available data previously recorded will be collated and where possible standardized. Cooperation across the Eastern Nile Basin provides an opportunity for monitoring the Basin as a River Basin System, i.e. as aggregate of interrelated functional subsystems rather than purely hydrological units or segments. This will require stations at locations in the river basin related to these functional sub-systems (floodplains absorbing important sediment outputs, the cataract system in Sudan, main swamp areas, sub-watersheds where large scale watershed management activities are anticipated, lowlands with intensive land use changes and resettlement). These subsystems would also serve as broad management or main development units.

² And across the whole Nile Basin if such sediment monitoring system is established.

3.1.3 Organization

The coordinated monitoring of sediment loads will form one component of a larger system of hydrological and meteorological monitoring providing the Eastern Nile Planning Model and the Nile Basin Decision Support System (DSS) with essential data. The sediment data will also be used in the long-term monitoring of Watershed Management interventions and in particular component 2.2: the system of monitoring of erosion and erosion control and sediment delivery in sample watersheds..

3.2 Establish System of Erosion and Sediment Monitoring and Research in Sample Watersheds

3.2.1 Introduction

The objective will be to obtain an understanding of the complex inter-relationships between erosion, deposition and sediment delivery at the micro-watershed level and sediment loads and fluvial transport at increasing larger catchments.

3.2.2 Approach

A number of hydrologically linked micro and sub-watersheds will be selected and a long-term system of erosion and sediment monitoring established. The micro-catchments and sub-catchments will be representative of specific agro-ecological and livelihood systems (e.g. annual cropping, perennial cropping, agro-pastoral, pastoral). The approach will be to use empirical data from instrumented measurements of erosion, deposition and sediment loads as input to computer modelling analysis. Monitoring of Land Use and Land Cover change of the sample Sub-catchments would be undertaken. The impact of specific watershed management interventions would be determined.

3.2.3 Organization

The programme of monitoring and research will be undertaken by selected Research Institutions and Universities. The Programme would be coordinated by ENTRO.

3.3 Establish a System of Social, Environmental and Economic Impact Assessment of Watershed Management Interventions

3.3.1 Introduction

The objective of this sub-component will be gain an understanding of the complex linkages between the natural resource base and its utilization, livelihood systems of households and communities and the dynamics of change occasioned by the implementation of watershed management interventions and other endogenous factors.

3.3.2 Approach

Using the same sample micro-watersheds contact will be established with key stakeholders and a process of participatory action research developed that will

explore and analyse the resource-livelihoods complex and determine the environmental, social and economic impacts of watershed management interventions on various stakeholder livelihoods.

3.3.3 Organization

The programme of monitoring and research will be undertaken by selected Research Institutions and Universities. The Programme would be coordinated by ENTRO.

4. Preparing a First and Second round of Watershed Management Projects

Total funding: US\$ 1.385 million

The Watershed Management CRA identified and prepared Project Briefs for a number of potential follow-up watershed management projects. In a first Phase the Project will support ENTRO in prioritizing and preparing full project Documents from these Briefs, seek financing sources and coordinating their implementation. In a second phase the project will support ENTRO in identifying and preparing a second round of watershed management projects that address issues and constraints emanating from the Monitoring and Evaluation studies. Costs include support to the Watershed Management Programme Coordinator.

4.1 Prioritizing, Preparing and Coordinating the Implementation of a First Round of Watershed Management Projects

4.1.1 Introduction

The Watershed Management CRA prepared 11 project briefs for potential implementation. ENTRO will through a process of discussion with the national ENSAP Teams prioritize these projects and prepare full project documents and seek financing for their implementation.

4.1.2 Approach

In collaboration with the ENSAP Teams criteria for prioritizing the projects will be established. It is possible that in some cases projects may be integrated where synergy between the projects can be achieved. ENTRO will then develop full Project Documents for each project. The project implementation procedures would be established. On the basis of the priorities established ENTRO would seek financing for each project. Following the securing of funds ENTRO would initiate and coordinate Project implementation.

4.2 Identifying, Preparing and Coordinating Implementation of a Second Round of Watershed Management Projects

4.2.1 Introduction

Emanating from the monitoring and research activities of Component 1 a number of key issues and constraints will be identified relating to the implementation of the programme of watershed management interventions. A second round of watershed management projects will be identified to address these issues and constraints.

4.2.2 Approach

Analysis of the monitoring and impact assessments being undertaken under the auspices of Component 2 and also of the outputs of the First Round of Watershed management projects will reveal a number of issues and constraints not previously identified in the Watershed Management CRA. Some of these could be the result of major changes in national Policies and Strategies that impact of peoples' livelihood strategies and utilization of the natural resource base. Other issues could emerge from the implementation of other IDEN projects and components in the Joint Multipurpose Programme. It will be important to recognize the context within which watershed management interventions are being implemented is extremely dynamic and ENTRO must be responsive to these dynamics.

As with the First Round projects ENTRO would identify and prepare full Project Documents and determine implementation modalities. It would continue to seek funding and initiate and coordinate project implementation.

