



# Global Environment Facility

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February 25, 2009

Dear Council Member,

The World Bank as the Implementing Agency for the project entitled: ***Regional (Sudan, Egypt): Eastern Nile Watershed Management Project*** under the ***Strategic Investment Program for SLM in Sub-Saharan Africa***, has submitted the attached proposed project document for CEO endorsement prior to final Agency approval of the project document in accordance with the World Bank procedures.

The Secretariat has reviewed the project document. It is consistent with the project concept approved by the Council in September 2009 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by the World Bank satisfactorily details how Council's comments and those of the STAP have been addressed.

If by March 25, 2009, I have not received requests from at least four Council Members to have the proposed project reviewed at a Council meeting because in the Member's view the project is not consistent with the Instrument or GEF policies and procedures, I will complete the Secretariat's assessment with a view to endorsing the proposed project document.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org). If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Attachment: Project Document

cc: Alternates, GEF Agencies, STAP, Trustee



# REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Submission Date: 12/29/2008

Re-submission Date: 02/24/2009

## PART I: PROJECT INFORMATION

### GEFSEC PROJECT ID:

GEF AGENCY PROJECT ID: P111330

COUNTRY(IES): Sudan, Egypt

PROJECT TITLE: Eastern Nile Watershed Management Project

GEF AGENCY(IES): World Bank, (select), (select)

OTHER EXECUTING PARTNER(S): National Ministries, Eastern Nile Technical Regional Office (ENTRO)

GEF FOCAL AREA(S): International Waters, Land Degradation, (select),

GEF-4 STRATEGIC PROGRAM(S): Land Degradation (SP# 1, 2, 3) and International Waters (SP# 3)

### NAME OF PARENT PROGRAM/UMBRELLA PROJECT:

STRATEGIC INVESTMENT PROGRAM FOR SLM IN SUB-SAHARAN AFRICA (SIP)

Expected Calendar	
Milestones	Dates
Work Program (for FSPs only)	June 2007
Agency Approval date	April 2009
Implementation Start	July 2009
Update of indicator values	Dec. 2010
Mid-term Evaluation (if planned)	Dec. 2011
Project Closing Date	Dec. 2014

## A. PROJECT FRAMEWORK

Project Objective: The Project Development Objective and Global Environment Objective are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Sub-basin. A second GEO is to develop a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.								
Project Components	Indicate whether Investment, TA, or STA**	Expected Outcomes	Expected Outputs	GEFFinancing*		Other Financing*		Total (\$) c=a+ b
				(\$) a	%	(\$) b	%	
<b>1. Community Watershed Management</b>	Investment, TA and STA	Increased adoption of sustainable land management practices in agricultural landscapes (Contributes to IW SP3 and SIP IR 3)	50,000-60,000 ha cumulative area of agricultural landscape under sustainable land and water management practices <sup>1</sup> .	3.7	14.5	21.9	85.5	25.6
<i>Sub-cp1.1: Natural Resource Management</i> -Capacity Building -Resource Management				3.7	24.0	11.7	76.0	15.4
<i>Sub-cp1.2: Sustainable Agriculture</i> - Innovation in Agriculture - Water Harvesting				0	0	10.2	100.0	10.2
<b>2. Knowledge</b>	TA and							

<sup>1</sup> Detailed baseline survey to be undertaken in Year 1 of the project will confirm/update site specific baseline and target values.

<b>for Cooperative Action</b>	STA			<b>4.2</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>4.2</b>
<i>Sub-cp 2.1. Regional Capacity Building</i>		The technical capacity of regional and national institutions in watershed management in the Eastern Nile countries is strengthened <b>(Contributes to IW SP3 and SIPs IR 2 and 4)</b>	<b>40</b> staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.  <b>3</b> new information products (e.g. publications, CDs, status reports) developed to increase sharing of information on watershed management, including on best management practices, among the riparian countries in the Eastern Nile Sub-basin	<b>1.5</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>1.5</b>
<i>Sub-cp 2.2. Lake Nasser/Nubia Management</i>		Development and adoption of guidelines for integrated and sustainable management of Lake Nasser/Nubia Sub-basin to guide decision-making <b>(Contributes to IW SP3 and SIPs IR 2 and 4)</b>	<b>At least 3</b> sectoral or thematic guidelines for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin are completed and adopted by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.  Existence of a functional inter-ministerial committee or its equivalent.	<b>2.7</b> <sup>3</sup>	<b>100.0</b>	<b>0</b> <sup>4</sup>	<b>0</b>	<b>2.7</b>
<b>3. Project management</b>				<b>0.8</b>	14.3	<b>4.8</b>	85.7	<b>5.6</b>

<sup>2</sup> Project support to improve yield will focus on conservation agriculture (i.e. measures to improve small-scale soil moisture and fertility, therefore, they are not expected to result in environmental trade-offs. Nevertheless, an Environmental and Social Management Framework has been prepared to screen all interventions to ensure that they are environmentally and socially sound.

<sup>3</sup> This amount will come from the GEF's IW allocation . The rest of the GEF funds under the other components will come from the Land Degradation Focal Area.

<sup>4</sup> Egypt will continue to allocate \$2 million/year to support work on Lake Nasser/Nubia, which can be tracked during implementation.

<b>Total Project Costs</b>	<b>8.7</b>		<b>26.7</b>		<b>35.4</b>
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\* List the \$ by project components. The percentage is the share of GEF and Co-financing respectively to the total amount for the component.

\*\* TA = Technical Assistance; STA = Scientific & technical analysis.

## B. FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	<i>Project Preparation a</i>	<i>Project Grant b</i>	<i>Total c = a + b</i>	<i>Agency Fee</i>	<i>For the record: Project Grant at PIF</i>
GEF	0	8,700,000	8,700,000	870,000	8,700,000
Co-financing	2,500,000	26,700,000	29,200,000		62,300,000
<b>Total</b>	<b>2,500,000</b>	<b>35,400,000</b>	<b>37,900,000</b>	<b>870,000</b>	<b>71,000,000</b>

Note that the higher co-financing estimate at PIF stage is due to the fact that the project at PIF stage was expected to cover all three countries: Egypt, Ethiopia and Sudan. However eventually two conceptually linked projects are now being implemented: one for Ethiopia, and one for Sudan and Egypt. The two projects are still closely linked and based on a common approach for the Eastern Nile Watershed, but this table now only shows the co-financing for Sudan and Egypt.

## C. SOURCES OF CONFIRMED CO-FINANCING FOR PROJECT

<i>Name of co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Project Preparation</i>	<i>Project</i>	<i>Total</i>	<i>%*</i>
Government of Sudan	Nat'l Gov't	Cash	0	13,500,000	13,500,000	50.6
Government of Finland**	Others (specify)	Grant	0	13,000,000	13,000,000	48.7
Government of Egypt	Nat'l Gov't	Cash	0	200,000	200,000	0.7
	(select)	(select)				
<b>Total Co-financing</b>				<b>26,700,000</b>	<b>26,700,000</b>	<b>100%</b>

• Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

\*\* : This amount represents Euro 9.25 million approved by Finland. Due to changes in exchange rates between project planning and negotiations the US\$ value for the Finnish contribution has been reduced to \$13m from previously \$15m as part of negotiations.

## D. GEF RESOURCES REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES)

<i>GEF Agency</i>	<i>Focal Area</i>	<i>Country Name/ Global</i>	<i>(in \$)</i>			
			<i>PPG (a)</i>	<i>Project (b)</i>	<i>Agency Fee (c)</i>	<i>Total d=a+b+c</i>
World Bank	Land Degradation	Sudan		6,000,000	600,000	6,600,000
World Bank	International Water	Egypt, and Sudan		2,700,000	270,000	2,970,000
<b>Total GEF Resources</b>				<b>8,700,000</b>	<b>870,000</b>	<b>9,570,000</b>

\* No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

## E. PROJECT MANAGEMENT BUDGET/COST

<i>Cost Items</i>	<i>Total Estimated person/weeks</i>	<i>GEF (\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	8890	496,000	3,614,335	4,110,335
<i>International consultants*</i>	158	280,000	420,000	700,000
<i>Office facilities, equipment, vehicles and communications*</i>		24,000	805,261	829,261
<i>Travel*</i>				
<b>Total</b>		<b>800,000</b>	<b>4,839,596</b>	<b>5,639,596</b>

\* Details to be provided in Annex C.

## F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

<i>Component</i>	<i>Estimated person weeks</i>	<i>GEF(\$)</i>	<i>Other sources (\$)</i>	<i>Project total (\$)</i>
<i>Local consultants*</i>	10530	1,620,000	4,866,750	6,486,750
<i>International consultants*</i>	3307	2,700,000	2,980,235	5,680,235
<b>Total</b>		4,320,000	7,846,985	12,166,985

\* Details to be provided in Annex C.

#### **DESCRIBE THE BUDGETED M&E PLAN:**

The M&E system, which would build on existing systems in the lead project implementing agencies and under the Nile Basin Initiative, aims at (a) assessing implementation performance in relation to the expected project outcomes, outputs, and budget; (b) proactively identifying implementation challenges and implementing corrective actions in a timely manner; and (c) documenting lessons learned and incorporating them into decision making on project implementation and sustainability. An amount of \$500,000 has been allocated for M&E activities.

Overall project performance and outcome: A joint commission comprising the Ministry of Water Resources and Irrigation (MWRI) in Egypt, the Ministry of Irrigation and Water Resources (MoIWR) in Sudan, and the Eastern Nile Technical Regional Office (ENTRO) would establish a joint monitoring team to undertake two independent reviews of overall project performance and impacts, based on the Results Framework, at mid-term and at the beginning of Year 5 of implementation. The results from these reviews would be used during the mid-term review and implementation completion review to be undertaken jointly by the World Bank and project implementing entities.

Community watershed management component: The Local Implementation Units and the Village Popular Committee (or its equivalent) would undertake monthly review of project implementation performance against the annual work plans and targets and prepare a report. Project performance would be reviewed quarterly by the Local Project Steering Committee and it will provide guidance on corrective actions to address implementation problems.

The monthly community level reports would be submitted to the National Project Coordinating Unit in MoWRI, which would be an input for the consolidated quarterly and annual reports for the project. These reports would be reviewed quarterly by the National Project Steering Committee and would provide guidance, as needed, to address implementation shortcomings.

Regional capacity building sub-component: ENTRO would prepare quarterly reports on the implementation performance and progress towards the intermediate outcomes for this sub-component. It would also prepare quarterly and annual consolidated reports covering all project activities at the regional level and in Egypt and Sudan for the Eastern Nile Council of Ministers, which is the steering committee for the project.

Lake Nasser/Nubia sub-component: The MWRI and MoIWR would jointly prepare quarterly and annual reports on the implementation of project activities. The reports would be reviewed by the Joint Technical Oversight Committee, which is made up of representatives from both agencies. Through this committee, agreement would be reached on corrective actions to address implementation issues.

#### **PART II: PROJECT JUSTIFICATION:**

## **DESCRIBE THE PROJECT RATIONALE AND THE EXPECTED MEASURABLE GLOBAL ENVIRONMENTAL BENEFITS:**

The main environmental challenge in the Eastern Nile Sub-basin, the focus of the proposed project, is land degradation, which has major implications for agricultural productivity, water quality, and biodiversity conservation. The most degraded parts of the Eastern Nile Basin are the Ethiopia highlands. About 20,000 sq. km of land in this area is severely degraded because of accelerated soil erosion, leaving only a topsoil depth of less than 10 cm. This situation is expected to worsen if no action is taken, with the size of the severely degraded areas growing to 100,000 sq. km. by 2010. This rate of soil fertility loss cannot sustain agricultural production, making the country more vulnerable to food insecurity.

In addition to the Ethiopian highlands, the other “hotspots” of land degradation in the Eastern Nile Sub-basin are the forest and woodland areas south of Khartoum, and the Atbara and the Blue Nile basins in Sudan. In the case of wetlands, the following major ones are: (a) the Lake Nasser basin, Nile delta, Qarun, and Rayan in Egypt; (b) the Gambella floodplain, Lake Tana, Fincha area, Dobus swamp/Alatish River in Ethiopia; and (c) the Sudd, Machar marshes, and Dinder wetlands in Sudan.

The proposed project would help to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Sub-basin, and the development of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.

The expected measurable global environmental benefit is reduced land degradation in selected sub-watershed of the Eastern Nile sub-basin, specifically:

- Increase in the number of households (farmers and pastoralists) adopting sustainable land and water management practices.
- Increase in the size of forest areas rehabilitated.
- Increase in the size of rangelands rehabilitated.

**DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:** The Nile River is critical for economic and social development in the ten riparian countries. After decades of tension over the use of the waters of the Nile River, the countries began to work towards cooperative management of water and other natural resources for their mutual benefits. This evolving regional cooperation, which began in 1999, is under the auspices of the Nile Basin Initiative (NBI). Under the NBI, the riparian countries adopted a “Shared Vision”, whose goal is “... to achieve sustainable social-economic development through the equitable utilization of, and benefit from, the common Nile basin water resources.”

This shared vision is supported by the following four specific objectives: (a) develop the water resources of the Nile basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples; (b) ensure efficient water management and the optimal use of the resources; (c) ensure cooperation and joint action between the riparian countries, seeking win-win gains; and (d) target poverty eradication and promote economic integration.

Under the NBI, the Eastern Nile countries – Ethiopia, Egypt, and Sudan – initiated in 2001 the Eastern Nile Subsidiary Action Program (ENSAP). ENSAP is an integrated investment-oriented regional multipurpose program aimed at deepening cooperation and generating tangible on-the-ground benefits for the riparian countries. The first set of investments under ENSAP comprises the following seven projects Watershed Management, Flood Preparedness and Early Warning, Eastern Nile Planning Model, Baro-Akobo Multipurpose Water Resources Development, Ethiopia-Sudan Transmission Interconnection, Eastern Nile Power Trade Study, and Eastern Nile Irrigation and Drainage.

The proposed Eastern Nile Watershed Management Project (ENWMP) represents the above watershed management project in the ENSAP investment package.

To complement their regional level commitments and strategies, Egypt, Ethiopia, and Sudan have adopted national policies, regulatory frameworks, and institutional arrangements to support sustainable management and use of land and water resources in the Eastern Nile Sub-basin.

Sustainable land and water resources management is also a priority in the World Bank's Country Assistance Strategies for Egypt and Ethiopia, and the Interim Strategy Note for Sudan. It is also highlighted as one of the priority areas to support growth and poverty alleviation in Sudan's Joint Assessment Mission: Framework for Sustained Peace, Development and Poverty Eradication report. This report was jointly prepared by the Government and its development partners, including the World Bank, following the signing in January 2005 of the Comprehensive Peace Agreement, which ended the civil war.

For Ethiopia, the Government's most recent strategy to address land degradation is outlined in the Plan for the Accelerated and Sustained Development to End Poverty (PASDEP) 2005/06-2009/10, the country's Poverty Reduction Strategy. The main elements of PASDEP's strategy to address land degradation are as follows: (a) strengthening tenure security by expanding the on-going land certification project; (b) building capacity in community-based approaches to watershed management; (c) scaling up successful models for watershed management; and (d) strengthening natural resource information management, specifically rigorous evaluation, synthesis, and dissemination of best management practices and innovations in sustainable land management (SLM).

**DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:**

The objectives and proposed interventions under the Eastern Nile Watershed Management Project are consistent with the GEF 4 strategic priorities of the Focal Areas on Land Degradation and on International Waters. The specific strategic priority for the GEF's land degradation programs that is related to the proposed project, including the TerrAfrica/GEF Strategic Investment (GEF/SIP) Program, is upscaling of sustainable land management investments that generate mutual benefits for the global environment and local livelihoods (Strategic Objective 2).

Specific priorities for the Land Degradation Focal Area and TerrAfrica/SIP that would be addressed in the proposed project include regional-level activities such as improving knowledge management; strengthening of African coalitions, institutions and leadership; and investment coordination; and national and community-level priorities including the following: (a) support for on-the-ground activities to scale up sustainable land and water management practices; capacity building for community-level and other relevant institutions; (b) integration of sustainable land and water management priorities into national and sectoral planning frameworks in the riparian countries, and regional cooperative basin planning frameworks; (c) development of effective knowledge management systems, including sharing of knowledge and innovation, and dissemination of best practices and lessons learned; and (d) improvements in the capacity of local communities to adapt to climate change, including diversification of crop production, water harvesting/supplementary irrigation, and diversified livelihood. In addition, the programmatic approach to scaling up of SLM and related activities initiated in the context of TerrAfrica/SIP in Ethiopia will also support the regional approach under this regional operation.

The proposed project is in line with the long-term objective of the GEF's International Waters Focal Area – to foster international, multi-state cooperation on priority water concerns. It is also consistent with the GEF's Strategic Program for International Waters for the GEF's Fourth Replenishment which is “to balance overuse,

and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature” (IW-SP 3). Lastly, the project will report using the IW tracking tool.

**OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

The implementation of related interventions in Egypt, Ethiopia, and Sudan would be undertaken in a coordinated manner through the regional knowledge development and capacity building activities under the proposed operation. In addition, implementation of the interventions in Ethiopia, through the TBIWRDP, will be coordinated with already existing and/or planned sustainable land management (SLM) initiatives in Ethiopia, particularly the IFAD-GEF Community-based Natural Resource Management in Lake Tana Watershed project, one of the operations under the GEF-SIP in Ethiopia. The Government of Ethiopia, in the context of TerrAfrica, is moving towards a more harmonized and coordinated approach to SLM. A SLM Technical Committee, of which ENTRO is a member, has been established with the mandate of overseeing and coordinating SLM initiatives in the country. With the support of TerrAfrica, a common framework for investments in SLM, known as the Ethiopia SLM Investment Framework (ESIF), is being developed, and the TBIWRDP is one of the operations through which the objectives of the ESIF will be achieved. Activities initiated in the context of TerrAfrica in Ethiopia, will support the regional approach under this regional operation. Lastly, the project will support participation in the IW LEARN.

**DESCRIBE THE INCREMENTAL REASONING OF THE PROJECT:**

Please refer to Annex 15 of the Project Appraisal Document.

**INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MANAGEMENT MEASURES:**

Description of Risk	Mitigation measures
The collapse of the NBI process under whose auspices this project is being developed would undermine joint capacity building and information sharing activities supporting project implementation.	<p>There is strong commitment to the NBI at the highest political level for the NBI process.</p> <p>The proposed project is high priority for the NBI because it is expected to contribute to addressing environmental degradation and poverty in the Eastern Nile Sub-Watershed.</p>
Country commitment for a regional project may weaken in favor of national level projects.	<p>Priority interventions expected to be implemented under the proposed project are consistent with the national priorities of the governments of Egypt and Sudan.</p> <p>The interventions build on ongoing activities initiated by the countries.</p> <p>The high level of co-financing from the Governments of Egypt and Sudan signals strong government commitment.</p>
Insufficient institutional capacity at the national and local levels to implement project activities, especially at the community level in Sudan.	<p>The project would finance interventions to strengthen the capacity of local government and community institutions that would lead the implementation of the project.</p> <p>Project support for the exchange of experts and information sharing among the riparian countries of the Eastern Nile would help to strengthen the capacity of institutions in watershed management.</p>
MoIWR, Sudan and MWRI, Egypt lack the experience in the use of World Bank procurement procedures	<p>Training of the relevant MoIWR Nile water Sector, MWRI staff in Bank procurement procedures.</p> <p>Recruitment of procurement specialist for the project.</p>

Description of Risk	Mitigation measures
MoIWR Sudan, and the Nile Water Sector in MWRI lacks the experience in World Bank financial management practices	MoIWR staff will be trained in World Bank financial management and disbursement procedures

**EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN:**

The design of the proposed project is cost-effective because it supports community level interventions that are environmentally sound and economically viable. This combination provides the intended beneficiaries with a strong incentive to expand and sustain project benefits.

For example, the financial efficiency of the improved farm models was analyzed in terms of the Net Present Value (NPV), Internal Rate of Return (IRR), and Benefit-Cost Ratio (BCR) and they were found to be positive. The results are: NPV: SDG 12,400-27,320, IRR: 56.2-113.2%, and BCR: 1.7 – 2.3. The Economic Rate of Return (ERR) from the selected farm models is also positive. The ERR ranged from 32-50%, the NPV is positive, and the BCR is greater than one.

The above analyses are limited because they do not capture other benefits associated with improved watershed management that are difficult to monetize because of methodological reasons. These benefits include a variety of ecological services such as improving soil formation and nutrient cycle; water regulation and purification and micro-climate regulation; and religious, recreational, aesthetic, educational, and cultural values

**PART III: INSTITUTIONAL COORDINATION AND SUPPORT**

**PROJECT IMPLEMENTATION ARRANGEMENT:**

The proposed project would be implemented through existing institutional arrangements established by the Eastern Nile countries at the regional, national, and local levels.

Regional strategic policy guidance

At the Sub-basin level, the project would be implemented through existing organizational structures already established and operational by the riparian countries of the Eastern Nile sub-basin – Ethiopia, Egypt, and Sudan. The Eastern Nile Council of Ministers (ENCOM) would provide overall policy strategic guidance for the implementation of the proposed project. ENCOM would be assisted by its technical team, the Eastern Nile Strategic Action Program Team (ENSAPT). The three lead project implementing agencies, the Eastern Nile Technical Regional Office (ENTRO), the Ministry of Water Resources and Irrigation (MWRI) in Egypt, and the Ministry of Irrigation and Water Resources (MoIWR) in Sudan will submit to ENCOM a joint report on the status of project implementation and progress in achieving project outcomes every six months.