5. A Joint Hydro-Ecological-Livelihoods Study in the Baro-Sobat-White Nile Sub-basin

Total; funding US\$ 1.02 million

5.1 Introduction

The hydrology, ecology and livelihoods of the peoples of the Lowlands in this Sub-basin are inextricably linked. It will be important to obtain an understanding of these complex relationships before any major development initiatives are undertaken by the Southern Sudan government. Although some studies were undertaken in connection with the construction of the Jonglei canal, the Baro-Sobat Sub-basin was largely not covered. As some of the peoples of the Sub-basin are found in both Ethiopia and Sudan and given the strong hydrological linkages it would be important that this is undertaken as a joint Ethiopian-Sudanese study.

5.2 Approach

Given the complexity of the relationships and linkages between the hydrology, ecology and livelihood systems the study would of necessity be multi-disciplinary and fully integrated. An important first step will be to establish a comprehensive analytical framework within which the study can proceed and to allow all team members to understand the linkages of their specific areas of study to the other components. An initial identification of all stakeholders and their areas of interest will be very important step in developing the framework. A full understanding of the livelihood systems will entail study methodologies that are fully participatory and address all stakeholders. Knowledge sharing and dissemination of results throughout the course of Study with all stakeholders will be very important to ensure relevance and accuracy of the Study findings.

5.3 Organization

This is a study of some complexity and will require careful coordination by ENTRO. Consultation and knowledge sharing with stakeholders (including donor (s)) will be important and ENTRO will provide the forum for this to take place.

6. Capacity Building and Institutional Strengthening

Total; funding US\$ 5.025 million

This component would support capacity building and institutional strengthening through improved communication, information exchange and specific training. These would be implemented through specially commissioned courses, regional training workshops, linkages to universities and national research institutes and civil society organizations involved in watershed management activities. It would have strong linkages with Components 1, 2 and 4.

6.1 Formal Training in watershed Management

This sub-component will contribute to increasing the levels of understanding of technical staff at the national level in the various aspects of watershed management at the national level.. The Programme would support the design and holding of training courses (6 months) in Watershed Management Planning. These could be held in-country through or at the UNESCO-IHE in the Netherlands or the Hydraulics Research Institute Regional Training Centre in Egypt.

6.2 Regional Training Workshops

These would be shorter course (2 weeks) in specific aspects of Watershed management Planning, monitoring and evaluation. Subjects would cover but be not limited to Social Impact Assessment, Environmental Impact Assessment and Environmental Economics, Natural Resources Management, Project Monitoring and Evaluation, Project Management and Management Information Systems. The course participants would be drawn from the three riparian countries and would contribute to fostering knowledge exchange and confidence building.

IV. Programmes Costs and Financing

A. Programme Costs

Table 2. Programme Cost Summary (US\$ '000)

WATERSHED MANAGEMENT PROGRAMME: COSTS	US\$ '000
Component	
1. Programme Coordination	
1.1 Programme Management Staff	1,718.0
1.2 Programme Office Equipment, Furniture , etc	80.0
1.3 Vehicles	22.0
1.4 Programme Management Expences	420.0
1.5 National Programme Coordinator Expences	303.0
COMPONENT 1 TOTAL	2,543.0
2. Watershed management Information and Data base	
2.1 Document Centre	70.0
2.2 Environmental, social and Economic Datra Base	40.0
2.3 Geographic Information System	105.0
COMPONENT 2 TOTAL	215.0
3. Monitoring, Evalaution and Impact assessment: WSM Interventions	
3.1 Basin-wide Sediment Monitoring System	300.0
3.2 Erosion & Sediment Moniroing & Research: Sample Watersheds	2,525.0
3.3 Environmental, Social and Economic Impact Assessment: WSM Interventions	2,525.0
COMPONENT 3 TOTAL	5,350.0
4. Preparation First & Second Round WSM Projects	
4.1 Prioritizing, Preparing and Coordinating implementation of First Round Projects	606.0
4.2 Identifying, Preparing and Coordinating implementation of Second Round Projects	404.0
COMPONENT 4 TOTAL	1,010.0
5. Joint Hydro-Ecological-Livelihoods Study: Baro-Sobat-White Nile Sub-basin	
COMPONENT 5 TOTAL	1,020.0
6. Capacity Building	
6.1 Formal Training	3,550.0
6.2 Regional Training Workshops	1,475.0
COMPONENT 6 TOTAL	5,025.0
PROGRAMME TOTAL	15,163.0

B. Programme Financing

To be determined.

C. Programme Implementation Schedule

WATERSHED MANAGEMENT PROGRAMME: WORK PLAN	FY 1				FY 2				FY 3				FY 4				FY 5	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
Component																		
1. Establish Programme Steering Committee and Programme Coordinating Unit																		
1.1 Establish Programme Steering Committee	■	■				■				■				■				■
1.2 Establish & Support Programme Coordinating Unit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1.3 Hire and Support National Programme Coordinators	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2. Watershed management Information and Data base																		
2.1 Document centre	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.2 Environmental, social and Economic Data Base	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2.3 Geographic Information System	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3. Monitoring, Evalaution and Impact assessment: WSM Interventions																		
3.1 Basin-wide Sediment Monitoring System	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3.2 Erosion & Sediment Moniroing & Research: Sample Watersheds	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3.3 Environmental, Social and Economic Impact Assessment: WSM Interventions	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4. Preparation First & Second Round WSM Projects																		
4.1 Prioritizing, Preparing and Coordinating implementation of First Round Projects	■	■	■	■	■	■	■	■	■	■	■	■						
4.2 Identifying, Preparing and Coordinating implementation of Second Round Projects													■	■	■	■	■	■
5. Joint Hydro-Ecological-Livelihoods Study: Baro-Sobat-White Nile Sub-basin																		
	■	■	■	■	■	■	■	■	■	■	■	■						
6. Capacity Building																		
5.1 Formal Training		■	■	■		■	■	■		■	■	■		■	■	■		■
5.2 Regional Training Workshops		■	■	■		■	■	■		■	■	■		■	■	■		■

V. Procurement, Disbursement and Financial Management

A. Procurement Methods

Technical equipment and other goods costing US\$ 150,000 and more per contract will be subject to International Competitive Bidding (ICB) requirements. For goods in the range between US\$ 80,000-US\$ 150,000 contracts may be awarded on the basis of National Competitive Bidding (NCB) – it should be noted that for this Programme, NCB includes all of the participating riparian countries and bidding opportunities will therefore be published in all riparian countries for NCB. For goods contracts below US\$ 80,000 contracts will be awarded on the basis of the World Bank's Shopping procedure, where price quotations will be obtained from at least three qualified suppliers from at least two eligible countries or from comparison of quotations obtained from three domestic suppliers from the riparian countries.

As much of work undertaken in this Programme is capacity building and technical assistance to the Eastern Nile Basin riparian countries, a large percentage of the expenditures will be for Consultants' Services, much of which will be based in the Eastern Nile Basin. Following agreed upon criteria, ENTRO will maintain and update a list of consultants that will be used to establish shortlists. The shortlists will be established based on expressions of interests received through GPNs and Specific Advertisements placed in the UNDB and/or regional newspapers, depending upon the estimated value of such assignments. Consultant firms, Universities and other Research Institutions financed under the Programme will be selected in accordance with Bank Consultant Guidelines through a Quality and Cost-Based Selection (QCBS), and by using the Bank's Standard Request for Proposals. Specialized Consultants' Services from the Nile riparian countries, below an estimated contract value of US\$ 50,000 equivalent, will be selected on the basis of Consultant Qualifications (CQ) from the predetermined roster of qualified consultants. Training under the Programme will be implemented according to an annual training plan that ENTRO will prepare and submit to the World Bank for non-objection before implementation. More specifically, the following selection procedures would be used for Consultants' Services:

- (a) *Quality-and-Cost-based Selection*: All consulting service contracts valued at more than US\$ 200,000 equivalent would be awarded through the Quality and Cost Based Selection (QCBS) method. QCBS will also be used for all contracts awarded to consulting firms between US\$ 50,000 and US\$ 200,000 equivalent. To ensure that priority is given to the identification of suitable and qualified national consulting firms, short-lists for QCBS contracts estimated at or less than US\$ 200,000 equivalent may be comprised entirely of national consultants from the Nile riparian countries, with no more than two firms on the short-list from any one riparian country, (in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines), provided that a sufficient number of qualified individual or firms (at least three) are available. However, if foreign firms have expressed interest, they would not be excluded from consideration.
- (b) *Consultant's Qualification Selection (CQ)* may be used for Consultants' Services contracts below an estimated contract amount of US\$ 50,000 equivalent, for research and targeted interventions for which organizations with specialized expertise, strong capacities to work with multinational groups and proven track records would be recruited. CQ may also be used for the

selection of training institutions for contracts to provide training services that are estimated to cost up to US\$ 150,000 equivalent per contract.

- (c) Consultants for services meeting the requirements of Section V of the Consultant Guidelines will be selected under the provisions for the *Selection of Individual Consultants* method. Individual Consultants (IC) will be selected through comparison of curriculum vitae against job description requirements of those expressing interest in the assignment, or those having been identified directly by the PMU. Civil servants from the riparian countries cannot be hired as consultants under the Programme.
- (d) *Indefinite delivery contracts* may be used for contracts on a retainer basis. Services under this type of contract are likely to be those which will be required on a recurrent basis and could include, but are not limited to, services such as translation, interpretation, workshop facilitation and community training etc.

Training, workshops, conference attendance and study tours will be carried out on the basis of approved annual programs that will identify the general framework of training and similar activities for the year, including the nature of training/study tours/workshops, the number of participants, and cost estimates. For national training and workshops, preference will be given to consultants from the country in which the training is being organized, provided that a sufficient number of qualified individuals or firms (at least three) are available. For regional training, preference will be given to consultants from the Eastern Nile Basin riparian countries, provided that no more than two consultants from any one riparian are short-listed and a sufficient number of qualified individuals or firms (at least three) is available.

The regional and technical nature of this Programme will result in the possibility that a number of tasks and activities may best be undertaken by existing state owned universities or research institutions in the Eastern Nile Basin riparian countries. The Programme thus will involve contracting research institutions, think tanks and academic institutions that are government owned in the respective countries where the services are required to be rendered. This work will likely be in the fields of: (a) watershed management, (b) environmental and social impact assessment, (c) environmental economics, (d) erosion and sedimentation data and modeling; and (e) livelihoods assessment.

As these unique assignments will be specific for the respective countries, it is very unlikely that suitable expertise from private sector consultants will be available.

University professors or scientists from research institutes can be contracted individually under Bank financing provided that they have full time employment contracts with their institution, have regularly exercised their function for a year or more before they are contracted under Bank funding, and selection is made on a competitive basis, with full justification, and in accordance with relevant Bank policies.