Operational level

At the operational level, project activities would be implemented through existing institutional arrangements within the following organizations:

(i) Regional Capacity Building Sub-component: The Eastern Nile Technical Regional Office (ENTRO) would lead the implementation of the Regional Capacity Building interventions through its Water Resources

Planning and Management Unit. The Unit would be supported on procurement and financial management by its Finance and Administration Unit.

Lake Nasser/Nubia Sub-component: The Ministry of Water Resources and Irrigation (MoWRI) in Egypt and the Ministry of Irrigation and Water Resources (MoIWR) in Sudan would jointly lead the implementation of the Lake Nasser/Nubia Sub-component. The two agencies have the mandate from their respective governments to oversee natural resources management activities in the Lake Nasser/Nubia basin.

Sudan: Community Watershed Management Component: As noted above, the lead implementing agency for this component would be MoIWR. MoIWR has offices at the national and locality (district) level. It would be supported, as needed, by the Ministry of Agriculture and Forestry on issues related to agriculture, range management, and forestry, by the Ministry of Environment and Physical Development and its Higher Council for Environment and Natural Resources on issues related to environmental policies, regulations, and impact assessment and by the Ministry of Tourism and Wildlife, and by the Ministry of Interior on issues related to protected area management.

The MoIWR would establish a multi-sectoral Project Steering Committee (PSC) to provide policy guidance on project implementation. Membership of the PSC, to be chaired by the Minister, MoIWR or his/her representative, would include the Ministry of Finance and Economy, the Ministry of Agriculture and Forestry, Ministry of Tourism and Wildlife, Ministry of Interior (General Administration for National Parks and Wildlife), the Higher Council for Environment and Natural Resources, the Forest National Cooperation, the Joint Committee for the Dinder National Park, the state Ministries of Agriculture, Animal Resources and Irrigation from the four participating state governments, and the Government of Finland, one of the co-financers of the project.

A National Project Coordination Unit (NPCU) would be established and mainstreamed within the MoIWR. The PCU would be responsible for overseeing day-to-day implementation of project activities. A Local Project Steering Committee (LPSC) would be established to guide implementation at the locality level and to assist the Local Project Implementation Unit to address local implementation issues and facilitate, as needed, linkages between the project implementing institutions, the intended beneficiaries, local government, and non-governmental organizations.

Local Implementation Units (LIUs) would be established and mainstreamed into the local government administrations to lead, in cooperation with the Village Popular Committees, local implementation of project activities.

#### **PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:**

**Financing**: The project at the PIF stage was initially proposed as a blended operation with IDA. It was originally envisaged as involving Ethiopia, Egypt, and Sudan, as well as a regional component in the proposed project. However while preparation continued, the development of the Ethiopia portion (supported by IDA), was accelerated because the Government wanted to incorporate it into the complementary Tana & Beles Integrated Water Resources Development Project (TBIWRDP). It was, therefore, processed separately from the proposed project. The TBIWRDP was approved by the World Bank Board in May, 2008, with a loan from the World Bank (\$42.9 million), a grant from the Government of Finland (\$8 million), and counterpart funds from the Ethiopian Government and communities (\$16.85 million). Nevertheless, the TBIWRDP remains an organic part of the proposed project, specifically the Natural Resources Investment Component (\$67.6 million), because it is part of the watershed management investment approved by the ENCOM. As a result the net financing for the project has increased (see Annex 15 on Incremental Cost analysis).

**Others Changes:** The following adjustments to the project have been made as part of the recommendations that emerged from the Bank's Quality Enhancement Review of the project. The project design has thus been simplified and streamlined through the preparation phase. As a result, small adjustments to the overall design of the operation has been made in order to reduce complexity and focus on achieving the objective which are highlighted below.


**Project Objectives:** Based on the Bank's QER review and its recommendations the project's development objective has been revised to focus more on the adoption of sustainable land and water management practices, and also to be more measurable, but remains consistent with the original PIF. The global environment objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Sub-basin, and the adoption of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin. The overall outcomes of the project have remained unchanged. The indicators have been refined in the results framework to adjust the change in components as explained below

**Project Components:** The project components have also been consolidated but remain aligned with the original PIF. The matrix below explains the specific changes to the components. These will be confirmed during appraisal scheduled in January 2009. For details on project components and sub-components, please refer to Annex 4 of the Project Document.

At PIF	At CEO	
Component	Revised Component	Revised Financing
<p><b>1. Strategic Watershed Investment</b></p> <p><b>GEF: US\$ 6.4</b> <b>Cofinancing: US\$ 52.8</b></p>	<p><b>1. Community Watershed Management</b></p> <p><i>Sub-cp1.1: Natural Resource Management</i></p> <p><i>Sub-cp1.2: Sustainable Agriculture</i></p> <p><b>Explanation of change in GEF allocation:</b> The components were restructured as the project design became clearer. Thus, the original GEF allocation in the PIF was \$6.4 million, but it has been reduced to \$3.7 million because some of it was shifted to the following: (a) the original IW related activities related to Lake Nasser/Nubia were moved to the new Knowledge for Cooperative Action component and the cost came to \$2.7 million after detailed design was completed.</p>	<p><b>GEF: US\$ 3.7</b> <b>Baseline: US\$ 21.9</b></p> <p><b>GEF: US\$ 3.7</b> <i>(LD US\$3.7 and IW: US\$0)</i> <b>Baseline: US\$ 11.7</b></p> <p><b>GEF: 0.0</b> <b>Baseline: US\$ 10.2</b></p> <p><b>Explanation of change I IDA allocation:</b> The co-financing amount was reduced due mainly to IDA and Finnish co financing for the Ethiopia portion which moved to the TBIWRDP.</p>
<p><b>2. Regional Cooperative Action</b></p>	<p><b>Knowledge for Cooperative Action</b></p>	<p><b>GEF: US\$ 4.2</b> <b>Baseline: US\$ 00</b></p>

<p><b>GEF: US\$ 2.0</b> <b>Cofinancing: US\$ 4.0</b></p>	<p><i>Sub-cp 2.1. Regional Capacity Building</i></p> <p><i>Sub-cp 2.2. Lake Nasser/Nubia Management</i></p> <p><b>Explanation of change:</b> At PIF stage the Lake Nasser/Nubia sub-component was part of the Strategic Watershed Investment Component, but a new component, the Knowledge for Cooperative Action was developed during the detailed design stage to provide greater focus during implementation. \$0.5m were moved to project management cost as part of adjusting overall figures following exchange rates losses for the Finnish contribution.</p>	<p><i>GEF: US\$ 1.5</i> <i>(LD US\$1.5 and IW: US\$ 0.0)</i> <i>Baseline: 0.0</i></p> <p><i>GEF: US\$ 2.7</i> <i>(LD US\$0.0 and IW: US\$ 2.7)</i> <i>Baseline: US\$ 0.0</i></p> <p><b>Explanation:</b> The increase in GEF funding is due to moving the Lake Nasser/Nubia management to the Knowledge for Cooperative Action Component.</p>
<p><b>3. Project Management</b></p> <p><b>GEF: US\$ 0.3</b> <b>Cofinancing: US\$ 5.5</b></p>	<p><b>3. Project Management:</b></p> <p>The component remains unchanged in scope.</p>	<p><b>GEF: US\$ 0.8</b> <b>Baseline: US\$ 4.8</b></p> <p><b>Explanation of change:</b> Project management cost was increased as a result of the restructuring and addition of project components and activities during the project design stage. Despite this increase, the GEF contribution is less than 10%.</p>

**PART V: AGENCY(IES) CERTIFICATION**

<p>This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.</p>	
 <p>Steve Gorman Executive Coordinator The World Bank</p>	<p>Christophe Crepin, Regional GEF Coordinator Africa Region</p>
<p>Date: February 6, 2009</p>	<p>Tel. and Email: (202) 473 9727, ccrepin@Wworldbank.org</p>

## ANNEX A: PROJECT RESULTS FRAMEWORK

PDO / GEO	Project Outcome Indicators <sup>5</sup>	Use of Project Outcome Information
<ul style="list-style-type: none"> <li>The Project Development Objective is to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin.</li> <li>The Global Environment Objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, and to develop a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.</li> </ul>	<ul style="list-style-type: none"> <li>50,000-60,000 ha cumulative area of degraded agricultural landscape rehabilitated and under sustainable land and water management practices.</li> <li>Adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.</li> </ul>	<ul style="list-style-type: none"> <li>To assess the extent to which project interventions are contributing to sustainable land and water management in the Eastern Nile Basin.</li> </ul>

<sup>5</sup> Detailed baseline surveys will be undertaken in Year 1 of project implementation to confirm/update site specific baseline values.12

Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
<b>Community watershed management component</b>		
Increased adoption of sustainable land management practices in agricultural landscapes.	<ul style="list-style-type: none"> <li>• 50,000-60,000 ha cumulative area of agricultural landscape under sustainable land and water management practices.</li> <li>• 70% Increase in the yields of dominant crops and livestock.</li> </ul>	To evaluate the impacts of increased adoption of sustainable land management practices on crop and livestock production in rain-fed and small- scale irrigated farmlands.
<b>Knowledge for Cooperative Action Component</b>		
The technical capacity of regional and national institutions in watershed management in the Eastern Nile countries is strengthened.	<ul style="list-style-type: none"> <li>• 40 staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.</li> <li>• 3 new information products (e.g. publications, CDs, status reports) developed to increase sharing of information on watershed management, including on best management practices, among the riparian countries in the Eastern Nile Basin.</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the extent to which knowledge management and dissemination interventions implemented under the project has contributed to increased technical capacity in watershed management institutions in the riparian countries.</li> </ul>
Development and adoption of guidelines for integrated and sustainable management of Lake Nasser/Nubia Sub-basin to guide decision-making	<ul style="list-style-type: none"> <li>• 3 Sectoral or thematic guidelines for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin are completed and adopted by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.</li> <li>• Existence of a functional inter-ministerial coordinating committee</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the result of project support for the development of guidelines for integrated and sustainable management of Lake Nasser/Nubia Sub-basin</li> </ul>

	or its equivalent.	
<b>Project management</b>		
An effective project management system is established.	<ul style="list-style-type: none"> <li>• <b>At least 90%</b> of planned project activities are implemented</li> <li>• M&amp;E system is established and functional.</li> <li>• <b>100%</b> of Micro-projects comply with the Environmental and Social Management Framework to screen proposed micro-project interventions before approval.</li> </ul>	<ul style="list-style-type: none"> <li>• To monitor progress in the implementation of planned project activities and emerging outcomes.</li> </ul>

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF)

**THE FOLLOWING MINOR COMMENTS WERE RECEIVED FROM STAP:**

1. Comment: State explicitly the intended global Environment Benefit, and Define how will the benefits be tracked and measured.
2. Response: The main expected measurable benefits of GEF support will result from: (a) reduced soil erosion and sedimentation in the Eastern Nile Sub-basin because of rehabilitation and sustainable management of selected micro-watersheds; (b) development and adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of guidelines for integrated and sustainable management of the transboundary water and land resources of Lake Nasser/Nubia basin; and (c) improved protocols and information products for sharing best management practices and lessons learned in integrated land and water resources management in the Eastern Nile Sub-basin. Refer to Annex 3 (Results Framework and Monitoring) of Project Document for more details.
3. Comment: There is no mention of how or whether a baseline will be gained from which to assess the benefits achieved by the project.
4. Response: Addressed. Refer to Annex 3 of Project Document.
5. Comment: Provide a more substantive description of the program components/activities.
6. Response: Addressed. Refer to Annex 4 of Project Document,

**ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT**

<i>Position Titles</i>	<i>\$/ person Week*</i>	<i>Estimated person Week</i>	<i>Tasks to be performed</i>
<b>For Project Management</b>			
<b>Local</b>			
<b>EGYPT</b>			
Procurement Specialist at National level	370	270	Acquisition management
Procurement specialist Lau	370	270	Acquisition management
Procurement specialist Bau	370	270	Acquisition management
Procurement specialist Dinder	370	270	Acquisition management
Procurement Specialist Atbara	370	270	Acquisition management
FMS at National level	370	270	Accounting, Budgeting & Financial mgmt
FMS Lau	370	270	Accounting, Budgeting & Financial mgmt
FMS Bau	370	270	Accounting, Budgeting & Financial mgmt
FMS Dinder	370	270	Accounting, Budgeting & Financial mgmt
FMS Atbara	370	270	Accounting, Budgeting & Financial mgmt
M&E Specialist National level	370	270	Project activities monitoring & evaluation
M&E Lau	370	270	Project activities monitoring & evaluation
M&E Bau	370	270	Project activities monitoring & evaluation
M&E Dinder	370	270	Project activities monitoring & evaluation
M&E Atbara	370	270	Project activities monitoring & evaluation
Safeguards Specialist National	370	270	ESMF Diligence
Safeguards Specialist Lau	370	270	ESMF Diligence
Safeguards Specialist Bau	370	270	ESMF Diligence
Safeguards Specialist Dinder	370	270	ESMF Diligence
Safeguards Specialist Atbara	370	270	ESMF Diligence
National Project Manager	925.92	270	Overall Project Management
Local Project Manager Lau	740.74	270	Local Project Management
Local Project Manager Bau	740.74	270	Local Project Management
Local Project Manager Dinder	740.74	270	Local Project Management
Local Project Manager Atbara	740.74	270	Local Project Management
<b>SUDAN</b>			
National Project Manager	925.92	270	Overall Project Management
Procurement Specialist at National level	370	250	Acquisition management
FMS at National level	370	250	Accounting, Budgeting & Financial mgmt
M&E Specialist National level	370	250	Project activities monitoring & evaluation
Safeguards Specialist National	370	250	ESMF Diligence
<b>ENTRO</b>			
Regional Project Manager	925.92	270	Overall Project Management
Procurement Specialist at National level	370	250	Acquisition management
FMS at National level	370	250	Accounting, Budgeting & Financial mgmt
M&E Specialist National level	370	250	Project activities monitoring & evaluation
Safeguards Specialist National	370	250	ESMF Diligence
<b>International</b>			
Project Impact Evaluation Sp.	3703.70	54	Project impact at mid term and at closing by a firm
Auditors	4807.70	104	Regular project account audits by a firm

Justification for Travel, if any:			
<b>For Technical Assistance</b>			
<b>Local</b>			
5 Watershed management Spec	625	1350	Participatory watershed management
5 Conflict Management Spec.	625	1350	Community development and conflict
5 Social Scientists	625	1350	Social work
2 Community Forestry Spec.	625	540	Community forestry
2 Range management Spec.	625	540	Range Management
2 Agronomists	625	540	Agronomist
2 Livestock Specialist	625	540	Livestock management
2 Environmental Specialist	625	540	Environment Management
2 Tree crop specialist	625	540	Tree Crops
2 Water Engineers	625	540	Water resource engineering
2 Agro-Economist	625	540	Agro economist
2 Veterinarians	625	540	Veterinarian
2 Community Organizers	625	540	Community organization
2 Community development Spec.	625	540	Community development
2 Knowledge Management Spec.	450	540	Information & Knowledge Management
<b>International</b>			
4 Sediment Monitoring Spec.	1926	540	Eastern Nile sediment monitoring
4 Water Quality monitoring	1852	540	Eastern Nile Water Quality monitoring
4 Socio-Economist	1481	540	Socio-Economic Survey
4 Environmental Survey Spec.	1481	540	Environmental Survey
4 Lake Nasser Nubia Mgmt	1481	540	Preparation of the Lake Framework
4 TA Scientific Data Management Specialist	2074	540	Collection and management of scientific data related to the Lake
<i>To be determined at mid-term</i>	1805	67	To be determined
Justification for Travel, if any:			

**ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS:  
NO PPG FUNDS WERE USED FOR PROJECT PREPARATION ACTIVITIES.**

- A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.**
- B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:**
- C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:**

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
<b>Total</b>						

\* Uncommitted amount should be returned to the GEF Trust Fund. Please indicate expected date of refund transaction to Trustee.

Document of  
The World Bank

Report No: 45017-AFR

PROJECT DOCUMENT

ON THREE

PROPOSED GRANTS FROM THE  
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US\$4.0 MILLION  
TO  
THE GOVERNMENT OF SUDAN

IN THE AMOUNT OF US\$2.7 MILLION  
TO  
THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT

IN THE AMOUNT OF US\$2.0 MILLION  
TO  
THE EASTERN NILE TECHNICAL REGIONAL OFFICE

FOR THE  
EASTERN NILE WATERSHED MANAGEMENT PROJECT

January 29, 2009

Environmental & Natural Resources Management (AFTEN)  
Sustainable Development Department  
Africa Region

## CURRENCY EQUIVALENTS

(Exchange Rate Effective February 2009)

**Currency Unit** =  
US\$1 =  
SDR1 =

### FISCAL YEAR

July 1 – June 30 (Egypt and ENTRO)  
January 1 – December 31 (Sudan)

### ABBREVIATIONS AND ACRONYMS

AAP	Africa Action Plan
CBS	Central Bank of Sudan
CIFA	Country Integrated Fiduciary Assessment
CPA	Change of Productivity Approach
CPIA	Country Policy and Institutional Assessment
DA	Designated Account
DO	Development Objective
EIA	Environmental Impact Analysis
ENCOM	Eastern Nile Council of Ministers
ENSAP	Eastern Nile Subsidiary Action Program
ENSAPT	Eastern Nile Subsidiary Action Program Team
ENTRO	Eastern Nile Technical Regional Office
ENWMP	Eastern Nile Watershed Management Project
FM	Financial Management
GEF	Global Environment Facility
GEO	Global Environment Objective
GFS	Government Finance Statistics
GONU	Government of Natural Unity
IAU	Internal Audit Unit
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IDA	International Development Agency
IFRs	Interim Financial Reports
IP	Implementation Performance
ISP	Institutional Strengthening Project
IWLEARN	International Waters Learning and Exchange Resource Network
LA	Local Account
LIU	Local Implementation Unit
LPSC	Local Point Steering Committee
M&E	Monitoring and Evaluation
MDTF	Multi-Donor Trust Fund
MoIWR	Ministry of Irrigation and Water Resources
MWRI	Ministry of Water Resources and Irrigation

NBI	Nile Basin Initiative
NTEAP	Transboundary Environmental Action Plan
NPCU	National Project Coordination Unit
NWS	Nile Water Sector
OED	Operations Evaluation Department
PCU	Project Coordination Unit
PDO	Project Development Objective
PFM	Public Financial Management
PME	Planting, Monitoring & Evaluation
PSC	Project Steering Committee
RID	Regional Integration Department
SBD	Standard Bidding Document
SDG	Sudanese Pound
SIP	Strategic Investment Program
SVP	Strategic Vision Program
TBIWRDP	Tana and Beles Integrated Water Resources Development Project
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific, and Cultural Organization
WA	Withdrawal Application
WRPM	Water Resource Planning and Management

Vice President:	Obiageli Katryn Ezekwesili
Country Directors:	Kenichi Ohashi and Emmanuel Mbi
Sector Director:	Inger Andersen
Sector Manager:	Marjory-Anne Bromhead
Task Team Leader:	Herbert Acquay

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# EASTERN NILE WATERSHED MANAGEMENT PROJECT

## PROJECT APPRAISAL DOCUMENT

AFRICA

AFTEN

World Bank Data										
Date: March 10, 2009 Vice President: Obiageli Katryn Ezekwesili Country Directors: Kenichi Ohashi and Emmanuel Mbi Sector Manager/Director: Marjory-Anne Bromhead Project ID: P111330 Focal Area: Land Degradation & International waters <u>Environmental Assessment</u> : Partial Assessment Lending Instrument: Specific Investment Loan					<u>Task Team Leader</u> : Herbert Acquay <u>Sectors</u> : General agriculture, fishing and forestry sector (80%), General water, sanitation and flood protection sector (20%) <u>Themes</u> : Other environment and natural resources management (P); Other rural development (S)					
Project Financing Data										
<input type="checkbox"/> Loan					<input type="checkbox"/> Credit		<input checked="" type="checkbox"/> Grant		<input type="checkbox"/> Guarantee	<input type="checkbox"/> Other:
For Loans/Credits/Others:										
Total Bank financing (US\$m.): 8.70										
Proposed terms: N/A										
Financing Plan (US\$m)										
Source		Local		Foreign		Total				
RECIPIENT – Sudan		13.50		0.00		13.50				
RECIPIENT – Egypt		0.20		0.00		0.20				
Global Environment Facility (GEF)		0.00		8.70		8.70				
Government of Finland (co-finance)		00.0		10.00		10.00				
Government of Finland (parallel finance)		00.0		3.00		3.00				
Total:		13.70		21.70		35.40				
<b>Recipients:</b> Government of National Unity, Sudan, Government of Egypt, and the Eastern Nile Technical Regional Office.										
<b>Responsible Agencies:</b> Ministry of Irrigation and Water Resources, Sudan; Ministry of Water Resources and Irrigation, Egypt; and the Eastern Nile Technical Regional Office.										
Estimated disbursements (Bank FY/US\$m)										
FY										
Annual										
Cumulative										
Project implementation period: Start July 10, 2009 End: July 31, 2014 Expected effectiveness date: July 10, 2009 Expected closing date: December 31, 2014										
Does the project depart from the CAS in content or other significant respects? <i>Ref.</i> <b>PAD I.C.</b>								[ ] Yes [ x ] No		