The following documents are to be submitted to the World Bank for prior review:

- (a) *Goods and Equipment*: All Contracts above US\$ 150,000 will be submitted for prior review.

(b) *Consultants' Services:* All contracts with firms above US\$ 200,000, will be submitted for prior review, while the first contract with firms below US\$ 200,000 will be reviewed. Individual consultant contracts above US\$ 50,000 will all be subject to prior review. Terms of Reference will be written by the appropriate the ENTRO Watershed Management Programme Coordinator staff. A large portion of this Programme will consist of small stand-alone Consultants' Services. To streamline Programme operations, the World Bank will not review the Terms of Reference for any contract less than US\$ 50,000.

B. Disbursement

To be determined

C. Financial Management

To be determined

VI. Reporting

A. Programme Reports

During the implementation of the Programme, the following reporting will be required:

- **E-mailed monthly narrative report** (maximum 2 pages). Outlining the work accomplished in the preceding month, an outline of the work expected to be completed during the coming month, and if appropriate, comments and/or recommendations relating to any unforeseen conditions which may affect the progress or the quality of the work. The responsibility for reporting is with the Watershed Management Programme Manager.

Distribution: ENTRO, National Programme Coordinators, World Bank (Donor). For internal use only.

- **Semi-Annual Programme Implementation Progress Reports.** Covering the intervals between the annual reports the e-mailed monthly narrative reports will be expanded to include a narrative summary of activities undertaken during the past six months. This should include: (a) the status of implementation progress, problems encountered and corrective actions needed; (b) the current costs of each Programme component and estimated costs for completion; and (c) the degree of achievement of Programme objectives, as measured by the status of Programme indicators. These reports will include special sections on procurement and disbursement (attaching the most recent FMR) with information on: progress of procurement activities against plans set forth in the PIP; variations in progress, reasons for variations and actions being taken to address these problems; and Programme expenditures (foreign and local costs).

Timing: First report to be submitted 6 months after Programme effectiveness.

Distribution: ENSAPT, National Programme Coordinators, World Bank (Donor).

- **Annual Substantive Programme Progress Report:** The Programme Manager will complete an annual substantive Programme progress report, which will clearly describe and assess Programme progress against the established work plan, Programme documents, and the overall objectives of the Programme. Every effort will be made to simplify and unify reporting arrangements; therefore, the Programme Manager will review the annual reporting requirements of the World Bank, (the Donor) and the other relevant agencies and donors and design a unified reporting format acceptable to all that meets most of the reporting requirements of the donors and agencies in one single report.

Timing: First report to be submitted 12 months after Programme signature and two months ahead of the first Annual Programme Review.

Distribution: ENSAPT, World Bank and (Donor).

- **Substantive Work Plan:** Will be attached to the Annual Substantive Programme Progress Report and will include an updated procurement plan.
- **Mid term evaluation:** Resources have been set aside in accordance with standard procedure to ensure that a mid-term evaluation can be carried out. The Terms of Reference and timing of this evaluations will be determined through the Annual Review process or by correspondence. The evaluations will normally be independent and thus carried out by consultants not previously associated with the Programme.

Timing: Mid-term evaluation: During third year of Programme implementation.

Distribution: ENSAPT. This report may be shared with other parties upon request in accordance with established policy.

Additional substantive Programme outputs:

- **Ad hoc Reporting and Substantive Reports.** The Programme will be producing a large number of ad hoc substantive reports within the thematic areas in which it is operating. These reports will be produced at either the national or regional levels for a variety of purposes.

Distribution: As per intention of report.

Additional distribution: ENSAPT, World Bank (and Donor)

Financial reports:

Financial Monitoring Reports. ENTRO will be responsible for submitting quarterly FMRs as well as annual budgets, Programme monitoring reports, and consolidated financial statements to the World Bank.

- **Quarterly FMR.** Procurement and disbursement information for the preceding quarter and projections for the following six months will be consolidated in the quarterly Financial Management Report (FMR). The FMRs will also include a summary of the physical progress in Programme implementation, with an explanation of variances from implementation targets.

Timing: quarterly for each fiscal year of Programme effectiveness.

Distribution: ENSAPT, World Bank (and Donor).

VII. Monitoring and Evaluation

A. Introduction

Purpose. The monitoring and evaluation process is an integral element of the Watershed Management Programme. This process will provide information on whether the Programme interventions are successful in achieving the development objectives and whether implementation is proceeding in accordance with the plan. The process integrates the measurement and monitoring of *both development and performance indicators*. Monitoring is a continuous process and provides necessary information which facilitates an assessment of the progress of Programme implementation. Moreover, monitoring ensures that progress is maintained according to schedule, and measures the quality and effect of the processes and procedures.

Audience for monitoring efforts. The monitoring efforts provide the ENCOM, ENSAPT and ENTRO, the World Bank, (the Donor) and others with the information needed to analyze the current Programme situation and identify solutions to keep the schedule and achieve the desired objectives.

Programme evaluation. In addition to the ongoing monitoring efforts, two Programme evaluations will be carried out during implementation, at mid-term and at Programme completion. These two evaluations will provide a perspective on Programme implementation, corrective measures required (mid-term evaluation) in addition to providing information on which effects and impacts have been achieved during the Programme implementation period.

Monitoring and Evaluation Plan. This Monitoring and Evaluation Plan (M&E Plan) will be adapted from the Programme Logical Framework (Annex A). The plan will provide a narrative for Programme components and the corresponding output indicators. The plan will further outline how each indicator is measured and where relevant information is found.

Methodology. The M&E process will utilize both conventional and participatory strategies and will engage a range of stakeholders. Monitoring is mainly based on quantitative and objective indicators and objective assessments. Only when it is not possible to get objective assessment, does the plan resort to subjective assessment.

Ongoing learning. Programme monitoring results will be presented to all Programme stakeholders. The findings and results will be used by ENTRO and the Watershed Management Programme Manager to improve performance and to take corrective action throughout the Programme implementation period.

B. M & E Strategy and Action Plan

Approach. The first task will be to develop a detailed Monitoring and Evaluation Plan based on the information already provided in the present document. The first activity in the Plan will be to review the Programme to develop detailed performance indicators against which Programme performance can be measured. These indicators will be in conformity (but in greater detail) with the Logframe and Monitoring Plan provided in the present document.

Establishing the baseline situation. The Programme Manager will develop component specific baseline situations along the following parameters:

- Present availability information; documentation; environmental, social and economic data; and GIS data (Component 1).
- Present availability, location and status of sediment monitoring data; research results and other data on erosion and deposition; and research and other data on natural resources-livelihoods-poverty linkages within the Eastern Nile Basin (Component 2).
- Present availability and location of data and information on hydro-ecological-livelihoods linkages in the Baro-Sobat-White Nile Sub-basin (Component 4).

The baseline situation may be developed based on literature review, sampling surveys, rapid assessments or other accepted methodologies.

Developing the M&E Strategy and Action Plan and the Tracking Matrix. With the clearly defined baseline situation, and with further detailed performance indicators, the M&E Strategy will be developed. The Strategy will outline benchmarks and timelines for achievements of the various outcomes. Attached to the M&E Strategy will be an Action Plan, which clearly spells out the steps, activities and actions which are required from various stakeholders, consultants, etc. A relatively simple overview tracking matrix will also be established to monitor performance. This tracking matrix will be updated regularly, (at least once every two months). The tracking matrix will form an important input to reporting to ENSAPT, the World Bank and donors. It will also be a useful base on which to write the semi-annual and annual reports

C. Key Performance Indicators

The key Outcome/Impact indicators listed in the Monitoring and Evaluation Plan are as follows:

- Increased regional cooperation in watershed management,
- Increased number of basin-wide networks of watershed management professionals and increased number of experts knowledgeable in the subject;
- Greater appreciation of erosion, deposition and sedimentation and impacts on livelihoods and poverty;
- Expanded information, knowledge base and know how on watershed management available to professionals and NGOs;
- Greater awareness of the linkages between macro/sectoral policies, the natural resource bas, livelihoods and poverty.

ANNEX 1. LOGICAL FRAMEWORK

Hierarchy of Objectives	Key Performance Indicators	Monitoring and Evaluations	Critical Assumptions
<p>Basin-wide Goal</p> <p>To achieve the sustainable socio-economic development through the equitable utilization of, and benefit from, the common Eastern Nile Basin's natural resources.</p> <p>ENTRO's vision is to see a series of new projects being prepared and implemented; working for the shared benefits of cooperation.</p>	<p>Basin-wide Indicators</p> <p>Increasing levels of regional cooperation and coordination through ENSAP and ENTRO.</p>	<p>Reports</p> <p>ENTRO's Annual Report.</p>	<p>(From Objective to Goal)</p> <p>Continued political and financial commitment to the Eastern Nile Technical Regional Office by the three riparian states.</p> <p>Continued donor support.</p>
<p>Programme Development Objective</p> <p>The immediate objective of the long-term Eastern Nile Watershed Management Programme (EN-WMP) is to provide continued and enhanced support the sustainable watershed management of the Eastern Nile Basin in order to improve the living conditions of the people, create alternative livelihoods, enhance agricultural productivity, protect the environment and in the long term reduce sediment transport and siltation of infrastructure and prepare for sustainable development oriented investments.</p> <p>The overriding regional significance of this will be its contribution to enhanced food security and poverty alleviation in the region and its long term contribution to arresting degradation of the natural resource base.</p> <p>Enhancing the analytical capacity for a basin-wide perspective to support the sustainable watershed management and development of the Eastern Nile Basin's natural resources, and</p> <p>Engaging stakeholders, from local communities to national policy makers, universities, from non-governmental organizations to line ministries, in management and protection of the basin's shared resources.</p>	<p>Outcomes/Impact Indicators</p> <p>Increased regional cooperation in water shed management; sediment monitoring; and environmental, social and economic impacts of WSM Interventions</p> <p>Basin-wide networks of water shed management professionals</p> <p>Expanded information and knowledge base on erosion, deposition and sediment delivery available to professionals and NGOs</p> <p>Greater awareness of the linkages between natural resource utilization, livelihoods and poverty.</p>	<p>Programme Reports</p> <p>Watershed Management Programme reports that clearly document the results of monitoring, impact assessment and studies</p> <p>Programme monitoring and evaluation reports.</p>	<p>(From Objective to Goal)</p> <p>The Eastern Nile Basin riparian governments:</p> <p>Agree on the planning, implementation and monitoring of the Programme.</p> <p>Programme component work plans and financial arrangements for the programme are in place.</p> <p>Stakeholders from both the public sector and civil society at large are willing to actively participate in and collaborate with the programme.</p> <p>Full Financing for all planned Programme components.</p>