Does the project require any exceptions from Bank policies? <b>Ref. PAD IV.G.</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have these been approved by Bank management?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is approval for any policy exception sought from the Board?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the project include any critical risks rated “substantial” or “high”? <b>Ref. PAD III.E.</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the project meet the Regional criteria for readiness for implementation? <b>Ref. PAD IV.G.</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Project development objective <b>Ref. PAD II.C., Technical Annex 3</b> The project development objective is to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin.	
Global Environment objective <b>Ref. PAD II.C., Technical Annex 3</b>  The global environment objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, and the adoption of a framework for integrated and sustainable management of Lake Nasser/Nubia Basin.	
Project description <b>Ref. PAD II.D., Technical Annex 4</b>  The project has the following three components: <b>Community Watershed Management Component:</b> The objective of this component is to promote wider adoption of sustainable land and water management practices and technologies to reduce land degradation, and increase agricultural productivity.  <b>Knowledge for Cooperative Action Component:</b> The objective of this component is to strengthen the knowledge base and human resource capacity for cooperative action on watershed management in the Eastern Nile Basin.  <b>Project management:</b> The objective of this component is to provide technical and capacity building assistance to support project implementation.	
Which safeguard policies are triggered, if any? <b>Ref. PAD IV.F., Technical Annex 10</b>  Environmental Assessment (OP 4.1) Projects on International Waterways (OP 7.50)	
Significant, non-standard conditions, <b>if any</b> , for: N/A <b>Ref. PAD III.F.</b>	
Board presentation: March 10, 2009	
Loan/credit effectiveness: July 10, 2009	
Covenants applicable to project implementation:	

## I. STRATEGIC CONTEXT AND RATIONALE

### A. Country and sector issues

1. **Background:** The Nile River, which is 6600 km long, is the longest river in the world. It has a drainage area of nearly 3.1 million sq. km, covering the following 10 countries- Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. The Nile River basin can be divided into two sub-basins – the Eastern Nile and the Equatorial Lake. The Eastern Nile Basin is considered to include four river systems, Abay-Blue Nile; Tekeze-Setit-Atabara; Baro-Akobo-Sobat/White Nile, and the Main Nile. The headwaters of the first three tributary systems rise in the Ethiopia highlands, while the Main Nile traverses through Sudan and Egypt. The Abay-Blue Nile alone accounts for 30 – 90% of all Nile waters reaching Egypt, depending on the season. The countries in the Eastern Nile Basin are Egypt, Ethiopia, and Sudan.
2. The Equatorial Lakes Basin comprises a complex of lakes, wetlands, and rivers, including Lake Victoria, the second largest freshwater lake in the world, Lake Albert, Lake Edward, Kagera River, Mara River, and the Malakisi-Malabi-Soi River.
3. A variety of ecosystems occur in the Nile Basin and they include tropical forest, woodlands, savannas, wetlands, arid lands and deserts, and a large delta. These ecological systems support a wide diversity of habitats, flora and fauna, including the following: (a) Lake Victoria and its surrounding wetlands alone support more than 430 fish species, 350 of which are endemic; (b) the savanna ecosystems are the richest grasslands in the world in terms of very high flora and fauna diversity; and (c) the savanna supports the biggest concentration of large mammals in the world. Also, at least 125 migratory bird species use the Nile basin as a flyway between Africa, Europe and Asia.
4. The Nile River plays a major role in the economies of the riparian countries, particularly in the development of key economic infrastructure such as irrigation schemes and hydropower dams, driving industrialization and urbanization. The Nile basin also supports the local livelihoods of about 160 million people who are involved in rain-fed agriculture (mainly in Ethiopia and Sudan), irrigated agriculture, fisheries, and livestock production (mainly through agro-pastoralism; transhumans pastoralism, etc.).
5. ***Land degradation in the Eastern Nile Basin:*** The main environmental challenge in the Eastern Nile Basin, the focus of the proposed project, is land degradation, which has major implications for agricultural productivity, water quality, and biodiversity conservation. The most degraded parts of the Eastern Nile Basin are the Ethiopia highlands. About 20,000 sq. km of land in this area is severely degraded because of accelerated soil erosion, leaving only a topsoil depth of less than 10 cm. This situation is expected to worsen if no action is taken, with the size of the severely degraded areas growing to 100,000 sq. km. by 2010. This rate of soil fertility loss cannot sustain agricultural production, making the country more vulnerable to food insecurity.
6. In addition to the Ethiopian highlands, the other “hotspots” of land degradation in the Eastern Nile Basin are the forest and woodland areas south of Khartoum, and the Atbara and the

Blue Nile basins in Sudan. In the case of wetlands, the major ones are the following: (a) the Lake Nasser/Nubia basin, Nile delta, Qarun, and Rayan in Egypt; (b) the Gambella floodplain, Lake Tana, Finchaa area, Dobus swamp/Alatish River in Ethiopia; and (c) the Sudd, Machar marshes, and Dinder wetlands in Sudan.

7. The main causes of land degradation in the Eastern Nile Basin are: (a) clearing of forests, woodlands, and wetlands for large-scale and smallholder agriculture; (b) overgrazing of rangelands by livestock; and (c) overexploitation of forests and woodlands for fuelwood and charcoal. Underlining these proximate causes are macro-level policies that are beyond the scope of the proposed project, such as agricultural and land tenure policies that favor the expansion of semi-mechanized agriculture in Sudan.

8. The most significant impact of land degradation in the Eastern Nile Basin are the loss of soil productivity because of accelerated erosion of the top soil, and deteriorating water quality due to increased sedimentation. As a result, there is increased siltation of major reservoirs for irrigation and hydropower generation, reducing their efficiency. This situation sometimes leads to costly de-silting operations. The most critical areas adversely affected by increased siltation in the Eastern Nile Basin area are the Aswan High Dam in Egypt; the Finchaa and Tekeze hydropower dams in Ethiopia; and the Roseires, Sennar, and Khasm El Girba dams; and Gezira, Rahad, and New Haifa irrigation schemes in Sudan.

9. ***Regional and Country level Strategies:*** As noted earlier, the Nile River is critical for economic and social development in the ten riparian countries. After decades of tension over the use of the waters of the Nile River, the countries began to work towards cooperative management of water and other natural resources for their mutual benefits. This evolving regional cooperation, which began in 1999, is under the auspices of the Nile Basin Initiative (NBI). Under the NBI, the riparian countries adopted a “Shared Vision”, whose goal is “... *to achieve sustainable social-economic development through the equitable utilization of, and benefit from, the common Nile basin water resources.*”

10. This shared vision is supported by the following four specific objectives: (a) develop the water resources of the Nile basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples; (b) ensure efficient water management and the optimal use of the resources; (c) ensure cooperation and joint action between the riparian countries, seeking win-win gains; and (d) target poverty eradication and promote economic integration.

11. Under the NBI, the Eastern Nile countries – Ethiopia, Egypt, and Sudan – initiated in 2001 the Eastern Nile Subsidiary Action Program (ENSAP). ENSAP is an integrated investment-oriented regional multipurpose program aimed at deepening cooperation and generating tangible on-the-ground benefits for the riparian countries. The first set of investments under ENSAP comprises the following seven projects: Watershed Management, Flood Preparedness and Early Warning, Eastern Nile Planning Model, Baro-Akobo Multi-purpose Water Resources Development, Ethiopia-Sudan Transmission Interconnection, Eastern Nile Power Trade Study, and Eastern Nile Irrigation and Drainage.

12. The proposed Eastern Nile Watershed Management Project (ENWMP) represents the above watershed management project in the ENSAP investment package. It was originally envisaged as involving Ethiopia, Egypt, and Sudan, as well as a regional component. The development of the Ethiopia portion, however, was accelerated because the Government wanted to incorporate it into the complementary Tana & Beles Integrated Water Resources Development Project (TBIWRDP). It was, therefore, processed separately from the proposed project. The TBIWRDP was approved by the World Bank Board in May, 2008, with a loan from the World Bank (\$42.9 million), a grant from the Government of Finland (\$8 million), and counterpart funds from the Ethiopian Government and communities (\$16.85 million).

13. Nevertheless, the TBIWRDP remains closely linked to the proposed project, specifically the Natural Resources Investment Component (\$67.6 million), because it is part of the watershed management investment approved by the ENCOM. Moreover, the highland of Ethiopia is a major source of sediments into the Eastern Nile Basin. Under this component, the project is financing: (a) soil and water conservation measures such as check dams, cut-off drains, gully improvements, stone-faced bunds, and hedge rows; and rehabilitation of degraded land through forestry and agroforestry programs; (b) improvement in livelihood through investments in crop and livestock production, improve rural access roads, upgrading of social infrastructure at the village level, water supply development, and development of irrigation infrastructure; and (c) support to strengthen institutions at the village, district, and regional levels to support improved natural resources management.

14. The implementation of related interventions in Egypt, Ethiopia, and Sudan would be undertaken in a coordinated manner through the regional knowledge development and capacity building activities under the proposed operation. In addition, implementation of the interventions in Ethiopia, through the TBIWRDP, will be coordinated with already existing and/or planned sustainable land management (SLM) initiatives in Ethiopia, particularly the IFAD-GEF Community-based Natural Resource Management in Lake Tana Watershed project, one of the operations under the GEF-SIP in Ethiopia (see paragraph 22). The Government of Ethiopia, in the context of TerrAfrica, is moving towards a more harmonized and coordinated approach to SLM. A SLM Technical Committee, of which ENTRO is a member, has been established with the mandate of overseeing and coordinating SLM initiatives in the country. With the support of TerrAfrica, a common framework for investments in SLM, known as the Ethiopia SLM Investment Framework (ESIF), is being developed, and the TBIWRDP is one of the operations through which the objectives of the ESIF will be achieved. Activities initiated in the context of TerrAfrica in Ethiopia, will support the regional approach under this regional operation.

15. To complement their regional level commitments and strategies, both Egypt and Sudan have adopted national policies, regulatory frameworks, and institutional arrangements to support sustainable management and use of land and water resources in the Eastern Nile Basin.

16. Sustainable land and water resources management is also a priority in the World Bank's Country Assistance Strategy for Egypt, and the Interim Strategy Note for Sudan. It is also highlighted as one of the priority areas to support growth and poverty alleviation in Sudan's Joint Assessment Mission: Framework for Sustained Peace, Development and Poverty

Eradication report. This report was jointly prepared by the Government and its development partners, including the World Bank, following the signing in January 2005 of the Comprehensive Peace Agreement, which ended the civil war.

### **Analytical underpinnings**

17. A number of studies have been undertaken to provide a better understanding of the environmental challenges in the Eastern Nile Basin, including comprehensive regional and country-level analytical work on the environmental and socio-economic situation in the Eastern Nile Basin, and institutional mechanisms for cooperation on watershed management issues (see Annex 12 for a list of some of the major studies).

### **B. Rationale for Bank and GEF involvement**

18. There are three main reasons for the World Bank's involvement in the proposed project. First, the Bank has been associated with the NBI since its inception in 1999, and it continues to play a facilitating role in assisting the riparian countries to develop strategies for cooperation and to mobilize financial and technical resources for the implementation of their shared vision. As noted earlier, the goal of the shared vision is "*... to achieve sustainable social-economic development through the equitable utilization of, and benefit from, the common Nile basin water resources.*" The Bank has also helped the countries to mobilize funding from bilateral and multi-lateral sources for capacity building activities and investments. This project presents another opportunity for the Bank to build on its experience with the NBI to assist the riparian countries to mobilize additional technical and financial resources.

19. Second, the Bank is giving priority to the sound management of transboundary basins in its Africa Action Plan (AAP) and Regional Integration Department's (RID) strategy because of the important role they play in supporting accelerated economic growth and poverty alleviation.

20. Finally, the Bank has extensive global knowledge and experience on watershed management in transboundary water bodies. Therefore, its involvement in the proposed project would help to bring this knowledge and experience to the Eastern Nile countries, including best practices in watershed rehabilitation and management.

21. For the GEF, the sustainable management of the Eastern Nile Basin is consistent with the strategic priorities for two of its focal areas – Land Degradation and International Waters. The two specific strategic priorities for the GEF's land degradation programs related to the proposed project are as follows: (a) develop an enabling environment that will place sustainable land management in the mainstream of development policy and practices at regional, national, and local levels (Strategic Objective 1); and (b) transmit upscale sustainable land management investments that generate mutual benefits for the global environment and local livelihoods (Strategic Objective 2).

22. This operation would also contribute to the Program Development Objective of the TerrAfrica/GEF Strategic Investment Program for Sustainable Land Management in Sub-Saharan Africa (SIP), a multi-agency regional investment program that seeks to finance strategic

SLM investment programs<sup>1</sup>. It would support the implementation of on-the-ground activities to secure ecosystem services and increase land productivity, as well as address institutional barriers that hinder SLM adoption and replication. More specifically, the set of actions proposed would contribute directly to the Intermediate Result 1 (that is SLM applications on the ground are scaled-up in defined priority agro-ecological zones), and Result 4 (that is targeted knowledge generated and disseminated, and monitoring systems established and strengthened at all levels) of the SIP.

23. Specific GEF SIP priorities to be addressed in the proposed project include the following: (a) regional-level activities such as improving knowledge management; strengthening of African coalitions, institutions and leadership; and investment coordination; and (b) national and community-level priorities such as: (i) support for on-the-ground activities to scale up sustainable land and water management practices; capacity building for community-level and other relevant institutions; (ii) integration of sustainable land and water management priorities into national and sectoral planning frameworks, regional cooperative basin planning frameworks; (iii) development of effective knowledge management systems, including sharing of knowledge and innovation, and dissemination of best practices and lessons learned; and (iv) improvements in the capacity of local communities to adapt to climate change, including diversification of crop production, water harvesting/supplementary irrigation, and diversified livelihood.

24. The proposed project is also in line with the long-term objective of the GEF's International Waters Focal Area – to foster international, multi-state cooperation on priority water concerns. It is also consistent with the GEF's Strategic Program for International Waters for the GEF's Fourth Replenishment (GEF-4) - “to balance overuse and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature”.

### **C. Higher level objectives to which the project contributes**

25. As agreed by the Nile Basin institutions, the overall goal or higher level objectives of the proposed Eastern Nile Watershed Management Project is to “assist Egypt, Ethiopia, and Sudan to develop and implement coordinated approaches and planning frameworks for integrated land and water management to improve environmental management and the living standards of local communities in the Eastern Nile Basin.”

## **II. PROJECT DESCRIPTION**

### **A. Lending instrument**

26. The proposed project would be financed with a total of US\$35.4 million over a five-year period, using the World Bank's Sector Investment Loan instrument. US\$10.0 million of the financing would be provided by a Trust Fund to be established at the Bank by the Government of Finland (dollar equivalent of Euro 7.0 million approved by Finland). Finland would also provide

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<sup>1</sup> The SIP uses GEF to strengthen the alignment, harmonization and coordination of SLM investments in countries. The SIP supports the objectives and approach of TerrAfrica.

an additional US\$3 million (equivalent of Euro 2.25 million) in technical assistance. The GEF would provide US\$8.7 million, US\$13.5 million from the Government of Sudan, and US\$0.2 million from the Government of Egypt.

## **B. Project development and global objectives and key indicators**

27. The Project Development Objective and Global Environment Objective (GEO) are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin. A second GEO is to develop a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.

28. The key performance indicators are as follows (see Annex 3 for details):

- Cumulative area of degraded agricultural landscape rehabilitated and under sustainable land management practices.
- Adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.

### **C. Project components**

29. The proposed project would have the following three components: (a) Community Watershed Management; (b) Knowledge for Cooperative Action; and (c) Project Management.

#### ***(a) Component 1: Community Watershed Management (\$25.6 million)***

30. The objective of this component is to promote wider adoption of sustainable land and water management practices and technologies to reduce land degradation, and increase agricultural productivity. This component would be implemented in the Atbara, Bau (or Ingessana), Dinder, and Lau sub-watersheds in Sudan. The population of these areas comprises mainly small-scale farmers and pastoralists.

31. These sub-watersheds were selected by a process initiated by the Ministry of Irrigation and Water Resources using the following criteria: (a) they are the major sources in Sudan of sediments that end up in the Nile River; (b) they provide an opportunity to address land degradation in representative ecological systems in Sudan – desert, savanna, and wetland/forest; and (c) they have the demonstration potential for other watersheds in Sudan. Unlike the first three sub-watersheds, where on-the-ground interventions would be implemented, project support in the Lau sub-watershed would focus only on capacity building because of the severely limited institutional capacity (See Annex 4 for details on the project sites).

32. Building lessons learned from successful pilots within and outside Sudan, interventions under this component would be implemented through the following two sub-components, (a) natural resource management and (b) sustainable agriculture.

33. Natural resource management sub-component (\$15.4 million): The objective of this sub-component is to strengthen the management of natural resources in the targeted communities, particularly forests and rangelands that are under pressure from overexploitation and overgrazing. There would be two sets of interventions under this sub-component:

34. *Capacity building*: The project would finance technical assistance, training, equipment, and incremental costs for the following activities: strengthening community organizations, preparation of local guidelines for community-based natural resource management; training on the guidelines for local government and community organizations, and the development of community natural resource management plans. These plans would cover, among other things, priorities for forest and range management and sustainable agriculture. For the Dinder sub-watershed, in addition to this assistance, the project would facilitate collaborative park management, including awareness-raising and training in park management for both park staff and communities. It would also provide assistance to strengthen mechanisms for community involvement in protected area management.

35. *Resource management*: The project would finance technical assistance, specialized training, and investments in forest management and/or range management on communal lands, depending on the agro-ecological zone. Forest management activities would include agro-forestry,

reforestation and management of forest reserves, and the establishment of community forests such as woodlots, gum arabic, shelterbelts for sand dune fixation, and alternative energy interventions that reduce pressure in forest resources.

36. Range management activities to be financed under the project would include mapping of seasonal livestock migration routes and the rehabilitation of rangelands through stock management, re-seeding, development and management of water points, and improved grazing systems.

37. Sustainable agriculture sub-component (\$10.2 million): The objective of this sub-component is to promote wider adoption of innovative practices and technologies for sustainable soil fertility and water management to increase and sustain agricultural productivity through the following two sets of interventions -- innovations in agriculture and water harvesting. Project support would be based on priorities for sustainable agriculture outlined in the community natural resource management plans.

38. *Innovations in agriculture*: The project would finance technical assistance, training, equipment, and incremental costs for the establishment of demonstration farms on farmers' fields. It would also support the transfer of knowledge, technology, and support services to farmers interested in adopting the demonstrated innovations.

39. *Water harvesting*: The project would finance the development of rainwater harvesting structures to improve access to water for people, agriculture, and livestock. The project would finance technical assistance, training, civil works, equipment and incremental costs for capacity building to assist local communities to develop structures such as farm ponds, storage tanks, springs development, small dams and sub-surface dams (less than 4.5 m in height) for domestic use and small-scale irrigation, covering a total of about 5100 ha. In addition, the project would finance the rehabilitation of mayas (i.e. natural water collection points in the Dinder area) to harvest rainwater. The project would also finance a limited number of small-scale boreholes to provide safe drinking water for local communities, and capacity building activities to enable communities to manage and maintain such infrastructure.

40. *Sub-grant*: To support adoption and scaling up of innovations in natural resource management and sustainable agriculture identified as priority in the community natural resource management plans, the project would provide grants to community organizations to support such initiatives (See Annex 4 for details).

41. The expected outcomes of interventions implemented under this component are: (a) increased land area being sustainably managed; and (b) increased agricultural productivity.

**(b) Component 2: Knowledge for Cooperative Action (\$4.2 million)**

42. The objective of this component is to strengthen the knowledge base and human resource capacity for cooperative action on watershed management in the Eastern Nile Basin. As noted above, the Tana & Beles Integrated Water Resources Development Project in Ethiopia has an organic relationship with the proposed project and this component strengthens this link. At the

regional level, project support would focus on facilitating training and exchange of information (including on best management practices) and expertise on watershed management in Egypt, Ethiopia, and Sudan. This component would have the following two sub-components – (a) Regional capacity building; and (b) Lake Nasser/Nubia management.

***(i) Regional Capacity Building Sub-component (\$1.5 million)***

43. Project financing under this sub-component would specifically focus on the following two sets of interventions:

- Regional sediment and water quality monitoring: The project would finance technical assistance and training to: (i) develop harmonized standards, methods, and protocols for sharing of information on sedimentation and water quality. This work would build on related on-going NBI initiatives such as those under the Strategic Vision Program (SVP), Water Resources Planning and Management (WRPM) project and the SVP Transboundary Environmental Action Project (NTEAP); and (ii) collate data on sedimentation and water quality from national institutions, analyze them to determine regional trends, and disseminate the information among the riparian countries to support decision-making. This work will be coordinated with other related ongoing efforts of the NBI and other institutions in the Basin.
- Regional capacity building and coordination: The project would finance joint training for participants from the riparian countries, and technical staff exchanges to strengthen cooperation and capacity in watershed management. It would also finance coordination and exchange of knowledge and experiences across the Eastern Nile countries on innovations and best practices in watershed management, particularly from Egypt, Ethiopia, and Sudan. This activity would be undertaken in close coordination with the GEF's network of international water management specialists and practitioners known as the International Waters Learning and Exchange Resource Network (IWLEARN).

44. Eastern Nile Technical Regional Office (ENTRO) would be responsible for the implementation of the above interventions, using its existing institutional arrangements.

45. The expected outcomes of project support at the regional level are: (i) increased technical capacity of the institutions involved in watershed management in the Eastern Nile Basin; and (ii) information products are developed to increase sharing of information on watershed management, including on regional environmental trends, best management practices, and to support decision making in the riparian countries on proactive balancing of competing resource uses.

***(ii) Lake Nasser/Nubia Management Sub-component (US\$2.7 million)***

46. The objective of this sub-component is to assist Egypt and Sudan to jointly enhance the knowledge base, and develop a framework (i.e. principles and guidelines) for integrated and sustainable management of the land and water resources of Lake Nasser/Nubia basin.

47. Project support, which would be jointly planned by Egypt and Sudan, would focus on the following two sets of interventions: (i) environmental quality monitoring; and (ii) development of management guidelines.

48. *Environmental quality monitoring*: The objective of the environmental quality monitoring activities is to collect and analyze biophysical (mainly sedimentation, water quality, and selected limnological parameters) and socio-economic information necessary for the development of guidelines for integrated and sustainable management of Lake Nasser/Nubia. This work would be closely coordinated with the planned initiative of the Government of Egypt, United States National Aeronautics and Space Administration, and the Arab Water Council to use remote sensing and satellite data for water and environmental monitoring and modeling.

49. For sedimentation, the project would finance technical assistance, equipment, training, and incremental survey costs to improve sediment monitoring in Lake Nasser/Nubia, including refining survey and measurement procedures and techniques, sand encroachment analysis, mathematical modeling tools and procedures, and database system protocols. Project finance would also help to improve the temporal and spatial coverage and the accuracy of sediment surveys on Lake Nasser/Nubia.

50. Information on water quality would also be collected during the sediment surveys. This information would complement data generated from other ongoing water quality monitoring activities on Lake Nasser/Nubia being financed by the Governments of Egypt and Sudan.

51. The sediment survey would build on, expand, and update existing monitoring and modeling systems, and databases in Egypt and Sudan. The project would also finance technical assistance and incremental operating costs for socio-economic surveys to better understand population trends and the distribution of settlements, the socio-economic status of people, trends in natural resource use, planned future development activities, etc. The survey results would help to design future sustainable local livelihood and other development activities in the lake basin.

52. Collection of other key information on environmental quality will not be financed by the project, but would be obtained from ongoing initiatives being financed by the governments of Egypt and Sudan. For example, data on sand encroachment would be obtained from climatological and sand direction stations around Lake Nasser/Nubia and on fisheries from the Fisheries Management Centre in Aswan. The data collected under this sub-component would be integrated with on-going Information Management Systems being developed by the NBI, specifically the Nile Decision Support System (Nile-DSS) under the NBI Water Resources Project and the Eastern Nile Planning Model under ENTRO.

53. *Development of management guidelines*: The project would finance technical assistance and training to develop, in a participatory way, principles and guidelines (i.e. management framework) to support the integrated management and sustainable use of the resources of Lake Nasser/Nubia, including balancing competing uses, based on the information generated from the biophysical and socio-economic surveys. Priority would be given to the development of guidelines on agriculture, tourism, and fisheries, which are expected to become the key sectors in any future development activities in the lake basin.

54. The expected outcome of the above interventions is the completion and adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan guidelines to guide future management and development activities in the Lake Nasser/Nubia basin to ensure balanced and sustainable resource use.

**(c) Component 3: Project Management (\$5.6 million)**

55. The objective of this component is to finance technical and capacity building assistance, and incremental operating costs for existing regional, national, and local entities that would be responsible for the implementation of the proposed project. Implementation at the regional level would be lead by ENTRO. National level implementation in Egypt would be led by the Ministry of Water Resources and Irrigation, and Sudan by the Ministry of Irrigation and Water Resources (See Annex 6 for details on the implementation arrangements).

**D. Lessons learned and reflected in the project design**

56. The design for the proposed project reflects lessons learned from previous and ongoing land and water resources management interventions in Egypt and Sudan, and international best practices. It also incorporates lessons learned that were documented in a number of studies commissioned under the NBI, a World Bank review of experiences in watershed management completed in 2008, and study tours by watershed management specialists from the Egypt, Ethiopia, and Sudan. The main lessons are summarized below.

57. A shift from single sector approaches to integrated approaches: Traditional approaches to watershed rehabilitation and management often focus on a single sector or engineering solution. Based on international experience, there is consensus that integrated approaches are more effective. Such approaches provide a framework to address not only the ecological dimensions of land and water degradation, but also the economic and social aspects. They also facilitate effective participation of a broad range of key stakeholder groups, including resource managers and upstream and downstream communities.

58. Country ownership and shared vision: Strong country ownership and a shared vision by the major stakeholders involved in watershed rehabilitation and management is critical for successful implementation and sustainability. These attributes are even more crucial in transboundary waterbodies such as the Eastern Nile Basin. The shared vision among the riparian countries, Egypt, Ethiopia, and Sudan, is very strong. The project is one of the first set of seven investment projects approved by the Eastern Nile Council of Ministers (ENCOM) at its 7<sup>th</sup> meeting in Khartoum in March 2001.

59. Mainstreaming project planning and implementation: Project design builds on existing knowledge and practices in integrated land and water management being implemented by government agencies and local communities in Egypt and Sudan. As a result, implementation of interventions proposed under this project would be mainstreamed into these entities, specifically the Ministry of Water Resources and Irrigation (MWRI) in Egypt, the Ministry of Irrigation and

Water Resources (MoIWR) in Sudan, local government administrations, and community organizations.

60. Participatory planning and implementation: To ensure that interventions supported under the proposed project reflect the priorities of the intended beneficiaries, a participatory approach to project planning and implementation is crucial. For example, the project, under the Community Watershed Management Component in Sudan, would support a participatory process for local communities to lead the development and implementation of micro-watershed management and development plans for financing. It would also support regular community-led monitoring of implementation performance and impacts as part of the overall monitoring and evaluation system for the project.

#### **E. Alternatives considered and reasons for rejection**

61. The task teams from Egypt and Sudan, Finland (a co-financer of the project), and the World Bank considered two design options for the proposed project. The first option was for each country to develop its own national project for watershed rehabilitation, with linkages to similar projects in the other riparian countries of the Eastern Nile Basin. This option was rejected because all the riparian countries recognize that a joint effort was needed to address land degradation, which is having significant adverse ecological and economic impacts on both the upstream and downstream areas of the Eastern Nile Basin. These impacts include loss of biological diversity, degraded water quality, and increased siltation of key economic infrastructure such as irrigation schemes and reservoirs associated with hydropower generation.

62. The second option, which was endorsed by all the parties, was to design an integrated watershed rehabilitation and management project that would help to deepen the evolving cooperation on land and water management and development issues among the riparian countries under the Nile Basin Initiative. Project design, therefore, comprises: (a) a regional component aimed at strengthening the capacity of regional and national institutions associated with watershed management in all the Eastern Nile countries -- Egypt, Ethiopia, and Sudan; (b) joint development by Egypt and Sudan of a framework for integrated and sustainable management of Lake Nasser/ Nubia; and (c) community-level investments and capacity building activities in Sudan to support sustainable land and water management practices and technologies aimed at reducing land degradation, and increasing agricultural productivity and incomes.

63. As noted above, the development of the complementary interventions in Ethiopia was completed earlier as part of the Tana & Beles Integrated Water Resources Development Project. It was, therefore, processed separately from the proposed project, and was approved by the World Bank Board in May, 2008, but it will maintain its organic links to this project, particularly through the Knowledge for Cooperative Action component and the regional level institutional arrangements.

### **III. IMPLEMENTATION**

#### **A. Partnership arrangements**

64. The proposed project, as noted earlier, is a partnership involving the three countries of the Eastern Nile Basin: Egypt, Ethiopia, and Sudan, in cooperation with their international partners. For example, Canada financed project preparation and the Sudan component would be supported with co-financing from the Government of Finland. This partnership is reflected in the implementation arrangements. (See Annex 6 for details).

#### **B. Institutional and implementation arrangements**

65. The proposed project would have the following two existing inter-related levels of organizational arrangements for the implementation – strategic policy level and implementation level. The Eastern Nile Council of Ministers, assisted by the Eastern Nile Strategic Action Program Team, would provide overall strategic policy guidance at the regional level. These are existing mechanisms mandated by the riparian countries under the Nile Basin Initiative to coordinate regional projects in the Eastern Nile Basin.

66. The Ministry of Irrigation and Water Resources (MoIWR), Sudan, in cooperation with local government agencies and community organizations, would lead the implementation of the Community Watershed Management component. For the Knowledge for Cooperative Action component, ENTRO would be responsible for the implementation of the Regional Capacity Building sub-component and the Ministry of Water Resources and Irrigation, Egypt, in collaboration with MoIWR, Sudan would lead the implementation for the Lake Nasser/Nubia Management sub-component (See Annex 6 for details.)

#### **C. Monitoring and evaluation of outcomes/results**

67. The design of the monitoring and evaluation (M&E) system for the proposed project builds on the existing systems in the lead implementing agencies, the Ministry of Water Resources and Irrigation (MWRI) in Egypt, the Ministry of Irrigation and Water Resources (MoIWR) in Sudan, and the Eastern Nile Technical Regional Office (ENTRO) in Addis Ababa. It would also build on the existing basin-wide monitoring and reporting system for projects under the Nile Basin Initiative.

68. The M&E system aims at: (a) assessing implementation performance in relation to the expected project outcomes, outputs, and budget; (b) proactively identifying implementation challenges and implementing corrective actions in a timely manner; and (c) documenting lessons learned and incorporating them into decision-making on project implementation and sustainability.

69. The Results Framework in Annex 3 provides a focused framework to monitor and assess progress towards achieving the project outputs, outcomes, and impacts associated with the annual work plans and budgets for community, local, national, and regional level interventions.

Under this project, technical assistance and other forms of support would be provided, as needed, to enhance the existing M&E systems, particularly in the MoIWR in Sudan. There would also be an independent third party evaluation of project implementation performance and outcomes at mid-term and towards the end of the project implementation period (See Annex 3 for details).

#### **D. Sustainability**

70. The proposed project is expected to contribute overall to improved land and water management, and increased agricultural productivity in the selected sub-watersheds of the Eastern Nile Basin. The expected outcomes and outputs from project support are highly likely to be sustained beyond the five-year implementation period because of the following reasons:

71. First, there is strong political commitment in Egypt, Ethiopia, and Sudan for an integrated approach to the rehabilitation and improved management of the Eastern Nile Basin. As noted above, the project is one of the first set of seven investment projects approved by the Eastern Nile Council of Ministers.

72. Second, the proposed project interventions build on the experience of watershed rehabilitation and management activities already being undertaken in Egypt and Sudan, and by ENTRO. The types of interventions to be implemented under the project are already mainstreamed into the regular programs of the lead implementing agencies. Therefore, the institutional arrangements, and to some extent, the capacity and budget for such activities already exist. The challenge will be to further enhance technical capacity and augment budget allocations to support sustainability and replication.

73. Finally, the main intended beneficiaries of the project, local communities, are more likely to sustain the gains expected to be achieved because they are both environmental and economic. By helping households to increase agricultural productivity and incomes through sound environmental management, the project is expected to provide a strong incentive to sustain these outcomes.

#### **E. Critical risks and possible controversial aspects**

74. The potential project-level risks and mitigation measures associated with the proposed project are summarized in Table 1. No controversial issues have been identified in the proposed project.

#### **F. Loan/credit conditions and covenants**

##### 75. Condition of negotiations

The Recipients (i.e. Ministry of Irrigation and Water Resources, Sudan; Ministry of Water Resources and Irrigation, Egypt, and the Eastern Nile Technical Regional Office) have submitted procurement plans for the first 18 months of project implementation in form and substance satisfactory to the Association.

76. Conditions of Effectiveness

**Egypt**

No conditions for effectiveness apply.

**Sudan**

- (a) The execution and delivery of this Agreement on behalf of the Recipient has been duly authorized or ratified by all necessary governmental action.
- (b) The Recipient has adopted the Project Implementation Manual (including Procurement Manual and Sub-Grant Guidelines), in form and substance satisfactory to the World Bank.
- (c) The Recipient has recruited the following personnel for the National Project Coordination Unit: (i) a Project coordinator; (ii) a financial management specialist; (iii) a procurement specialist; (iv) a watershed management specialist; and, (v) a monitoring and evaluation specialist, all with qualifications, experience and terms of reference satisfactory to the World Bank.
- (d) The Recipient has allocated the amount of the Contribution budgeted for the 2009 Project budget to MoIWR, and provided a schedule for deposit of said Contribution into the Project Account satisfactory to the World Bank.
- (e) The Recipient has opened a Designated Account and a Project Account at the Recipient's Central Bank, both on terms and conditions acceptable to the World Bank.

**Eastern Nile Technical Regional Office (ENTRO)**

- (a) At least one of the Related GEF Grant Agreements has been executed and all conditions precedent to its effectiveness or to the right of the recipient thereunder to make withdrawals under it have been fulfilled.

77. Covenants

Standard financial covenants include maintenance of a satisfactory financial management system for the project and submission of the following to IDA:

- a) Agreed Interim un-audited Financial Reports submitted within 45 days after each financial year quarter, and covering each financial quarter.
- b) Audited project financial statements submitted within six months after the end of the financial year.

78. Dated covenants

The Ministry of Irrigation and Water Resources, Sudan shall establish, not later than six (6) months after the Effective Date the Local Implementation Units, with the core staff of each Unit consisting of a Local Project Coordinator, finance officer, procurement officer<sup>2</sup>, and a monitoring and evaluation specialist, all with qualifications, experience and terms of reference satisfactory to the Association.

In addition to the above, to emphasize the regional nature of the project and the inter-linkages, the grant agreements for Egypt, Sudan, and ENTRO include the following provisions related to Events of Suspension:

- (a) Any of the Related GEF Grant Agreements has failed to become effective by June 30, 2010.
- (b) The right of Egypt, Sudan or ENTRO to withdraw the proceeds of the financing under its Related GEF Grant Agreement, has been suspended, canceled or terminated in whole or in part, pursuant to the terms of such agreement.

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<sup>2</sup> The number of procurement specialists to be recruited for the LIUs would be two specialists for Year 1 and 2, and one specialist for Year 3-5

**Table 1- Potential Project Level Risks and Mitigation Measures**

<b>Risk Factors</b>	<b>Description of Risk</b>	<b>Rating of risk</b>	<b>Mitigation measures</b>	<b>Rating of residual risk</b>
Collapse of the Nile Basin Initiative (NBI)	The collapse of the NBI process under whose auspices this project is being developed would undermine joint capacity building and information sharing activities supporting project implementation.	Moderate	<p>There is strong commitment to the NBI at the highest political level for the NBI process.</p> <p>The proposed project is high priority for the NBI because it is expected to contribute to addressing environmental degradation and poverty in the Eastern Nile Sub-Watershed.</p>	Low
Country commitment	Country commitment for a regional project may weaken in favor of national level projects.	Moderate	<p>Priority interventions expected to be implemented under the proposed project are consistent with the national priorities of the governments of Egypt and Sudan.</p> <p>The interventions build on ongoing activities initiated by the countries.</p> <p>The high level of co-financing from the Governments of Egypt and Sudan signals strong government commitment.</p>	Moderate
Institutional capacity	Insufficient institutional capacity at the national and local levels to implement project activities, especially at the community level in Sudan.	Substantial	<p>The project would finance interventions to strengthen the capacity of local government and community institutions that would lead the implementation of the project.</p> <p>Project support for the exchange of experts and information sharing among the riparian countries of the Eastern Nile would help to strengthen the capacity of institutions in watershed management.</p>	Moderate

<b>Risk Factors</b>	<b>Description of Risk</b>	<b>Rating of risk</b>	<b>Mitigation measures</b>	<b>Rating of residual risk</b>
Procurement	MoIWR, Sudan and MWRI, Egypt lack the experience in the use of World. Bank procurement procedures	High	Training of the relevant MoIWR Nile water Sector, MWRI staff in Bank procurement procedures.  Recruitment of procurement specialist for the project.	Moderate
Financial management	MoIWR Sudan, and the Nile Water Sector in MWRI lacks the experience in World Bank financial management practices	Substantial	MoIWR staff will be trained in World Bank financial management and disbursement procedures	Moderate
Overall risk		Substantial		Moderate

## **IV. APPRAISAL SUMMARY**

### **A. Economic and financial analyses<sup>3</sup>**

79. The financial and economic analysis of investments proposed under the project, under the Community Watershed Management component, indicates that the project is financially and economically feasible (the other component focuses primarily on capacity building and knowledge sharing).

80. The financial efficiency of the improved farm models was analyzed in terms of the Net Present Value (NPV), Internal Rate of Return (IRR), and Benefit-Cost Ratio (BCR) and they were found to be positive. The results are: NPV: SDG 12,400-27,320, IRR: 56.2-113.2%, and BCR: 1.7 – 2.3. The Economic Rate of Return (ERR) from the selected farm models is also positive. The ERR ranged from 32-50%, the NPV is positive, and the BCR is greater than one.

81. Finally, a sensitivity analysis was undertaken to test the robustness of the above results and they were found to be robust, except when the benefits decrease by 40% while costs remain the same. In such a situation, the FIRR would drop to 2.35-9.76% (see Annex 9 for details).

82. The above analyses are limited because they do not capture other benefits associated with improved watershed management that are difficult to monetize because of methodological reasons. These benefits include a variety of ecological services such as improving soil formation and nutrient cycle; water regulation and purification and micro-climate regulation; and religious, recreational, aesthetic, educational, and cultural values.

### **B. Technical**

83. The technical design for the project is appropriate because it is based on lessons learned from similar operations being implemented in Egypt and Sudan, and by the Eastern Nile Technical Regional Office. It also incorporates essential features of international best management practices. These local and international best practices are key factors for successful implementation and sustainability of watershed rehabilitation and management interventions. They include:

(a) Adoption of integrated approaches that provide a framework to address not only the ecological dimensions of land and water degradation, but also the economic and social aspects.

(b) Building on existing knowledge and management practices on integrated land and water management that are technically, financially, and socially appropriate for the intended beneficiaries.

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<sup>3</sup> The results of the analyses are currently being re-validated in the field and will be finalized at appraisal.

(c) Mainstreaming project planning and implementation into existing organizations already involved in watershed rehabilitation and management, and into existing participatory processes at the regional, national, and community levels.

(d) Providing technical and other assistance to strengthen the institutional capacity for effective project planning and implementation.

### **C. Fiduciary**

84. Financial management: A financial management (FM) assessment was conducted on the three entities that would lead the implementation of the proposed project, the Eastern Nile Technical Regional Office (ENTRO), the Ministry of Water Resources and Irrigation (MWRI) in Egypt, and the Ministry of Irrigation and Water Resources (MoIWR) in Sudan. The following are the main conclusions (See Annex 7 for details.) When the effectiveness conditions related to improvements in FM for the MoIWR (Sudan) and MWRI (Egypt) will have been met, satisfactory FM arrangements will be deemed to exist in these entities in compliance with Bank policies. ENTRO presently already possesses FM arrangements satisfactory to the Bank.

85. (a) ENTRO has a good track record of managing donor financed projects and its overall entity risk is considered to be “Moderate”.

86. (b) MWRI, Egypt: The Nile Water Sector (NWS) would be responsible for financial management under the project. The financial management risk for the NWS was rated as “Substantial” because of the following reasons: (i) no experience in World Bank financial management policies and procedures; (ii) use of manual accounting system, which is very prone to human error; (iii) current financial management reports are not detailed to allow for adequate monitoring; and (iv) lack of external audits that meet International Auditing Standards.

87. The action plan to mitigate these risks comprises the following: (i) hiring of a qualified accountant; (ii) use of a basic accounting software package to record and report on transactions; and (iii) use of an external auditor.

88. (c) MoIWR, Sudan: The overall FM risk for the national and local implementing agencies is considered to be “Substantial”. At the entity level, the assessment concluded that MoIWR, which would establish a Project Coordinating Unit, has a good track record of managing donor-financed projects. However, there is substantial inherent risk at the project level because of lack of experience in managing World Bank-financed projects.

66. There are also substantial control risks, including the possible use of project funds for unallocated activities, and current use of a manual accounting system with the records of the Government of Sudan that could lead to mistakes in project transactions, resulting in increased audit risks.

89. An action plan, with specific mitigation measures, has been developed to bring the FM risk down to moderate and they include: (a) a financial management specialist and finance officers will be appointed in the National Project Coordination Unit (NPCU) and LIUs upon their

establishment. The establishment of the PCU and the LIUs are set as condition for effectiveness and dated covenants respectively; (b) separate project books and ledgers would be set up in the NPCU and LIUs upon their establishment to account for the project related transactions. As the transactions volume increase, automation of the accounting system will be pursued; (c) the FM manual will be developed as part of the project implementation manual set as a condition for effectiveness; (d) written confirmation of GoNU allocation of the required counterpart funding for FY09 is expected before project negotiations; and (d) two FM supervision missions will be conducted during the first fiscal year after effectiveness, and the frequency of subsequent missions would be determined, depending on the degree of risk.

90. Procurement: Procurement of goods, works, and services under the project would be carried out by the Eastern Nile Technical Regional Office (ENTRO) (up to \$1.6 million), Ministry of Water Resources and Irrigation (MWRI), Egypt (up to \$2.7 million) and the Ministry of Irrigation and Water Resources (MoIWR), Sudan (up to \$25.5 million).