WATERSHED MANAGEMENT CRA

Hierarchy of Objectives	Key Performance Indicators	Monitoring and Evaluations	Critical Assumptions
<p style="text-align: center;">Outputs:</p> <p>1. Programme Coordinating Mechanisms</p> <p>1.1 Establish Steering Committee</p> <p>1.2 Establish Programme Coordinating Unit</p> <p>1.3 Hire National Programme Coordinators</p>	<p style="text-align: center;">Outcome/Impact Indicators</p> <p>1.1 Steering Meets at least annually</p> <p>1.2 Staff hired and Unit operating</p> <p>1.3 NPC's hired and operating</p>	<p style="text-align: center;">Programme Reports</p> <p>Annual Project Report – including project monitoring and evaluation, and workshop reports.</p>	<p style="text-align: center;">(From Outputs to Objective)</p> <p>1. Qualified and motivated staff and other resources are available in the region.</p>
<p style="text-align: center;">Outputs</p> <p>2. Watershed Management Information Centre and Data Base</p> <p>2.1 Document Centre established and operating</p> <p>2.2 Environmental, Social and economic Data Base established and operating</p> <p>2.3 Geographic Information System established and operating</p>	<p style="text-align: center;">Outcome/Impact Indicators</p> <p>2.1 Hardware & software procured & installed</p> <p>2.1 Document data base structure developed</p> <p>2.1 All relevant available documentation collated and indexed & entered into data base</p> <p>2.2 Hardware & software procured & installed</p> <p>2.2 Data base structure developed</p> <p>2.2 All relevant available data collated & entered into data base</p> <p>2.3 Hardware & software procured & installed</p> <p>2.3 Geo Data base Structure developed</p> <p>2.3 Feature data sets and map files collated, meta data recorded and files entered into GIS</p> <p>2.3 Additional feature data sets and map files obtained</p>	<p style="text-align: center;">Programme Reports</p> <p>Annual reports</p> <p>2.1 Bibliography prepared (hard & digital copy)</p> <p>2.2 Meta data base established & disseminated (hard & digital)</p> <p>2.3 Meta data base established & disseminated (hard & digital copy)</p>	<p style="text-align: center;">(From Outputs to Objective)</p> <p>2.1 Qualified staff recruited</p> <p>2.2 Qualified staff recruited</p> <p>2.2 Data made available</p> <p>2.3 Qualified staff recruited</p> <p>2.3 Geo data made available</p>
<p style="text-align: center;">Outputs</p> <p>3. Watershed Management Interventions Monitored, Evaluated & Assessed</p> <p>3.1 Basin-wide System of Sediment Monitoring</p> <p>3.2 System of Research & Monitoring Erosion and Sediment in Sample watersheds</p>	<p style="text-align: center;">Outcome/Impact Indicators</p> <p>3.1 Basin-wide system of harmonized sediment data collection established</p> <p>3.1 Gaps identified & equipment installed</p> <p>3.1 Basin-wide system of communication & data transfer established</p> <p>3.2 Competent Research Monitoring Teams identified</p> <p>3.2 Sample watersheds Identified</p> <p>3.2 Research & Monitoring Framework developed</p>	<p style="text-align: center;">Programme Reports</p> <p>Annual Programme Report – including Programme monitoring and evaluation, and workshop reports.</p> <p>3.1 Meta data base development & disseminated (hard & soft copy)</p> <p>3.1 Annual Bulletins published</p> <p>3.2 Minutes of Knowledge Sharing Workshops published & disseminated</p> <p>3.2 Research & Monitoring Reports Published & Disseminated</p>	<p style="text-align: center;">(From Outputs to Objective)</p> <p>3.1 Full cooperation from riparian countries in harmonizing data collection;</p> <p>3.2. Competent Researchers available.</p>