91. The procurement capacity assessment for ENTRO was carried out in August 2008 and the procurement risk was rated as Moderate because it has experience in the use of World Bank procurement policies and procedures. In the case of MWRI, the assessment in October/November 2008 concluded that the existing institutional mechanisms and procedures are satisfactory. However, the procurement unit in the Nile Water Sector, which would be responsible for procurement under this project, has no experience in the use of World Bank procurement policies and procedures. Therefore, the procurement risk is rated High.

92. For Sudan, a procurement capacity assessment was carried in August 2008. This assessment and the Country Integrated Fiduciary Assessment (CIFA) and the Country Procurement Assessment Report (CPAR) identified the following as the main issues affecting public procurement at the federal and states' level: (i) incomplete and outdated legal, policy and regulatory framework; (ii) weak procedures and practices, often applied in discretionary and discriminating manner; (iii) inadequate human and financial resources; and (iv) inadequate legislation, practices and institutions to ensure integrity and transparency of the procurement process. Therefore, the procurement risk is rated High.

93. The Action Plan emerging from the CIFA will address the above issues, some of which are already being tackled by the proposed Public Sector Reform, Decentralization and Capacity Building Project (PSCAP). Other major weaknesses identified consist in lack of experience in the procurement of consultants' services, lack of familiarity with procurement planning and monitoring systems and unproven capacity to meet the Bank's procurement reporting requirements. Specifically for the proposed project, corrective measures which have been agreed are the recruitment of a procurement specialist by the PCU and of additional staff, or consultants, to assist the LIU, depending on the workload. Formal training for all procurement staff will be also carried out by World Bank procurement staff.

#### **D. Environment and Social**

94. The proposed project is expected to have positive environmental and social impacts, including helping to: (a) increase the area of degraded cropland and rangeland rehabilitated in specific micro-watersheds in the Eastern Nile Basin; (b) adopt sustainable management of land and water resources in the rehabilitated areas; and (c) increase agricultural productivity and household incomes.

95. Project support would comprise mainly capacity building activities and small-scale investments such as water harvesting structures, including farm ponds, storage tanks, and boreholes (under the Community Watershed Component). There will be no resettlement of people under the project. To ensure that project support reflects the needs and priorities of the intended beneficiaries, it is socially acceptable, and the benefits are equitably distributed within communities, including to women, a community-led participatory planning and implementation process would be implemented in each of the targeted villages.

96. The small-scale community investments related to the Community Watershed Management Component of the project are not expected to have major environmental impacts. Therefore, no separate environmental assessment was conducted. An Environmental and Social Management Framework (ESMF) has been developed specifically for the community watershed management activities. The ESMF: (a) establishes clear procedures and methodologies for environmental and social assessment, review, approval and implementation of investments to be financed under the project; (b) specifies appropriate roles and responsibilities, and outlines the necessary reporting procedures, for managing and monitoring environmental and social concerns related to project investments; and (c) helps to determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.

97. The ESMF does not cover the other project components, namely the Knowledge for Cooperative Action and Project Management because project support comprises technical assistance; and data collection, analysis, and dissemination. The consistent use of the ESMF would be regularly monitored as part of the project's monitoring and evaluation system (See Annex 10 for details on safeguard issues).

## E. Safeguard policies

**Table 2 - Safeguard Policies Triggered by the Project**

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
<a href="#">Environmental Assessment (OP/BP 4.01)</a>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Natural Habitats ( <a href="#">OP/BP 4.04</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pest Management ( <a href="#">OP 4.09</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Physical Cultural Resources ( <a href="#">OP/BP 4.11</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Involuntary Resettlement ( <a href="#">OP/BP 4.12</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Indigenous Peoples ( <a href="#">OP/BP 4.10</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Forests ( <a href="#">OP/BP 4.36</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Safety of Dams ( <a href="#">OP/BP 4.37</a> )	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projects in Disputed Areas ( <a href="#">OP/BP 7.60</a> )*	<input type="checkbox"/>	<input checked="" type="checkbox"/>

\* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

Projects on International Waterways ( <a href="#">OP/BP 7.50</a> )	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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98. **Policy Exceptions and Readiness:** No policy exemption is requested. Specifically on the Safeguard Policy on Projects on International Waterways (OP/BP 7.50), Notification Letters were sent to all the 10 riparian countries by the Nile Basin Initiative Secretariat on September 3, 2008, following procedures established by the countries. By the end of the 60-day notification period, (i.e. November 2, 2008), no unfavorable response had been received from any of them.

## Annex 1 - Program Background

1. Overview: The Nile River, which flows for 6,600 km across 10 countries, Burundi, the Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda, is the longest river in the world. It has a drainage area of 3.1 million sq. km, about 10% of the total land area of Africa. This area comprises a variety of ecological systems, including high mountains, tropical forests, wetlands, savannas, arid lands and deserts, which support the economic development and the livelihoods of 160 million people. Most of these people are involved in rainfed agriculture, pastoralism, irrigated agriculture, and fisheries.
2. The Nile River and its tributaries support a number of hydropower dams. There are seven dams on the main Nile producing total of 4,100 MW of electricity, six on the Blue Nile (985 MW), two dams on the Tekeze Setit-Atbara (320 MW), and one dam, the Baro-Akobo-Sobat and White Nile, producing 30 MW. The largest of these dams is the Aswan High Dam, which generates about 8,000 GW/h of electricity annually. The Aswan Dam was completed in 1970 and it created a transboundary man-made lake, Lake Nasser/Nubia, which is 500 km long, with 350 km in Egypt and 150 km in Sudan. The lake has a total surface area of 5,250 square kilometers and a storage capacity of 157 cubic kilometers of water.
3. Nile Basin Initiative: The growing demand for the waters of the Nile River had in the past created tension among the 10 riparian countries. To promote cooperation for economic and social development in the Nile basin, the countries launched the Nile Basin Initiative (NBI) in 1999. Under the NBI, the countries agreed to a Shared Vision to “... *achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.*” To translate this vision into action, the NBI has developed a Strategic Action Program comprising two complementary programs, the Shared Vision Program, a program to build trust and capacity, involving all member countries, and two Subsidiary Action Programs aimed towards cooperative investments, one for the Nile Equatorial Lakes Basin and another one in the Eastern Nile Basin, known as the Eastern Nile Subsidiary Action Program (ENSAP).
4. The ENSAP was launched by Egypt, Ethiopia, and Sudan in 2001 to “*ensure efficient water management and optimal use of the Nile resources through equitable utilization and causing no significant harm*” and to “*target poverty eradication and promote economic integration.*” To achieve this vision, the countries launched a series of cooperative investments that are expected to lead to tangible on-the-ground benefits for all countries and to further strengthen collaboration. The first set of investments, the Joint Multi-purpose Program, comprises the following seven projects, (a) the Eastern Nile Planning Model; (b) the Bar-Akobo Multi-purpose Water Resources Development; (c) Flood Preparedness and Early Warning; (d) Eastern Nile Power Trade Investment (e) Ethio-Sudan Transmission Inter-connection; (f) Irrigation and Drainage; and (g) Watershed Management.
5. The riparian countries identified watershed management, the focus of the proposed project, as one of their priorities because it is essential for the effectiveness and sustainability of

future investments in large infrastructure such as irrigation and hydropower dams, which are needed to support accelerated economic growth and poverty alleviation. For example, improved watershed management is important to protect the operating life of such infrastructure and to reduce their operating and maintenance costs from decreased erosion and sedimentation; and to increase agricultural production and improve farmers' resilience to extreme climatic events by improved soil fertility and moisture management.

6. The proposed Eastern Nile Watershed Management Project was initially endorsed by the Eastern Nile Council of Ministers (ENCOM) at its 7<sup>th</sup> meeting in Khartoum in March 2001 as part of the EN investment program. This decision was subsequently confirmed by ENCOM's decision (at the 18<sup>th</sup> ENCOM meeting in Addis Ababa on October, 2004) to advance the watershed management agenda under the Eastern Nile fast track program. The proposed project is based upon the cooperative regional work undertaken by the Eastern Nile Regional Technical Office (ENTRO), which resulted in the Cooperative Regional Assessment and the ENSAP Fast-Track preparation on Watershed Management.

7. Environmental challenges in the Eastern Nile Basin: The main environmental issue affecting the Eastern Nile Basin is land degradation, which has adverse effects on water quality and biological diversity. Land degradation, especially in the Ethiopian highlands, is the cause of the high sediment load in the Nile River. About 447 million tons of soil is eroded into the river each year, about 45 percent from overgrazed rangelands in the Basin and another 35 percent from unsustainable farming practices in the highlands of Ethiopia alone. In the Ethiopia highlands, about 20,000 sq. km of farmlands are severely degraded, reducing topsoil depth to less than 10 cm. Nearly 30,000 ha of high forests and up to 68,000 ha of woodlands are cleared annually in this area.

8. In Sudan, the conversion of forests and woodlands to semi-mechanized farming and smallholder agriculture is the major source of eroded soil into the Nile River. Deforestation has also led to increased sedimentation in Sudan because of: (a) drifting sands, especially in the Lower Atbara area in Sudan; (b) moving sand dunes, especially around Dongella and Karima in Sudan; and (c) river bank erosion in the main Nile River channel.

9. The efficiency and effectiveness of key economic infrastructure in the Eastern Nile Basin has been compromised because of increased sedimentation. These impacts include loss of storage capacity in reservoirs, clogging of irrigation canals, and reduced hydropower generation. Specific examples include the siltation of major reservoirs for irrigation and hydro power generation such as Jebel Aulia, Roseires, Sennar, Kashm el Girba in Sudan; and Lake Nasser/Nubia in Egypt and Sudan. This situation often requires costly de-silting operations to rectify.

## Annex 2: Major Related Projects Financed by the Bank or other Agencies

Table 1. Major related Bank financed projects:

World Bank financed projects	Targeted Sector Issues	Performance Ratings	
		IP	DO
Ethiopia: Tana & Beles, Integrated Water Resources Development project (SIL: USD45 million) – P096323	Develop institutions and investments for integrated planning, management, and development in the Tana and Beles Sub-basins to accelerate sustainable growth	S	S
Ethiopia: Irrigation & Drainage Project (SIL: USD100 million) – P092353	Increase sustainable agricultural output and productivity in project areas	S	S
Ethiopia: Sustainable Land Management Project (SIL: SD29million) – P107139	Reduce land degradation in agricultural landscapes and improve the agricultural productivity of smallholder farmers	S	S
Sudan: Support To Agriculture And Forestry Development Project (SAFDP) (USD42.9 million from the MDTF) – P104786	Increase productivity of some targeted 730 and 260 groups of agricultural and forestry producers.	S	MS
Egypt West Delta Water Conservation and Irrigation Rehabilitation Project (SIL: USD 145million) - P087970	Improve the livelihood and increase the income of people in the West Delta region of Egypt.	S	S
East Delta Agricultural Services Project (SIL: USD 15million) - P049166	Provide support services to facilitate the settlement and increased agricultural production of low income families settling in the developed lands in the East Delta.	MS	S

Table 2. Major related projects financed by other donors in Sudan:

Other donors financed projects	Targeted Sector Issues	Donors
Sudan: The Post Conflict Community-based Recovery and Rehabilitation Program (RRP) (Euro 50 million) – <b>ongoing</b>	Capacity building within local government and rehabilitation of rural infrastructure associated with agricultural productivity at the community level.	European Union
The Sudan Productive Capacity Recovery Project (SPCRP) –(Euro 40 million) <b>ongoing</b>	Build human and physical capacities to achieve improved agricultural support services, increased crop, livestock and fisheries production, enhanced marketing opportunities and income generation	European Union
Southern Sudan: Agricultural Revitalization Program (SSARP) (USD22 million) – <b>completed</b>	Increase the capacity for agricultural production and marketing in Southern Sudan	USAID

### Annex 3: Results Framework and Monitoring

PDO / GEO	Project Outcome Indicators	Use of Project Outcome Information
<ul style="list-style-type: none"> <li>• The Project Development Objective is to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin.</li> <li>• The Global Environment Objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, and to develop a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.</li> </ul>	<ul style="list-style-type: none"> <li>• Cumulative area of degraded agricultural landscape rehabilitated and under sustainable management practices.</li> <li>• Adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the extent to which project interventions are contributing to sustainable land and water management in the Eastern Nile Basin.</li> </ul>

Intermediate Outcomes	Intermediate Outcome Indicators	Use of Intermediate Outcome Monitoring
<b>Community watershed management component</b>		
Increased adoption of sustainable land management practices in agricultural landscapes.	<ul style="list-style-type: none"> <li>• Cumulative area of agricultural landscape under sustainable land and water management practices.</li> <li>• Increase in the yields of dominant crops and livestock.</li> </ul>	To evaluate the impacts of increased adoption of sustainable land management practices on crop and livestock production in rain-fed and small- scale irrigated farmlands.
<b>Knowledge for Cooperative Action Component</b>		
The technical capacity of regional and national institutions in watershed management in the Eastern Nile countries is strengthened.	<ul style="list-style-type: none"> <li>• Number of staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.</li> <li>• Number of new information products (e.g. publications, CDs, status reports) developed to increase sharing of information on watershed management, including on best management practices, among the riparian countries in the Eastern Nile Basin.</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the extent to which knowledge management and dissemination interventions implemented under the project has contributed to increased technical capacity in watershed management institutions in the riparian countries.</li> </ul>
Development and adoption of guidelines for integrated and sustainable management of Lake Nasser/Nubia Sub-basin to guide decision-making	<ul style="list-style-type: none"> <li>• Sectoral or thematic guidelines for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin are completed and adopted by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.</li> <li>• Existence of a</li> </ul>	<ul style="list-style-type: none"> <li>• To assess the result of project support for the development of guidelines for integrated and sustainable management of Lake Nasser/Nubia Sub-basin</li> </ul>

	functional inter-ministerial coordinating committee or its equivalent.	
<b>Project management</b>		
An effective project management system is established.	<ul style="list-style-type: none"> <li>Planned project activities are implemented.</li> <li>M&amp;E system is established and functional.</li> <li>Micro-projects that comply with the Environmental and Social Management Framework to screen proposed micro-project interventions before approval.</li> </ul>	<ul style="list-style-type: none"> <li>To monitor progress in the implementation of planned project activities and emerging outcomes.</li> </ul>

### **Arrangements for results monitoring**

1. The M&E system, which would build on existing systems in the lead project implementing agencies and under the Nile Basin Initiative, aims at: (a) assessing implementation performance in relation to the expected project outcomes, outputs, and budget; (b) proactively identifying implementation challenges and implementing corrective actions in a timely manner; and (c) documenting lessons learned and incorporating them into decision making on project implementation and sustainability.

2. Overall project performance and outcome: The World Bank and Finland would undertake, at least once a year, undertake supervision or implementation support mission to review jointly with the recipients implementation progress. In addition, a joint team comprising the Ministry of Water Resources and Irrigation (MWRI) in Egypt, the Ministry of Irrigation and Water Resources (MoIWR) in Sudan, and the Eastern Nile Technical Regional Office (ENTRO) would establish a joint monitoring team to undertake two independent reviews of overall project performance and impacts, based on the Results Framework, at mid-term and at the beginning of Year 5 of implementation. The results from these reviews would be used during the mid-term review and implementation completion review to be undertaken jointly by the World Bank and project implementing entities.

3. Community watershed management component: The Local Implementation Units and the Village Development Committee (or its equivalent) would undertake monthly review of project implementation performance against the annual work plans and targets and prepare a report. Project performance would be reviewed quarterly by the Local Project Steering Committee and it will provide guidance on corrective actions to address implementation problems.

4. The monthly community level reports would be submitted to the National Project Coordinating Unit in MoWRI, which would be an input for the consolidated quarterly and annual reports for the project. These reports would be reviewed quarterly by the National Project Steering Committee and would provide guidance, as needed, to address implementation shortcomings.

5. Regional capacity building sub-component: ENTRO would prepare quarterly reports on the implementation performance and progress towards the intermediate outcomes for this sub-component. It would also prepare quarterly and annual consolidated reports covering all project activities at the regional level and in Egypt and Sudan for the Eastern Nile Council of Ministers, which is the steering committee for the project.

6. Lake Nasser/Nubia sub-component: The MWRI and MoIWR would jointly prepare quarterly and annual reports on the implementation of project activities. The reports would be reviewed by the Joint Technical Oversight Committee, which is made up of representatives from both agencies. Through this committee, agreement would be reached on corrective actions to address implementation issues.

7. ENTRO and MWRI have adequate technical capacity and systems for monitoring and evaluation of their sub-components. This is not the case for the MoIWR.. Therefore, the project would finance technical assistance and equipment to strengthen the M&E systems at the village, locality, and national levels. There would be independent third party evaluation of project implementation progress and outcomes.

### Arrangements for Results Monitoring<sup>4</sup>

Project Outcome Indicators	Baseline <sup>5</sup>	Target Values					Data Collection and Reporting		
		YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
<ul style="list-style-type: none"> <li>Cumulative area of degraded agricultural landscape rehabilitated under sustainable land and water management practices</li> </ul>	negligible	n/a	At least 10 ha	At least 25 ha	At least 40 ha	At least 50-60 ha	At mid-term and project completion	Landscape survey	Ministry of Irrigation and Water Resources, Sudan.
<ul style="list-style-type: none"> <li>Adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.</li> </ul>	0	n/a	n/a	1	n/a	n/a	At mid-term and project completion	Progress reports	Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.
Intermediate Outcome Indicators	Baseline	YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
Community Watershed Management Component									
<ul style="list-style-type: none"> <li>Cumulative area of agricultural landscape under sustainable land</li> </ul>	negligible	n/a	At least 10 ha	At least 25 ha	At least 40 ha	At least 50-60 ha	Annually after Year 1	Landscape survey/Impact evaluation	Ministry of Irrigation and Water Resources,

<sup>4</sup> Detailed baseline surveys will be undertaken in Year 1 of project implementation to confirm/update site specific baseline values.

Project Outcome Indicators	Baseline <sup>5</sup>	Target Values					Data Collection and Reporting		
		YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
and water management practices (percent)			ha	ha	ha	60 ha			Sudan.
<ul style="list-style-type: none"> <li>Increase in the average yields of dominant crops.</li> </ul>	e.g. Sorghum (750kg/ha)  Cowpea (500kg/ha)	n/a	n/a	At least 50	At least 70	At least 70	Annually after Year 1	Crop surveys survey/Impact evaluation	Ministry of Irrigation and Water Resources, Sudan.
<b>Knowledge for Cooperative Action Component</b>									
<ul style="list-style-type: none"> <li>Number of staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.</li> </ul>	0	30	40	40	40	40	Annually after Year 1	Progress reports/Impact evaluation	Eastern Nile Regional Technical Office (ENTRO).
<ul style="list-style-type: none"> <li>Number of new information products (e.g. publications, CDs, status reports) developed to increase sharing of information on watershed management, including on best management</li> </ul>	0	2	3	3	3	3	Annually after Year 1	Progress reports/Impact evaluation	Eastern Nile Regional Technical Office.

Project Outcome Indicators	Baseline <sup>5</sup>	Target Values					Data Collection and Reporting		
		YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
practices, among the riparian countries in the Eastern Nile Basin.									
<ul style="list-style-type: none"> <li>Key sectoral or thematic guidelines for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin, which would constitute the framework, that are completed and adopted by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.</li> </ul>	0	0	At least 2	At least 3	n/a	n/a	Annually after Year 1	Progress reports	Ministry of Irrigation and Water Resources, Sudan and the Ministry of Water Resources and Irrigation, Egypt.
<ul style="list-style-type: none"> <li>Existence of a functional inter-ministerial coordinating committee or its equivalent (for Egypt and Sudan).</li> </ul>	0		2	2	2	2			
<b>Project Management</b>									
<ul style="list-style-type: none"> <li>Planned project activities are implemented.</li> </ul>	n/a	At least 60%	At least 80%	At least 80%	At least 80%	At least 90%	Continuous	Progress reports	Ministry of Irrigation and Water Resources,

Project Outcome Indicators	Baseline <sup>5</sup>	Target Values					Data Collection and Reporting		
		YR1	YR2	YR3	YR4	YR5	Frequency and Reports	Data Collection Instruments	Responsibility for Data Collection
									Sudan, Ministry of Water Resources and Irrigation, Egypt and the Eastern Nile Regional Technical Office
<ul style="list-style-type: none"> <li>M&amp;E system is established and functional.</li> </ul>	n/a	1	1	1	1	1	Quarterly/Annually	Progress reports	Ministry of Irrigation and Water Resources, Sudan, Ministry of Water Resources and Irrigation, Egypt and the Eastern Nile Regional Technical Office
<ul style="list-style-type: none"> <li>Systematic use of the Environmental and Social Management Framework to screen proposed micro-project interventions before approval (percentage of micro-projects).</li> </ul>	n/a	100	100	100	100	100	Quarterly/Annually	Progress and evaluation reports	Ministry of Irrigation and Water Resources, Sudan, Ministry of Water Resources and Irrigation, Egypt and the Eastern Nile Regional Technical Office

## **Annex 4 - Detailed Project Description**

### Project Development and Global Objectives

1. The Project Development Objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin. The Global Environment Objectives are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, and the adoption of develop a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin.

2. These objectives would be achieved through the following three components – Community Watershed Management, Knowledge for Cooperative Action and Project Management. Project-financed interventions would be implemented in the following sub-watersheds in Sudan -- Lower Atbara, Bau (or Ingessana), Dinder, and Lau; and Lake Nasser/Nubia (in Egypt and Sudan) (See Figure 1 below).



### ***Community watershed management Component (US\$25.6 million)***

3. The objective of this sub-component is to promote sustainable land and water management practices and technologies aimed at reducing land degradation, and increasing agricultural productivity. The component activities would be implemented in the Atbara, Bau (or Ingessana), Dinder, and Lau localities. These sub-watersheds were selected through consultations at the national, state, and community level led by a core team in the Ministry of Irrigation and Water Resources. The selection was based on the following criteria: (a) they are the major sources in Sudan of sediments that end up in the Nile River; (b) they provide an opportunity to address land degradation in representative ecological systems in Sudan – desert, savanna, and wetland/forest; and (c) they have the demonstration potential for other watersheds in Sudan. Project support is expected to benefit a total of 60,000 – 70,000 households.

4. Project sites: The project would finance on-the-ground activities in three sub-watersheds – Lower Atbara, Bau (or Ingessana), and Dinder – which are the major sources in Sudan of sediments that end up in the Nile River. These sub-watersheds are also representative of the major terrestrial ecosystems in Sudan – desert, savanna, and wetlands/forests. Because of very limited institutional capacity in the Lau sub-watershed area, project support would focus on creating awareness on watershed management and building the capacity of communities and local officials of the Maiwut locality.

#### ***Lower Atbara Sub-watershed***

5. The Lower Atbara Sub-watershed is in Ed Damer in Nile State. It is a desert area, covering an area of 5,790 ha, with an average annual rainfall of 75 mm. The area has a population of 80,000 people and most of them (80 percent) are settled farmers and the rest are pastoralists. Farming is mostly small-scale, with an average farm size of one hectare. The major crops farmers cultivate are sorghum, beans, and vegetables along the Atbara River. During the flood season (July - October), small-scale farmers pump groundwater from boreholes to irrigate their crops. Rain-fed agriculture is limited because of the arid conditions in the area. There are also large scale irrigated farms in Lower Atbara, covering a total area of 15,000 ha, close to the towns of Atbara and Ed Damer.

6. The Lower Atbara sub-watershed can be divided into three zones based on the type of land use. The first zone is the area between Atbara town and Sidon town. About 90 percent of the population in this area is sedentary small scale farmers who produce at least two crops a year using flood water and pump irrigation.

7. The second zone is found between Sidon town and Shababit. In this area, about half of the population is made up of sedentary small scale farmers who practice flood recession farming. The area is arid so farmers produce only one crop per year. An area of about 17,000 ha is under large mechanized farming.

8. The last zone is found between Shababit and the Kassala border. This is the area most severely affected by land degradation. Nomadic and semi-nomadic groups make up about 90% of the people in this area.

9. The main drivers of land degradation in the Lower Atbara sub-watershed are conversion of forests and woodland to smallholder and semi-mechanized agriculture and overgrazing of communal lands. As a result, almost all the forests along the Atbara River, about 20,000 – 40,000 ha in size, have been destroyed. Deforestation has also accelerated sand dune encroachment, destroying fertile lands and community infrastructure. In addition, over-cropping of the land, with limited or no external fertilizer input, and poor water management on irrigated farms have led to the loss of soil fertility.

10. Under the proposed component, it is expected that about 15,000 households in 23 villages in the Lower Atbara Sub-watershed would benefit from interventions to be financed under the project. (See Table 1 below for details on the communities that would participate in component activities). The villages were selected based on the following criteria: (a) extent to which land degradation is negatively affecting agricultural productivity and household incomes, (b) impact of land degradation on sedimentation in the Atbara River, and (c) the potential of local organizations to lead watershed rehabilitation and management activities.

**Table 1 - Profile of the Participating Villages in the Lower Atbara Sub-Watershed**

<b>Area</b>	<b>Land area (Km2)</b>	<b>Agricultural land (Km2)</b>	<b>Population</b>	<b>Major land use</b>
23 villages between the towns of Atbara and Sidon	590	210	30,000	Agriculture (Small-scale flood recession, rain-fed, and pump irrigated agriculture)
22 villages between the towns of Sidon and Shababit	1,200	890	12,000	Agriculture (Flood recession, rain-fed, and pump irrigated agriculture) and pastoralism
17 villages between Shababit and the Kassala border	4,000	97	8,000	Pastoralism and small-scale rain-fed agriculture

***Bau (or Ingessana) Sub-watershed***

11. The Bau sub-watershed is located in the Bau (or Ingessana) locality in the Blue Nile State. The area is in the savanna zone where the average annual rainfall is 600-800 mm. This sub-watershed can be divided into the following three areas – low-lying farmlands, foothills of the Ingessana hills, and the Ingessana hills. The Bau sub-watershed has a total population of 100,000 people and most of them practice smallholder rain-fed agriculture and livestock production.

12. The main environmental issue in the Bau Sub-watershed is land degradation associated with deforestation. The main cause of deforestation is conversion of forests and woodlands into semi-mechanized farms. Most of these farms are now abandoned because poor soil and water

management led to salinization and loss of soil fertility. From 1984 to 2003, about one-third of the forests and woodlands in the Bau area (about 420,000 ha) was lost to mechanized farming. The other major cause of deforestation is overexploitation of forests and woodlands for firewood and for making charcoal.

13. It is expected that about 20,000 households in 27 villages in the Bau Sub-watershed would benefit from interventions financed under this project (See Table 5 below for details on the communities that would participate in the sub project.) The villages were selected based on the following criteria: (a) extent to which land degradation is negatively affecting household agricultural productivity and incomes, (b) impact of land degradation on sedimentation in the Bau River, and (c) potential of local organizations to lead watershed rehabilitation and management.

**Table 2 - Continuing Profile of the Participating Villages in the Bau (or Ingessana) Sub-Watershed**

Area	Land area (Km2)	Agricultural land (Km2)	Population	Major land use
Five villages in Ingessana hills		6,300	60,000	Mining
Ten villages in the foothills of the Ingessana hills				Small-scale farming and pastoralism
Twelve villages in the low lying areas in Ingessana				Large-scale mechanized and semi-mechanized farming and pastoralism

### *Dinder Sub-watershed*

14. The Dinder sub-watershed comprises the Dinder National Park and its adjacent communities. The park was established in 1935 and it covers a total area of 8,960 sq. km in three states, Sennar, Blue Nile, and Gedarif. The park comprises a very large complex of about 40 “mayas,” (i.e. natural water collection points) and pools formed by meanders and oxbows that are part of the Rahad and Dinder river drainage systems on the Sudan-Ethiopia border. The wetlands are vital as a source of water and nutritious grasses for herbivores, especially during the dry season.

15. The Dinder National Park has a high level of biodiversity, including more than 160 species of birds, 27 species of large mammals, including elephant, lion, and buffalo. It is also at the center of migration routes for several bird species among three continents –Africa, Europe, and Asia. The biodiversity of the park has global recognition. The park is a UNESCO Biosphere Reserve as well as a Ramsar site (i.e., a Wetland of International Importance.)

16. The population of the Dinder Sub-watershed, about 185,500 people, can be found in five groups of villages or communities in the southern part of the park.

17. The first set of villages is the Rahad River villages in Gedaref State. Thirty-eight of the villages are outside the park boundaries and the remaining 10 villages are inside the park. Rainfall in the area is low (an average of 550- 850 mm/year) and the people are mostly farmers who cultivate sorghum and sesame under rain-fed conditions and fruits and vegetables during the flooding season (May – November)
18. The second set of villages is the five villages in Sennar State, along the Dinder River in the northern part of the Park. The average annual rainfall in this area is 550-850 mm. The people in this area practice mostly rain-fed agriculture.
19. The third community is the Magano village, which is located inside the park because of the expansion of the park boundaries in 1983. This community comprises about 450 people who practice rain-fed subsistence agriculture. The average annual rainfall in the area is 550-850 mm. During the dry season (November - April) many people temporarily move to other parts of the park where water is available.
20. The fourth group of 32 villages is found in Blue Nile State. These villages are adjacent to the western border of the park, about 10 km from the boundary. The total population in this area is 10,000 and their main source of livelihood is rain-fed subsistence farming.
21. The last community, which is made up of semi-sedentary pastoralists, is located around the Rahad River. The pastoralists graze their livestock inside the park during the dry season. Other pastoralists whose livestock graze inside the park are from Butana and Gadaref, where they were displaced from their traditional rangelands because of the expansion of large scale mechanized farms.
22. The main environmental issues associated with land use in the Dinder area are overgrazing and the siltation of mayas. It has been estimated that up to 900,000 cattle, 2 million sheep, and 500,000 camels graze within the park from January to June each year searching for water and pasture, increasing the risk of overgrazing. Addressing this problem is beyond the scope of the proposed project because it requires a separate protected areas management operation. Siltation of the mayas in the park is the result of soil erosion in the Ethiopia Highlands. Drying of mayas deprive people, livestock, and wildlife, including migratory birds, of water during the dry season.
23. Sustainable land and water management interventions to be implemented under this project are expected to benefit about 30,000 households in 13 villages in the Dinder sub-watershed, including three villages within the park to pilot sustainable land and water management practices in communities within the boundaries of a protected area. (See Table 3 below for details on the communities that would participate in the sub project.) The villages were selected based on the following criteria (a) the extent to which land degradation is negatively affecting household agricultural productivity and incomes, (b) the impact of land degradation on sedimentation of the wetlands in the Dinder area, and (c) the potential of local organizations to lead watershed rehabilitation and management.

**Table 3 - Profile of the Participating Villages in the Dinder Sub-Watershed**

Area	Land area (Km2)	Agricultural land (Km2)	Population	Major land use
Six villages (3 villages inside and 3 villages outside the park along the Rahad river)			160,000	Within the park: rain-fed agriculture, livestock production, and firewood collection. Outside the park: irrigated agriculture, growing of fruit trees, and livestock production
Five villages along the Dinder river				Rain-fed agriculture and livestock production
Magano village				Rain-fed agriculture and livestock production
Kadalo villages				Rain-fed agriculture, livestock production, and collection of gum

### **Project Component Description**

24. Project components: The design of the Community Watershed Management component (\$22.6 million) builds on successful pilots and lessons learned in Sudan and it would be implemented through the following two sub-components, (a) natural resource management, and (b) sustainable agriculture.

25. Natural resource management sub-component (\$15.4 million): The objective of this sub-component is to strengthen management of natural resources in the targeted communities, particularly forests and rangelands that are under pressure from over-harvesting and overgrazing. There would be two major interventions under this sub-component, capacity building and resource management:

26. (i) *Capacity building*: The project would finance technical assistance, training, equipment, and incremental costs for the following activities: strengthening community organizations; preparation of local guidelines for community-based natural resource management; training on the guidelines for local government, community organizations; development of micro-watershed management and development plans, which would cover, among other things, priorities for forest and range management, and sustainable agriculture. For the Dinder sub-watershed, in addition to this support, the project would provide support for collaborative park management, including awareness raising and training in park management for both park staff and communities. It would also provide assistance to strengthen mechanisms for community involvement in protected area management.

27. The following are the major steps that would be followed for the development and approval of the micro-watershed management and development plans, which are expected to be completed within six months:

(a) Selection of priority villages (i.e., micro-watersheds) to be the focus of project support for each year based on organizational readiness (i.e. selection of community leadership team, representing various stakeholder groups, for project planning and implementation; and development of a tentative schedule for activities that would lead to the completion of participatory micro-watershed management and development plans);

(b) Capacity building for existing community organizations, including traditional organizations, in micro-watershed planning and management;

(c) Biophysical and socio-economic surveys to identify priority land and water management issues and their environment, economic and social impacts;

(d) Development by the communities, with technical assistance, of priority watershed rehabilitation, management, and development activities;

(e) Development of multi-year micro-watershed management and development plans, comprising priority watershed rehabilitation, management and development interventions, ensuring gender equity, with detailed work plans and budget for at least the first year, and participatory monitoring and evaluation plan;

(f) Submission of the micro-watershed management and development plan, with a detailed annual implementation plan, at least for the first year, that meets project requirements, including environmental and social safeguard measures, to the Locality Steering Committee and the National Project Coordinating Office for the project for approval;

(g) Implementation of the micro-watershed management and development plan; and

(h) Preparation of quarterly community-level monitoring and evaluation of implementation, with the results feeding into the project's overall M&E system.

27. (ii). *Resource management*: The project would finance technical assistance, specialized training, and investments in forest management or range management (depending on the agro-ecological zone) which communities have identified in their micro-watershed management and development plans as a priority. Forest management activities would include agro-forestry, reforestation and management of communal lands, abandoned mechanized farms, forest reserves, and the establishment of community forest such as woodlots, gum Arabic plantations, and shelterbelt for sand dune fixation, and alternative energy sources that help to reduce unsustainable exploitation of forests.

28. Range management activities to be financed under the project would include mapping of seasonal livestock migration routes and the rehabilitation of rangelands through stock management, re-seeding, development and management of water points, improved grazing systems, and reforestation. For both forest and range management, only interventions communities have identified in their resource management plans would be financed by the project.

29. Sustainable agriculture sub-component (\$10.2 million): The objective of this sub-component is to promote wider adoption of innovative practices and technologies for sustainable soil fertility and water management through the following two interventions: innovations in agriculture and water harvesting. Project support would be based on priorities for sustainable agriculture outlined in the community natural resource management plans.

31. (i) *Innovations in Agriculture*: The project would finance technical assistance, training, equipment, and incremental costs for the establishment of demonstration farms on farmers' fields. It would also support the transfer of knowledge, technology, and support services for farmers interested in adopting the demonstrated innovations. Special emphasis would be placed on high value crop varieties, identified as a priority in the micro-watershed management and development plans. The agricultural extension service in the locality would lead the implementation of these activities.

32. (ii) *Water harvesting*: Under this sub-component, funds would be available for the development of water harvesting structures to improve access to water for people, agriculture, and livestock, mainly through the harvesting of rain water. The project would finance technical assistance, training, civil works, equipment, and incremental costs for capacity building to assist local communities to develop structures such as farm ponds, storage tanks, and springs to harvest rainwater for domestic use and small scale irrigation. A total area of up to 4,250 ha would benefit from supplementary irrigation (2,085 ha each in Lower Atbara and Bau, and 80 ha in Dinder).

33. *Sub-Grant*: To support adoption and scaling up of innovations in natural resource management and sustainable agriculture identified as priority in the community natural resource management plans, the project would provide grants to community organizations to support such initiatives. The Project Implementation Manual will outline in detail eligible activities, eligibility criteria for an organization to access the grants, simple procedural steps for application, appraisal, approval, and monitoring, and avenues for dispute and complaints resolution.

34. Project support would help to rehabilitate selected mayas in the Dinder area. It would also finance a limited number of small scale boreholes to provide safe drinking water for local communities. Areas and types of water harvesting structures to be supported under this sub-component should be those that communities have identified in their micro-watershed management and development plans as a priority. Project financing for such infrastructure would be available only after a community has prepared and adopted (e.g., by the Village Development Council) an infrastructure maintenance plan and individuals in the community have been trained to implement it.

35. The project would provide seed funds and finance technical assistance and capacity building activities to establish the revolving fund and to build the associated capacity for effective management and utilization this would require.

36. The expected outcomes of this sub-component are (i) increased land area under sustainable land management, (ii) increased agricultural productivity, and (iii) increased household incomes.

### **Knowledge for Cooperative Action Component (\$4.2 million)**

37. The objective of this component is to strengthen the knowledge base and human resource capacity for cooperative action on watershed management in the Eastern Nile Basin. At the regional level, project support would focus on facilitating training and exchange of information (including on best management practices) and expertise on watershed management. This component would have the following sub-component – (i) Regional capacity building; and (ii) Lake Nasser/Nubia.

#### ***(a) Regional Capacity Building Sub-component (\$1.5 million)***

38. Project financing under this sub-component would specifically focus on the following two sets of interventions:

(i) *Regional sediment and water quality monitoring*: The project would finance technical assistance and training to develop harmonized standards, methods and protocols for the sharing of information on sedimentation and water quality. ENTRO, in consultation with the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan would set up a panel of expert to provide technical guidance for this work. The harmonized standards, methods and protocols would be finalized after consultative workshops involving specialists from the three countries and other experts.

(ii) *Data Collation*: Under this component, the project would finance technical assistance and training to collate data on sedimentation and water quality from national institutions, analyze them to determine regional trends, and disseminate the information among the riparian countries to support the watershed management decision making.

39. The relevant ongoing work in the Nile Basin, which the project would build on, includes the following:

- The Strategic Vision Program (SVP) Water Resources Planning and Management (WRPM) project has been officially delegated by the Nile-COM to develop the Nile Decision Support System (Nile-DSS), which includes an information management system, NBI procedures for information sharing and exchange, and the Eastern Nile Planning model, which is under development in ENTRO. Any data collected in the Eastern Nile Watershed Management Project would be shared with these two projects.

- The SVP Transboundary Environmental Action Project (NTEAP) has developed procedures for water quality monitoring, which the SVP WRPM project would include in the overall NBI procedures for information sharing and exchange.
- As part of the NBI Institutional Strengthening Project (NBI ISP), an “IWRM function” will be created at the Nile SEC. Two important activities related to this include: (a) development of a Nile Basin Sustainability Framework, which will include a suite of water, environment, and other relevant policies and strategies to facilitate sustainable development of the Nile, and (b) operationalization of these policies through the development of common NBI guidelines and standards for selected policies (i.e., standard environmental impact assessment and data information sharing procedures.)

40. *Regional capacity building and coordination:* The project would finance joint training for participants from the riparian countries and for technical staff exchanges to strengthen cooperation and capacity in watershed management. It would also finance coordination and exchange of knowledge and experiences on innovations and best practices from watershed management projects across the Eastern Nile Basin and around the world. This activity would be closely linked to the GEF’s International Waters Learning and Exchange Resource Network (IWLEARN), which is aimed at strengthening International Waters Management by facilitating structured learning and information sharing among stakeholders.

41. ENTRO, in consultation with experts and practitioners from the riparian countries, would develop a program of short specialized courses (2-3 weeks) related to watershed management for all three Eastern Nile countries, and short term (one month) exchange of staff among the riparian countries. It would also develop a variety of information products such as technical notes, brochures, and CDs on best management practices in watershed management, and lessons learned, for dissemination to assist a broad range of stakeholder groups, including policy makers in decision making.

42. The expected outcomes of the above interventions are: (i) increased technical capacity of the institutions involved in watershed management in the Eastern Nile Basin; and (ii) information products are developed to increase sharing of information on watershed management, including on regional environmental trends, best management practices, and to support decision making in the riparian countries on proactive balancing of competing resource uses.

***(b) Lake Nasser/Nubia Management Sub-component (\$2.7 million)***

43. The objective of this sub-component is to assist Egypt and Sudan to jointly enhance the knowledge base and develop a framework (i.e. principles and guidelines) for integrated and sustainable management of the land and water resources of Lake Nasser/Nubia.

44. Sub-component site: The Lake Nasser/Nubia sub-component would be implemented jointly by Egypt and Sudan. The lake was created following the completion of the Aswan High

Dam in 1970. At a total length of about 500 km and a surface area of 6,600 square km (350 km in Egypt covering an area of 5,600 sq. km and 150 km covering an area of 1,000 sq. km in Sudan), it is one of the largest man-made reservoirs in the world. This reservoir provides water for hydropower generation in Egypt, producing about 8,000 MWh/year. It also provides water for agricultural intensification in Egypt and Sudan.

45. Lake Nasser/Nubia is an important transit habitat for migrating birds from Europe that spend the winter in Africa. It also supports globally endangered flora and fauna, including the Nile crocodile (*Crocodylus niloticus*) and the Dorcas gazelle (*Gazella dorcas*).

46. The Lake basin has a total population of about 2.2 million people, 1 million people on the Egyptian portion and 1.2 million people on the Sudanese part of the basin. Nearly all of this population lives outside the buffer area, which is 6-10 km from the shoreline of the lake. The area is largely rural and the main livelihood activities are small-scale fishing, agriculture, and pastoralism.

47. The fisheries in Lake Nasser/Nubia are based largely on tilapia species. There are about 6,000 seasonal fishermen who live in 150 temporary fishing camps or on their boats. The fish harvested are landed at three fishing harbors in Garff Hussein and Abu Simbel on the western part of the lake. Fish harvests have declined during the last two decades. About 34,000 tons of fish were harvested in 1981, but catches dipped to nearly 15,300 tons by 2005. The two main reasons for this decline are overfishing, especially of undersized fish, and increased siltation of the lake. To replenish fish stocks, the Lake is re-stocked with fingerlings from seven hatcheries in Sahary, Garff Hussein, Toshka, and Abu Simbel.

48. The other environmental problem adversely affecting the lake's ecosystem is sedimentation. The sediments originate largely from the degraded highlands of Ethiopia. Overall, human-induced environmental degradation in the basin is not a major problem because of low population pressure and the absence of major development activities. However, this situation could change if future development activities are not planned and implemented in an environmentally and socially sustainable way.

49. Project support, which would be jointly planned by Egypt and Sudan, would focus on the following two sets of interventions (a) environmental quality monitoring; and (b) development of management guidelines.

50. *Environmental quality monitoring*: The project would provide support to collect and analyze biophysical (mainly sedimentation, water quality and selected limnological parameters) and socio-economic information necessary for the development and implementation of the Lake Nasser/Nubia transboundary management framework.