WATERSHED MANAGEMENT CRA

Hierarchy of Objectives	Key Performance Indicators	Monitoring and Evaluations	Critical Assumptions
3.3 System of Environmental, Social and Economic Impact Assessment of WSM Interventions in operation	3.2 Equipment procured & installed 3.2 Data Collected & Analyzed 3.2 Physical Impacts of WSM Interventions determined 3.3 Competent Research Monitoring Teams identified 3.3 Research Framework developed 3.3 Data Collected & Analyzed 3.4 Environmental, Social and Economic Impacts of WSM Interventions determined	3.3 Minutes of Knowledge Sharing Workshops published & disseminated 3.3 Research & Monitoring Reports Published & Disseminated	3.3 Competent Researchers available
Outputs 4. First & Second Round Watershed Management Projects 4.1 Prioritization, Preparation & Coordination of Implementation of First Round of watershed Management projects 4.2 Identification, Preparation & Coordination of Implementation of Second Round of Watershed Management Projects	Outcome/Impact Indicators 4.1 Projects prioritized according to agreed set of criteria 4.1 Project Documents prepared ready for donors 4.1 Financing sources identified and agreed 4.1 Institutional arrangement for project implementation agreed 4.1 Projects Implemented 4.2 Projects Identified 4.2 Project Documents prepared ready for donors 4.2 Financing sources identified and agreed 4.2 Institutional arrangement for project implementation agreed 4.2 Projects Implemented	Programme Reports Annual Programme Report – including Programme monitoring and evaluation reports. 4.1 Programme Documents 4.1 Programme progress reports 4.1 Programme Completion reports 4.1 <i>Ex post</i> Evaluation reports 4.2 Programme Documents 4.2 Programme progress reports 4.2 Programme Completion reports 4.2 <i>Ex post</i> Evaluation reports	(From Outputs to Objective) All Nile countries ready to participate in component. 4.1 Agreement from riparian Countries on prioritization 4.1 Financing Sources obtained 4.2 Financing Sources obtained
Output 5. Joint Hydro-Ecological-Livelihoods Study: Baro-Sobat-White Nile Sub-basin	Outcome/Impact Indicators - Study Consultants identified and contracted - Stakeholder Consultations undertaken. - Survey, Participatory Data Collection and Analysis completed - Findings presented at Workshops	Programme Reports - Annual Programme Report – including Programme monitoring and evaluation, and workshop reports. - Reports of Workshops - Study Reports of Analysis and Findings	- Stakeholders are willing to participate in and share information
Outputs 6. Capacity Building & Institutional Strengthening 6.1 Formal Training	Outcome/Impact Indicators 6.1 Training Institutions identified and Courses	Programme Reports Annual Programme Report – including Programme monitoring and evaluation, and workshop reports. 6.1 Participants Course Evaluation reports	(From Outputs to Objective)

WATERSHED MANAGEMENT CRA

Hierarchy of Objectives	Key Performance Indicators	Monitoring and Evaluations	Critical Assumptions
<p>6.2 Regional Training Workshops</p>	<p>prepared. 6.1 Course participants identified 6.1 Training Courses implemented. 6.2 Training Institutions identified and Workshops prepared. 6.2 Workshops participants identified 6.2 Training Workshops implemented.</p>	<p>6.2 Participants Workshop Evaluation reports.</p>	

ANNEX 2. DETAILED COSTS

WATERSHED MANAGEMENT PROGRAMME: COSTS						
Component	US\$ '000					
	PY1	PY2	PY3	PY4	PY5	TOTAL
1. Programme Coordination						
1.1 Programme Management Staff						
WSM Programme Coordinator	150.0	150.0	150.0	0.0	0.0	450.0
Project Planning Specialist	72.0	72.0	72.0	72.0	72.0	360.0
Monitoring & Evaluation Specialist	72.0	72.0	72.0	72.0	72.0	360.0
Secretarial Services	10.0	10.0	10.0	10.0	10.0	50.0
3 National Programme Coordinators	60.0	60.0	60.0	60.0	60.0	300.0
1 Driver	10.0	10.0	10.0	10.0	10.0	50.0
WSM Prog. Coord. Regional Travel (15 trips)	30.0	30.0	30.0	0.0	0.0	90.0
WSM Prog. Coord. International Travel (1 trip)	6.0	6.0	6.0	0.0	0.0	18.0
Subject Matter Specialists: Regional Travel (4 trips)	8.0	8.0	8.0	8.0	8.0	40.0
Subtotal	418.0	418.0	418.0	232.0	232.0	1,718.0
1.2 Project Management Office Equipment, furniture, etc						
Office equipment (Computers, etc)	15.0	0.0	0.0	15.0	0.0	30.0
Office furniture	20.0	0.0	0.0	0.0	0.0	20.0
Office (rent equivalent)	6.0	6.0	6.0	6.0	6.0	30.0
Subtotal	41.0	6.0	6.0	21.0	6.0	80.0
1.3 Vehicles						
Vehicle	22.0	0.0	0.0	0.0	0.0	22.0
1.4 Project Management Expenses						
Steering Committee Meetings (2/yr)	70.0	70.0	70.0	70.0	70.0	350.0
Communications	4.0	4.0	4.0	4.0	4.0	20.0
Utilities	2.0	2.0	2.0	2.0	2.0	10.0
Vehicle operation	2.0	2.0	2.0	2.0	2.0	10.0
Printing, dissemination	3.0	3.0	3.0	3.0	3.0	15.0
Sundry expenses	3.0	3.0	3.0	3.0	3.0	15.0
Subtotal	84.0	84.0	84.0	84.0	84.0	420.0
1.5 National Programme Coordinator Expenses						
Office equipment, furniture, etc (3 sets)	18.0	0.0	0.0	0.0	0.0	18.0
Office Management Expenses	6.0	6.0	6.0	6.0	6.0	30.0
Secretarial Services	30.0	30.0	30.0	30.0	30.0	150.0
Transportation	9.0	9.0	9.0	9.0	9.0	45.0
Regional travel	12.0	12.0	12.0	12.0	12.0	60.0
Subtotal	75.0	57.0	57.0	57.0	57.0	303.0
COMPONENT 1 TOTAL	640.0	565.0	565.0	394.0	379.0	2,543.0
2. Watershed management Information and Data base						
2.1 Document centre						
Equipment (hardware, software)	15.0	0.0	0.0	0.0	0.0	15.0
Office accomadation (rent equivalent)	6.0	6.0	6.0	6.0	6.0	30.0
Materials	5.0	5.0	5.0	5.0	5.0	25.0
Sub-total	26.0	11.0	11.0	11.0	11.0	70.0
2.2 Environmental, social and Economic Data Base						
Equipment (hardware, software)	15.0	0.0	0.0	0.0	0.0	15.0
Office accomadation (rent equivalent)	0.0	0.0	0.0	0.0	0.0	0.0
Materials	5.0	5.0	5.0	5.0	5.0	25.0
Sub-total	20.0	5.0	5.0	5.0	5.0	40.0
2.3 Geographic Information System						
Equipment (hardware, software)	30.0	0.0	0.0	0.0	0.0	30.0
Office accomadation (rent equivalent)	0.0	0.0	0.0	0.0	0.0	0.0
Materials	15.0	15.0	15.0	15.0	15.0	75.0
Sub-total	45.0	15.0	15.0	15.0	15.0	105.0
COMPONENT 2 TOTAL	91.0	31.0	31.0	31.0	31.0	215.0
3. Monitoring, Evalaution and Impact assessment: WSM Interventions						
3.1 Basin-wide Sediment Monitoring System						
Equipment (hardware, software)	150.0	25.0	0.0	0.0	0.0	175.0
Communications, Report Production	15.0	15.0	15.0	15.0	15.0	75.0
Materials	10.0	10.0	10.0	10.0	10.0	50.0
Sub-total	175.0	50.0	25.0	25.0	25.0	300.0
3.2 Erosion & Sediment Moniroing & Research: Sample Watersheds						
Equipment (hardware, software)	250.0	25.0	0.0	0.0	0.0	275.0
Monitoring/Research Contracts	400.0	400.0	400.0	400.0	400.0	2,000.0
Knowledge Sharing & Dissemination, Report production	50.0	50.0	50.0	50.0	50.0	250.0
Sub-total	700.0	475.0	450.0	450.0	450.0	2,525.0
3.3 Environmenta, Social and Economic Impact Assessment: WSM Interventions						
Equipment (hardware, software)	25.0	0.0	0.0	0.0	0.0	25.0
Monitoring/Research Contracts	450.0	450.0	450.0	450.0	450.0	2,250.0
Knowledge Sharing & Dissemination	50.0	50.0	50.0	50.0	50.0	250.0
Sub-total	525.0	500.0	500.0	500.0	500.0	2,525.0
COMPONENT 3 TOTAL	1,400.0	1,025.0	975.0	975.0	975.0	5,350.0