51. Project support related to sedimentation and water quality would build on ongoing initiatives. The Ministry of Water Resources and Irrigation (MWRI) in Egypt and the Ministry of Irrigation and Water Resources (MoIWR) in Sudan have initiated joint bi-annual sediment surveys on Lake Nasser/Nubia. The objectives of these surveys are to provide information on the

process and pattern of sediment movement and deposition, and on water quality, for management action where necessary.

52. There are two surveys a year in January, before the flood season, and in July/August after the flood season. Each survey lasts about one month and the research vessel carries a team of about 200 people. Among the parameters measured during the surveys are (a) water levels at the sites of existing standard gauges, (b) in-situ measurement of velocity, discharge, and water depth at 20 transects in the lake, (c) hydrographic survey of the lake bottom at 20 transects and estimating the bathymetric bottom contour mapping, with sampling of bottom clay sediment; (d) sediment concentrations at a number of locations using depth-integrating samples and pump point samples. (The depth-integrating sample measures the average sediment concentration vertically, and the pump point sample measures concentrations at a specific point in the water column.), (e) geological formation analysis and geo-morphological survey of the lake bottom; and (f) monitoring the growth/types/intensity of floating and semi-floating weeds such as water hyacinth and bank vegetation along the lake.

53. Information on water quality would also be collected during the sediment surveys. This information would complement data generated from other ongoing water quality monitoring activities on Lake Nasser/Nubia financed by the Government of Egypt and Sudan.

54. Project support would specifically focus on providing technical assistance, equipment, training, and incremental survey costs to improve sediment monitoring in Lake Nasser/Nubia, including refining survey and measurement procedures and techniques, sand encroachment analysis, mathematical modeling tools and procedures, and database system protocols. Project finance would also help to improve the temporal and spatial coverage and the accuracy of sediment surveys on Lake Nasser/Nubia; and would enable a better understanding of the major sources of sediments in the lake. The sediment survey would build on, and expand and update, existing monitoring and modeling systems and databases in Egypt and Sudan.

55. Other major data on environmental quality will not be financed by the project, but would be obtained from ongoing initiatives being financed by the Government of Egypt, mainly sand encroachment monitoring from climatological and sand direction stations around Lake Nasser/Nubia and fisheries from the Fisheries Management Centre.

56. The project would finance technical assistance and incremental operating costs for socio-economic surveys using participatory methods to collect information such as population levels and distribution, their socio-economic status, and trends in the use of the natural resources in the lake basin. It would also support a review of current and planned development activities and stakeholder consultations at the local, national, and sub-basin levels.

57. *Development of management guidelines:* The project would finance technical assistance and training to develop, in a participatory way, principles and guidelines to support the integrated and sustainable management of the resources of Lake Nasser/Nubia, including balancing competing uses, based on the information generated from the biophysical and socio-economic surveys above and stakeholder consultations. Special emphasis would be placed in the framework on agriculture, and on tourism and fisheries, which are expected to become the key

sectors in any future development activities in the lake basin. To facilitate the application of the principles and guidelines in the framework, the project would finance public awareness and capacity building activities for both government and non-government stakeholders.

58. The expected outcome of the above interventions is the completion of principles and guidelines (or integrated management framework) to guide future management and development activities in the Lake Nasser/Nubia basin.

### **Project Management Component (\$5.6 million)**

59. The objective of this component is to finance technical and capacity building assistance, and incremental operating costs for existing regional, national, and local entities that would be responsible for the implementation of the proposed project. Implementation at the regional level would be led by ENTRO. National level implementation in Egypt would be led by the Ministry of Water Resources and Irrigation, and Sudan by the Ministry of Irrigation and Water Resources.

60. Most of the assistance would go towards the implementation of the largest project component – community watershed management. At the community level, where planning and implementation of watershed interventions would occur, existing Local Implementation Units mainstream into the local administration and community organization would provide leadership (See Annex 6 for details).

## Annex 5: Project Costs

Regional			
Eastern Nile Watershed Management Project			
Components Project Cost Summary	(US\$ millions)	(US\$ millions)	(US\$ millions)
	Local	Foreign	Total
<b>A. Component 1: Community Watershed Management</b>			
Sub-Component 1.1: Natural Resource Management	10.86	3.49	15.35
Sub-Component 1.2: Sustainable Agriculture	6.44	3.01	9.46
<b>Subtotal Component 1: Community Watershed Management</b>	17.30	6.50	23.80
<b>B. Component 2: Knowledge for Cooperative Action</b>			
Sub component 2.1: Regional Capacity Building	0.92	0.61	1.53
Sub-Component 2.2: Lake Nasser/Nubia	1.79	0.91	2.70
<b>Subtotal Component 2: Knowledge for Cooperative Action</b>	2.71	1.52	4.23
C. Component 3: Project Management	3.90	1.21	5.11
<b>Total BASELINE COSTS</b>	23.92	9.23	33.15
Physical Contingencies	0.81	0.47	1.28
Price Contingencies	0.65	0.32	0.98
<b>Total PROJECT COSTS</b>	25.38	10.02	35.40

## **Annex 6: Implementation Arrangements**

1. The proposed project would be implemented through existing institutional arrangements established by the Eastern Nile countries at the regional, national, and local levels.

### Regional strategic policy guidance

2. At the Basin level, the project would be implemented through existing organizational structures already established and operational by the riparian countries of the Eastern Nile Basin – Ethiopia, Egypt, and Sudan. The Eastern Nile Council of Ministers (ENCOM) would provide overall policy and strategic guidance for the implementation of the proposed project. ENCOM would be assisted by its technical team, the Eastern Nile Subsidiary Action Program Team (ENSAPT). The three lead project implementing agencies, the Eastern Nile Technical Regional Office (ENTRO), the Ministry of Water Resources and Irrigation (MWRI) in Egypt, and the Ministry of Irrigation and Water Resources (MoIWR) in Sudan will submit to ENCOM a joint report on the status of project implementation and progress in achieving project outcomes every six months.

### Operational level

3. At the operational level, project activities would be implemented through existing institutional arrangements within the following organizations:

(i) Regional Capacity Building Sub-component: The Eastern Nile Technical Regional Office (ENTRO) would lead the implementation of the Regional Capacity Building interventions through its watershed coordination team. The team would be supported on procurement and financial management by its Finance and Administration Unit.

4. (ii) Lake Nasser/Nubia Sub-component: The proposed interventions to be implemented under this sub-component would be an expansion of an ongoing program. As with the other components/sub-components of the project, the ENCOM, assisted by the ENSAPT, will provide overall policy and strategic guidance. The Ministry of Water Resources and Irrigation (MoWRI) in Egypt represented by the Nile Water Sector (NWS), in collaboration with the Ministry of Irrigation and Water Resources (MoIWR) in Sudan, would lead the implementation of the Lake Nasser/Nubia Sub-component. Implementation will specifically be led by their respective National Project Coordinators for the Eastern Nile Watershed Management Project. ENTRO and a joint (Egypt/Sudan) technical committee will play a technical advisory role during project implementation.

5. The following agencies would be responsible for “on-the-ground” implementation of project activities under this sub-component -- Egypt: High Aswan Dam Authority and the Nile Research Institute, both in the Ministry of Water Resources and Irrigation (MWRI) in Egypt; and from Sudan, the Water Resources Technical Organ in the Ministry of Irrigation and Water Resources (MoIWR). These agencies will continue to draw on existing collaboration with

other organizations such as research institutes, government agencies, and other stakeholder groups (see Figure 2).

6. Community Watershed Management Component: As noted above, the lead implementing agency for this component would be MoIWR (see Figure 3 for the organogram for the project). MoIWR has offices at the national and locality (district) level. It would be supported, as needed, by the Ministry of Agriculture and Forestry on issues related to agriculture, range management, and forestry, by the Ministry of Environment and Physical Development and its Higher Council for Environment and Natural Resources on issues related to environmental policies, regulations, and impact assessment and by the Ministry of Tourism and Wildlife, and by the Ministry of Interior on issues related to protected area management.

7. The MoIWR would establish a multi-sectoral National Project Steering Committee (NPSC) to provide policy guidance on project implementation. Membership of the NPSC, to be chaired by the Minister, MoIWR or his/her representative, would include the Ministry of Finance and National Economy, the Ministry of Agriculture and Forestry, Ministry of Tourism and Wildlife, Ministry of Interior (General Administration for National Parks and Wildlife), Ministry of Water Resources and Irrigation, Government of South Sudan (GoSS), Higher Council for Environment and Natural Resources, Forest National Cooperation, Chamber for Federal Governance, State Ministries of Agriculture, Animal Resources and Irrigation from the four participating state governments, and the Government of Finland, one of the co-financers of the project. ENTRO will have observer status on the NPSC.

8. The specific roles of the NPSC are to (a) set overall policy guidelines and oversee project implementation at the national level, (b) approve the consolidated annual work plans from participating localities, and (c) review quarterly and annual project implementation performance reports and provide guidance, as needed, to address implementation shortcomings.

9. A National Project Coordination Unit (NPCU) would be established and mainstreamed within the MoIWR. The NPCU would be responsible for overseeing day-to-day implementation of project activities. Its specific roles would include (a) assisting Local Implementation Units (see details below) to prepare annual locality work plans and consolidating them into the component-wide plans for approval by the NPSC, (b) overall supervision of the implementation in each locality, (c) financial management, (d) overseeing the procurement of goods and services, and (e) providing administrative support to the NPSC. Since there will be no on-the-ground implementation in the Lau Sub-watershed area, the NPCU, in collaboration with the Ministry of Water Resources and Irrigation, Government of South Sudan, would be responsible for planning and implementation of the capacity building activities.

10. The MoIWR would competitively select from its staff a Project Coordinator to lead the NPCU. If a suitable internal candidate is not found, MoIWR would advertise the position externally. The other core technical staff of the NPCU would include a watershed management specialist, a financial management specialist, a procurement specialist, and a monitoring and evaluation specialist. They may be assigned MoIWR staff or consultants.

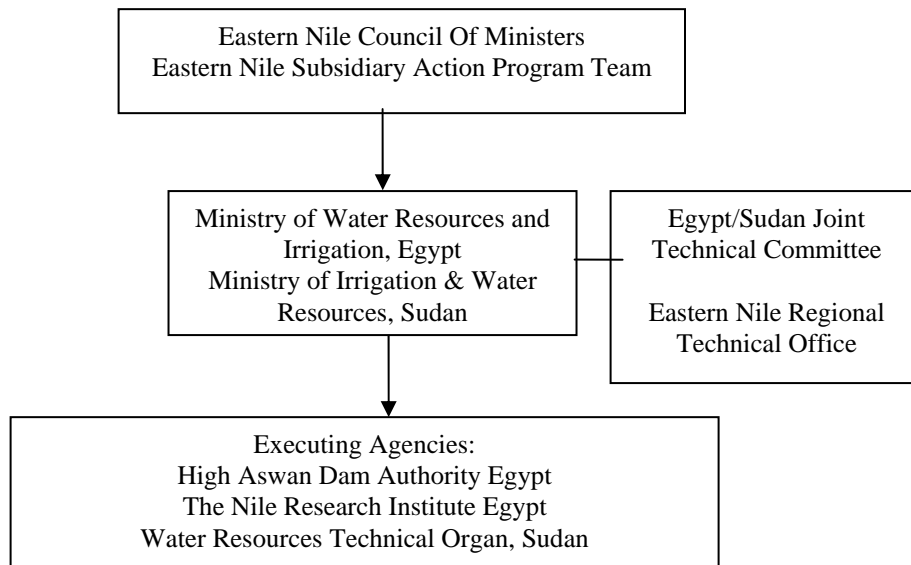
11. A Local Project Steering Committee (LPSC) would be established to: (a) endorse the annual work plans from localities before they are submitted to the NPCU and NPSC; and (d) guide implementation at the locality level and to assist the Local Project Implementation Unit (see details below) to address local implementation issues and facilitate, as needed, linkages between the project implementing institutions, the intended beneficiaries, local government, and non-governmental organizations. The LPSC membership for the Lower Atbara and Bau watersheds would comprise the following persons representing organizations: (a) State Minister of Agriculture, Animal Resources and Irrigation (Chairperson), (b) Locality Executive Manager or Commissioner, (c) State Ministry of Finance, (d) State Ministry of Agriculture, Animal Resources, and Irrigation, (e) State Water Corporation, (f) local government Technical Departments responsible for Finance and Planning, Agriculture, Education, and Services, (g) Forest National Corporation; and (h) community organization, the representative to be selected by the intended beneficiaries to represent them. There would be no LPSC for the Lau sub-watershed area because project activities would be limited to capacity building and awareness-raising on watershed management for local authorities and communities.

12. For the Dinder National Park project area, the LPSC would be chaired by the Director of the Park and the other members would include representatives of the following organizations, (a) State Ministry of Finance, (b) Ministry of Agriculture, Animal Resources, and Irrigation from the three states in which the National Park is located, Sennar, Blue Nile, and Gedarif, (c) Executive Directors of the five localities bordering the Park, and (d) community organization, the representative to be selected by the intended beneficiaries to represent them.

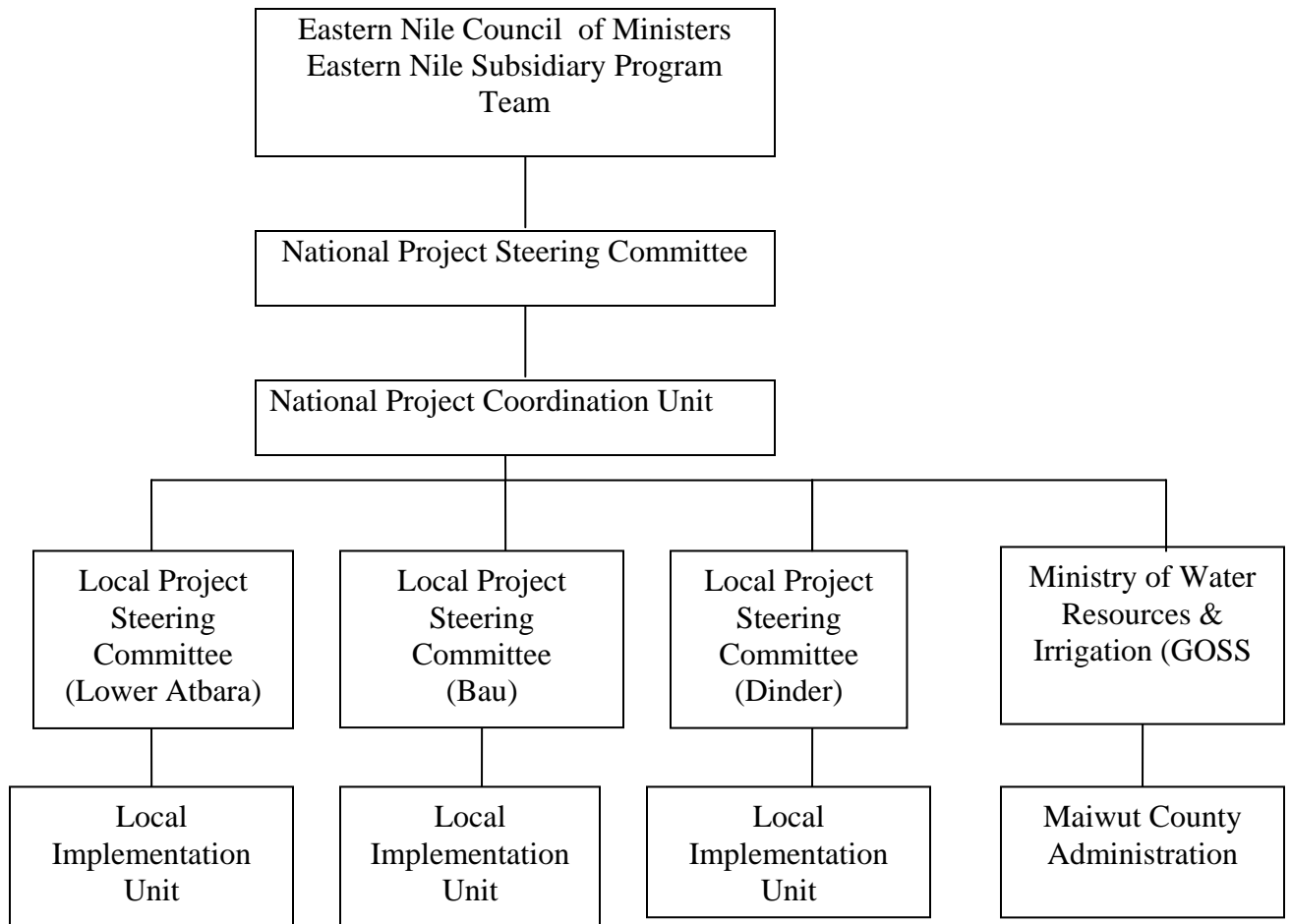
13. Local Implementation Units (LIUs) would be established and mainstreamed into the State Ministry of Agriculture, Animal Resources and Irrigation of Lower Atbara locality and Bau (or Ingessana) to lead, in cooperation with the Village Development Committees or its equivalent, local implementation of project activities in the Lower Atbara and Bau project sites respectively. The LIU for Atbara would be located in Damar locality and Bau in Bau locality. For the Dinder project area, a Local Implementation Unit would be established within the existing Dinder National Park Unit to lead implementation, in collaboration with the local government units in Gedarif, Sennar, and Blue Nile states. There would be no LIU for the Lau sub-watershed. Instead, the implementation of the capacity building and awareness-raising activities would be lead by the Ministry of Water Resources and Irrigation, Government of South Sudan, in collaboration with the Maiwut County Administration and local community organizations.

14. The core staff of each LIU would comprise the following competitively selected internal or external staff: Local Project Coordinator, Finance Officer, Procurement Officer, and Monitoring and Evaluation specialist. These staff would be supported by seconded government staff or short-term and long-term consultants, as needed, with expertise, particularly in water resources engineering, community development, agronomy, forestry, and range management.

Figure 2: Organizational Structure for the Lake Nasser/Nubia Sub-component



**Figure 3 - Organizational Structure for the Sudan  
Community Watershed Management Component**



## **Eastern Nile Watershed Management Project**

### **Annex 7 - Financial Management and Disbursement Arrangements**

#### **Scope and objective of the assessment**

1. The financial management assessment is conducted in line with the Financial Management Practice Manual issued by the FM Board on 3 November 2005. The objective of the assessment is to determine whether the implementing entities have acceptable financial management arrangements that will ensure (1) that the funds are used only for the intended purposes in an efficient and economical way, (2) that accurate, reliable, and timely periodic financial reports are prepared, and (3) that the entities' assets are safeguarded.

#### **Sudan: Inherent Risk Analysis**

2. Sudan Country issues: A Country Integrated Fiduciary Assessment (CIFA) is underway in Sudan following the recent Public Expenditures Review (PER 2006) which revealed that in general the Public Financial Management (PFM) system is functioning reasonably well in the North but needs to be substantially revamped and modernized. Main challenges faced by the federal government PFM systems are (i) the entire accounting and financial system is manual (ii) the budget classification is being aligned with the international standard GFS (iii) improvements are needed in commitment controls, debt management, cash and revenue management, reconciliation of accounts, and there is limited capacity of staff such as accountants, financial experts, and auditors. Besides, the economy, governance and the peace agreement are fragile, and the newly established Multi Donor Trust Funds, administered by the World Bank, has been facing considerable pressure to disburse funds more quickly, while Government experience with World Bank operations is limited. Last but not the least Sudan is still a conflict-affected country despite the CPA signed in 2005. As a result, the country risk is deemed high.

3. Entity level: it has been agreed that the Community Watershed Management component will be anchored at the Ministry of Irrigation and Water Resources (MoIWR) and implemented by a National Project Coordination Unit (NPCU) to be set up within the Ministry. The NPCU will be staffed with qualified specialists from the MoIWR and will use the ministry's institutional and administrative arrangements to implement the project. MoIWR has a good track record in managing donor-funded projects, such as an OPEC/OFID-financed project being successfully managed by a PCU within the MoIWR in Madani. Hence the overall entity risk is considered Moderate.

4. Project level: For the Community Watershed Management component, the NPCU will use the administrative and operational procedures of MoIWR and staff to implement the project with a few specific additional adjustments where appropriate. A Locality Implementation Unit (LIU) will also be created at Dinnar/Atbara, Sennar/Dinder and Bau/Blue Nile. At the moment of this assessment, only one MIRW staff member is designated project

focal point and is working with the MoIWR Finances Division to prepare the financial management arrangements required for the project. Creation of the NPCU, LIUs and their coordination arrangements are yet to be set up within the MoIWR apparatus. Therefore the project inherent risks are estimated as substantial.

5. **Reason for partial use of country systems:** Similarly to an OPEC-financed project currently being implemented by MoIWR, the Community Watershed Management component will in part use country systems by complying with the Government Financial and Accounting Regulations Act, 1995 and other subsequent regulations and procedures where applicable. Relevant financial staff will also be selected from MoIWR to handle financial responsibilities both at the NPCU and at LIUs.

6. **Corruption:** Although the evidence is not documented, perceptions of corruption risks at country level are very high. For most of the indicators used for this category, Sudan has low scores in published surveys. For Voice and Accountability and Control of Corruption, published by WBI, for example, Sudan is in the lowest five percent in the sample. Transparency International ranks Sudan 144<sup>th</sup> in the list of sampled countries with a Corruption Perception Index of 2.1. In the “Reporters Without Borders” index for freedom of the press, Sudan is ranked internationally at 132<sup>nd</sup>. Overall, transparency and accountability need to be enhanced in most public operations. Consequently the standalone project structure and specific fiduciary procedures should be designed to mitigate these risks.