WATERSHED MANAGEMENT CRA

4. Preparation First & Second Round WSM Projects						
4.1 Prioritizing, Preparing and Coordinating implementation of First Round Projects						
Project Planning Consultant (6 months)	96.0	96.0	96.0	0.0	0.0	288.0
Monitoring & Evaluation Consultant (6 months)	96.0	96.0	96.0	0.0	0.0	288.0
Workshops, Knowledge Sharing, Report Production	10.0	10.0	10.0	0.0	0.0	30.0
Sub-total	202.0	202.0	202.0	0.0	0.0	606.0
4.2 Identifying, Preparing and Coordinating implementation of Second Round Projects						
Project Planning Consultant (6 months)	0.0	0.0	0.0	96.0	96.0	192.0
Monitoring & Evaluation Consultant (6 months)	0.0	0.0	0.0	96.0	96.0	192.0
Workshops, Knowledge Sharing, Report Production	0.0	0.0	0.0	10.0	10.0	20.0
Sub-total	0.0	0.0	0.0	202.0	202.0	404.0
COMPONENT 4 TOTAL	202.0	202.0	202.0	202.0	202.0	1,010.0
5. Joint Hydro-Ecological-Livelihoods Study: Baro-Sobat-White Nile Sub-basin						
Equipment (hardware, software)	125.0	25.0	0.0	0.0	0.0	150.0
Study Contracts	350.0	250.0	200.0	0.0	0.0	800.0
Knowledge Sharing, Report production & Dissemination	15.0	25.0	30.0	0.0	0.0	70.0
COMPONENT 5 TOTAL	490.0	300.0	230.0	0.0	0.0	1,020.0
6. Capacity Building						
6.1 Formal Training						
Commision Training Courses (course design course materials)	150.0	150.0	0.0	0.0	0.0	300.0
Trainers Fees	100.0	100.0	100.0	100.0	100.0	500.0
Trainees expences (travel, per diem, etc)	550.0	550.0	550.0	550.0	550.0	2,750.0
Sub-total	800.0	800.0	650.0	650.0	650.0	3,550.0
6.2 Regional Training Workshops						
Commision Training Courses (course design course materials)	50.0	50.0	50.0	50.0	50.0	250.0
Trainers Fees	25.0	25.0	25.0	25.0	25.0	125.0
Trainees expences (travel, per diem, etc)	220.0	220.0	220.0	220.0	220.0	1,100.0
Sub-total	295.0	295.0	295.0	295.0	295.0	1,475.0
COMPONENT 6 TOTAL	1,095.0	1,095.0	945.0	945.0	945.0	5,025.0
PROGRAMME TOTAL	3,918.0	3,218.0	2,948.0	2,547.0	2,532.0	15,163.0

EASTERN NILE BASIN