7. **Weaknesses:** some delays have been experienced in releasing counterpart funding for other MTF projects. The Sudanese government’s commitment needs to be confirmed effectively by releasing the counterpart funding in a timely manner according to a written disbursement schedule. The lack of familiarity of MoIWR staff with World Bank procedures is also a major weakness which would need to be addressed by appointing highly committed and qualified staff who would accept attendance at adequate orientation training sessions before operations commence.

8. **Strengths:** MoIWR has sound institutional and administrative capacity, though procedures are manual, with good donor funded project implementation records. A visit to the ongoing OPEC-financed project within the ministry at Madani concluded that strong experience and acceptable financial management capacities are in place that could be replicated or deployed for the proposed project. Furthermore, ENTRO also has sound administrative capacity and strong experience in managing World Bank projects. This will help to implement its components and also provide institutional support to the Sudanese NPCU when needed.

### **Control risk analysis**

9. **Staffing:** A Project Coordinator (PC) would be selected with overall management and coordination responsibility, such as planning, monitoring and evaluation (PME), and preparation of quarterly reports. The finance functions will be handled by the Finances Unit of the NPCU under the supervision of the Financial Manager of MoIWR. The key personnel of the Finances Unit will be at least a Financial Management Specialist and an Accountant for the

NPCU. An accountant will be appointed in each LIU to handle financial functions, such as bookkeeping, financial transactions, and asset management of the project. They will be selected competitively within the ministry staff and assigned to the project. They will report to the Financial Manager who will coordinate with the Project Coordinator according to MoIWR internal procedures. The financial staff will be trained in World Bank financial management and disbursement operations to achieve effectiveness.

10. **Budgeting:** The overall budget allocation for this project is estimated at US\$35.4M. The financing plan calls for US\$13.5M from GONU, 0.2M from the Government of Egypt, US\$13M from Finland, and US\$8.7M from GEF. A detailed cost table has been finalized and will serve as basis for an annual budget consistent with annual work programs during project implementation. During the project implementation, annual budgets will be monitored closely by the Project Coordinator and the Financial Manager to ensure that the resources are used within the agreed upon allocations and for the intended purposes. The different steps of budget management, preparation, revision, adoption, execution, and monitoring will comply with MoIWR procedures for the Sudan component.

11. ENTRO will apply its internal budgeting procedures to execute its components. Budget execution analysis will explain any exception and overrun in the quarterly Interim Financial Reports (IFR) to be submitted by each implementing entity. ENTRO agrees to enhance its financial management system by strengthening the use of budget monitoring as a management tool.

12. **Accounting:** MoIWR is using manual, cash basis accounting systems for all its operations. Separate manual accounting books will be set up to record the Sudan component transactions under the supervision of the Ministry's financial manager. At the beginning, this manual cash basis accounting system will be used, but it could be converted into a computerized accrual accounting system if the project transactions increase considerably. NPCU Finance Unit will have overall responsibility for the accounting system. The project books of accounts will include a cash book, ledgers, journal vouchers, a fixed asset register and a contracts register. The accounting policies and the format of these books of accounts and accounting codes will comply with the Sudanese Financial Act, 1995 on the "Use of Government Financial and Accounting Regulations".

13. ENTRO implemented-activities will be recorded according to its computerized accounting systems "Microsoft dynamics Solomon accounting software" by setting separate ledger books so as to report the project activities and maintain an acceptable audit trail. To strengthen its accounting system, ENTRO is planning to convert its current cash based accounting system to a modified cash based accounting system. Under the standardization and harmonization initiative of the NBI Strengthening Project, ENTRO will also update its current manual of procedures which will take into account any specifics of the proposed project.

14. **Internal Controls and Internal Auditing:** MoIWR internal controls and procedures will apply to the project with a few adjustments to take into account the NPCU and LIU specifics. These internal controls comprise all systems of control, financial or otherwise, established by the MoIWR Finances Directorate under the Sudanese Financial Act, 1995 on the "Use of

Government Financial and Accounting Regulations” in order to (a) carry out the project activities in an orderly and efficient manner, (b) ensure adherence to policies and procedures, and (c) safeguard the assets of the project and secure as far as possible the completeness and accuracy of the financial and other records. The Project Coordinator, Financial Manager, and Internal Auditor will ensure that internal controls work effectively to help the project achieve its development objectives by giving due attention to the following (i) segregation of duties, (ii) physical control of assets, (iii) authorization and approval, (iv) clear channels of command, (vi) arithmetic and accounting accuracy, (vii) integrity and performance of staff at all levels, and (viii) supervision. The project Operations Manual will summarize the key financial procedures.

15. An Internal Audit Unit (IAU) seconded from the MoFNE is in place at MoIWR to ensure that the procedures and regulations are complied with effectively according to Sudanese auditing law. This audit unit is headed by an internal auditor based in Madani. As the Sudan component will be using MoIWR procedures fully, all financial transactions and will be pre-screened and cleared by the Internal Auditor. Any exception will be duly reported to the Project Coordinator and remedy actions taken immediately. The internal audit report shall also be communicated to the World Bank Implementation support missions.

16. ENTRO already has in place adequate internal controls and procedures that will be applied to the component under its implementation to ensure that the project resources are used only for the intended purposes. The NBI’s internal auditor reviews ENTRO’s activities at least once a year and will include the components under this project in its review program.

17. **Financial Reporting:** NPCU and ENTRO finance divisions will record and prepare Interim Financial Reports (IFRs) on project transactions to be submitted to the World Bank not later than 45 days after the end of each quarter. At a minimum, the financial reports must include the following tables with appropriate comments:

- (i) Sources and Uses of Funds
- (ii) Uses of Funds by Project Activity/Component
- (iii) Designated special account (s) activity statement

18. A format for this IFR is already available as an Excel spreadsheet and will be finalized and agreed for adoption during negotiations.

19. **Auditing:** The movements of the Designated Accounts and the Project Accounts should be reflected in the project financial statements separately by NPCU and ENTRO. These financial statements and project accounts will be audited according to International Standards on Auditing by independent auditors acceptable to IDA. Project annual audit reports comprising the financial statements, a single audit opinion, and a management letter should be submitted to IDA not later than six months after the end of each recipient’s fiscal year. The National Auditing Chamber of Sudan performs the annual audit of MoIWR. Its performance on the audit of Sudan MDTF projects is satisfactory and will be extended to the proposed project. The terms of reference and subsequent audit arrangements will be agreed upon not later than six months after effective project opening date.

20. ENTRO has submitted to the Bank the audit reports for the year ended December 31, 2007 within the deadline and the opinion provided by the auditors is unqualified. The external auditors may be required to include the audit of the component in their TOR and contract. The audit arrangements will agree on the modalities.

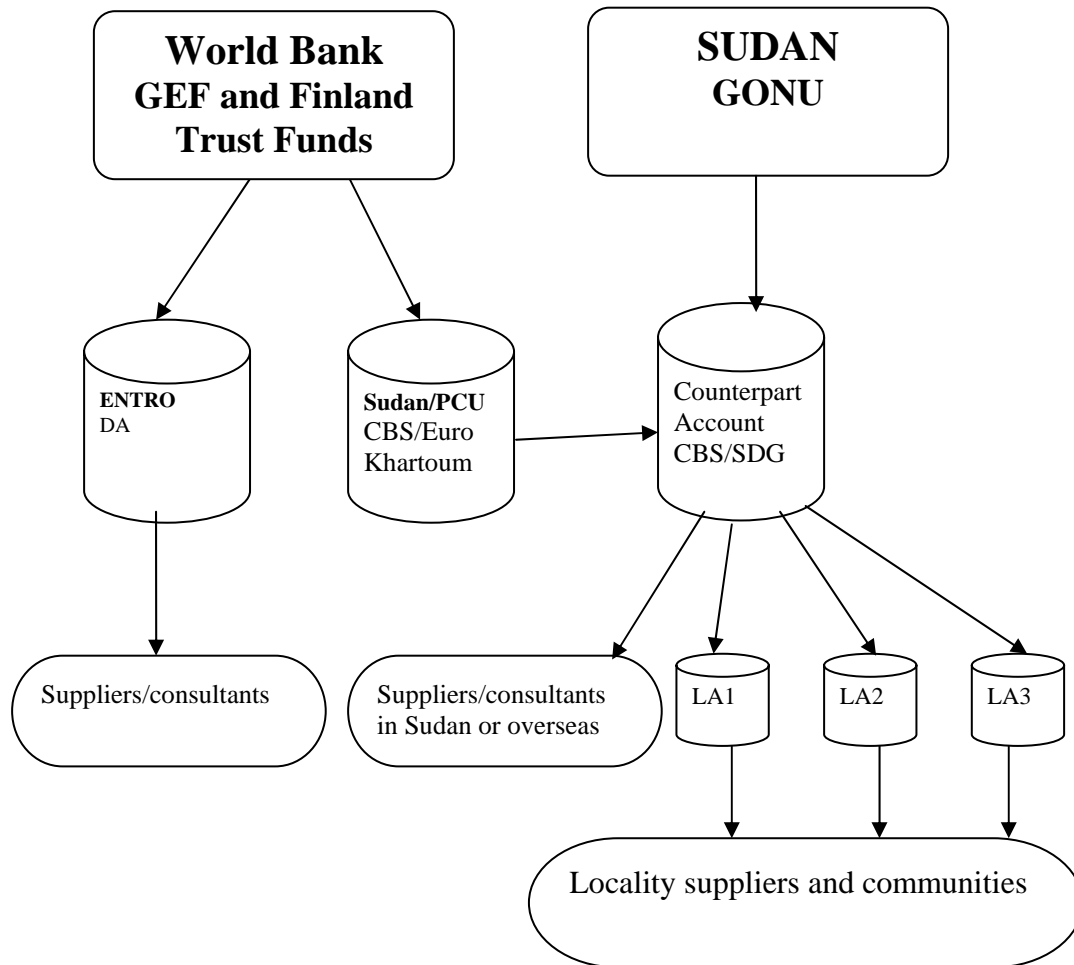
### **Funds Flows and Disbursement Arrangements (Sudan and the Eastern Nile Technical Regional Office)**

21. **Flow of funds:** A project account in Sudanese Pounds (SDG) will be opened in the Central Bank of Sudan directly managed by MoIWR/NPCU under the responsibility of the Project Coordinator and the financial manager. Two segregated Designated Accounts (DA) in EURO (EUR 800,000 for GEF/IDA and EUR 700,000 under the Finnish contribution) will be opened at the Central Bank of Sudan (CBS) to receive World Bank advances to be released by GEF and Finland through a Trust Fund arrangement to be set up subject to Finland agreement. Expenditure reporting for expenditures financed via the DA will be on the basis of Statements of Expenditures for contracts the limits for which will be indicated in the disbursement letter and records (supporting documentation) for other expenditures. Similarly ENTRO will also open a Designated Account in a commercial bank in Addis Ababa not to exceed USD 500,000 to receive the initial advance deposit from Donor funding and then submit regular Statements of Expenditures reporting on expenditures and withdrawal applications for subsequent advances (See Figure 1). Limits for use of SOEs for ENTRO will be indicated in the disbursement letter.

22. **Locality accounts:** For the Sudan component, Local Account (LAs) will be opened in a local bank acceptable to IDA and managed by each LIU locality office to facilitate payments to the local suppliers and communities. Adherence to procurement rules and payment of services and goods will be the responsibility of MoIWR/NPCU and its locality offices.

23. **Sudan Counterpart contributions:** GONU will make necessary arrangements to ensure the timely mobilization of the counterpart contributions required for project implementation. A written confirmation of the allocation budgeted for the 2009 budget and the disbursement schedule shall be submitted to the World Bank by effective project opening date.

**Figure 3 - Illustrative Flow Chart of Sudan Counterpart Contributions**



24. **Disbursement Methods:** Given the high risk environment of the Sudan component and the lack of familiarity with the Bank fiduciary procedures, the IFR-based disbursement may not be applicable by default. Expenditure reporting will be based on Statements of Expenditures (SoE) at project outset. Therefore an initial deposit not to exceed USD 500,000 will be advanced after effectiveness and expenditure reporting through SOEs will be monthly, accompanied by a bank reconciliation statement with a bank statement for the DA and requests for fresh advances. Disbursements will be made through advances, reimbursements, direct payments and Special Commitments. The minimum value for Direct Payment and Special Commitment will be USD100,000. For the sake of simplification the same principle will apply to ENTRO as well. Specific limits for use of SOEs will be detailed in the disbursement letter. Once MoIWR/NPCU demonstrates ability to submit reliable quarterly IFRs, the project may shift to the IFR- based method in the second year if its FM rating is satisfactory. In order for the project to move from reporting expenditures on SoEs to reporting expenditures based on IFRs where six monthly forecasts of expenditure are paid

quarterly hence ensuring the project has adequate funding at all times, MoIWR/NPCU will during implementation have to meet the following requirements: (a) sustain satisfactory financial management rating during the project's supervision, (b) submit Interim Financial Reports consistent with the agreed form and content within 45 days of the end of each quarterly reporting period, and (c) submit all expected Audit Reports by the due date.

**25. Reporting on Use of Grant Proceeds:**

(i) The supporting documentation for reporting eligible expenditures paid from the designated account should be a summary report of the Statements of Expenditure (SOEs) and records evidencing eligible expenditures for payments against contracts valued above USD100,000 for work, USD50,000 for consulting firms and USD30,000 for individual consultants. The supporting documentation for requests for direct payment should be records evidencing eligible expenditures such as copies of receipts and supplier's invoices.

(ii) MoIWR/NPCU and ENTRO will submit bank statements and a reconciliation of the designated account and the project account together with the withdrawal application on a monthly basis. The supporting documents for SOEs will be retained in each implementing entity and will be made available for review by the joint supervision missions and external auditors.

(iii) The standard format of quarterly IFR will be agreed upon during negotiations; a sample will be attached to the disbursement letter.

**26. Conclusion:** A summary of the above FM risk analysis and mitigating measures is tabulated in the attached appendices. At this point in time, the overall financial management (FM) risk is considered substantial on the basis of: (i) high likelihood of occurrence of the identified risks, and their adverse impact on project implementation and (ii) possible failure to implement the agreed upon action plan in a timely manner. The residual FM risk could, however, be moderate provided the mitigating measures and above FM arrangements agreed upon are implemented satisfactorily.

27. Before the effective project opening date, (i) a financial management specialist and LIU locality finance officer should be appointed and the project books and ledgers set up in NPCU and LIU respectively, and (ii) written confirmation of counterpart funds budgeted for 2009 with the disbursement schedule should be provided by GONU.

28. On the basis of the current overall risk, two supervision missions will be conducted during the first fiscal year after the effective project opening date.

**Table 1- Action Plan for Supervision Missions**

<b>Key Actions</b>	<b>Responsible body</b>	<b>Completion</b>
1. Appoint dedicated project key financial staff at NPCU and LIU locality finance officer and then set up the project books and ledgers.	MoIWR/NPCU	Before effective project opening date
2. Provide written confirmation of counterpart funds budgeted for 2009 with the disbursement schedule.	GONU	Before effective project opening date
3. Open bank accounts (Khartoum/CBS, LIUs LA and ENTRO DA in Addis) and communicate to WB the DA numbers and signatories.	MoIWR/NPCU and ENTRO	After grant signing and before disbursement

29. **Supervision plan:** This is a decentralized project that will be implemented from Khartoum and in 3 localities under the supervision of the Ministry of Irrigation and Water Resources of Sudan and by ENTRO from Addis Ababa in Ethiopia. In accordance with the risk based approach, the Bank’s supervision will be as intensive as possible to ensure that the funds are used for the intended purposes and also to provide timely support when need be. During the first year, two supervision missions will be carried out, then shifted to one annual supervision when appropriate, or increase to three missions per year if FM risks become high. These supervision efforts will comprise IFR reviews, on site reviews and will be complemented by continuous assistance to be provided by both the Bank FM Teams based in Khartoum and Addis.

**Table 2 - Risk Assessment and Mitigation**

30. The risks detailed below are estimated in residual terms on the basis of the likelihood of their occurrence, impact on project implementation and failure to implement the agreed upon action plan.

<b>Risk</b>	<b>Risk rating</b>	<b>Risk Mitigating Measures Incorporated into Project Design</b>	<b>Effectiveness Conditions (Y/N)</b>	<b>Remarks</b>
<b>Inherent risk</b>	<b>S</b>			
<u>Country level</u> Sudan is deemed high risk on the basis of its CPIA records.	H	None	N	The ongoing CIFA will set the framework to address the country PFM issues.
<u>Entity level</u> MoIWR and ENTRO capacity to implement their respective project activities is doubtful.	M	None	N	MoIWR and ENTRO have sound institutional and administrative capacity with good donor funded project implementation records.
<u>Project level</u> MoIWR/NPCU lacks experience in managing WB projects.	S	MoIWR/PCU staffs will be trained on WB financial management and disbursement policies and procedures. ENTRO will also provide institutional support and share its FM experience in managing WB-funded projects.	N	ENTRO staff will also attend the orientation training during the project launch.
<b>Control Risk</b>	<b>S</b>			
<u>Budgeting</u> Use of project funds for unallocated activities is a risk.	S	(i) A detailed budget is to be adopted and approved by WB every FY in line with the cost table. (ii) Close monitoring of budget execution through review of quarterly IFR will be carried out.	N	
<u>Accounting</u>	S	(i) MoIWR/NPCU	Y	ENTRO will set up separate ledgers

<b>Risk</b>	<b>Risk rating</b>	<b>Risk Mitigating Measures Incorporated into Project Design</b>	<b>Effectiveness Conditions (Y/N)</b>	<b>Remarks</b>
MoIWR/NPCU uses manual accounting systems. A possible risk exists of mistakes and confusion of project transactions with GONU records resulting in unreliable audit trail.		finances division will appoint financial staff for the project and set up separate manual accounting books to be used at the beginning. (ii) A computerized accounting system would be set up when the volume of financial transactions increases.		under its computerized accounting “Microsoft dynamics Solomon accounting software” system to record the project’s transactions with a clear audit trail.
<u>Internal Control</u> Some weaknesses in MoIWR internal controls may affect the project implementation.	M	(i) MoIWR internal audit unit will review project operations and report any exceptions. (ii) A Project Operations manual will describe the financial procedures explained to the staff during the project launch.	N	
<u>Funds Flow</u> Misuse of project funds or diversion into MoIWR operations, and delay in releasing GONU contributions are risks.	M	(i) Designated accounts, and counterpart and locality accounts, shall be opened and managed by NPCU and ENTRO separately from each entity’s own transactions (ii) GONU will provide written confirmation of its annual disbursement schedules.	N	Written confirmation of disbursement schedule will be sought from GONU before the project implementation commences.
<u>Financial Reporting</u> Delay in	S	A simplified IFR format is already available as an Excel	N	ENTRO will generate its IFR from its computerized accounting system; hence reduce the risk of errors and

Risk	Risk rating	Risk Mitigating Measures Incorporated into Project Design	Effectiveness Conditions (Y/N)	Remarks
submitting acceptable IFRs and annual financial statements is a risk.		spreadsheet and will be agreed upon during negotiations. Some delays and errors may occur in submitting an acceptable 1 <sup>st</sup> IFR, and so orientation training will be provided especially for the Sudan component.		delay.
<u>Auditing</u> Delay in submitting acceptable project audited financial statements and poor audit performance are risks.	S	(i) Audit arrangements will be agreed within 6 months after effective project opening date. (ii) Support has been provided to Sudan NAC to improve its performance as confirmed by the quality of its delivery of June 30, 2008. (iii) Close monitoring of the audit arrangements will be done during and as part of continuous supervision effort by the FM team.	N	ENTRO has submitted on time its audit reports for ongoing WB-funded projects; its external auditors may be required to include the audit of the component in their TOR and contract. The audit arrangements will agree on the modalities.
<u>Corruption</u> Fraud and corruption may affect the project resources.	S	The above fiduciary arrangements including internal controls and strong audit arrangements added to MoIWR/NPCU and ENTRO managerial responsibility will protect project resources from fraud and corruption as	N	Risks of corruption will be reasonably tackled from a technical perspective through the fiduciary arrangements but may not be effective in case of collusion or political corruption.

<b>Risk</b>	<b>Risk rating</b>	<b>Risk Mitigating Measures Incorporated into Project Design</b>	<b>Effectiveness Conditions (Y/N)</b>	<b>Remarks</b>
		much as it is technically possible. Audit TOR will stress IAS 240 relating to the obligations to report any frauds and corruption.		
<b>Overall risks</b>	<b>S</b>	n/a		The overall financial management risk is considered <b>SUBSTANTIAL</b> on the basis of (i) high likelihood of occurrence of the identified risks and their adverse impact on project implementation, and (ii) failure to implement the agreed upon action plan in a timely manner.

H-High, S-Substantial, M-Moderate, L-Low

### 31. **Egypt: Financial Management and Disbursement Arrangements**

The Ministry of Water Resources and Irrigation (MWRI, Egypt): Under the proposed project, the MWRI would be responsible for managing \$2.7 million of GEF funds. The Nile Water Sector (NWS) of MWRI would be responsible for financial management under the project.

A financial management assessment of NWS was conducted in November 2008 and its financial management and it was found that the accounting department of the NWS is comprised of a finance director, deputy finance director, procurement officer and senior accountant. According to the assessment risk was rated as “Substantial” because of the following reasons: (i) no experience in World Bank financial management policies and procedures. However Nile Water Sector (NWS) has similar experience in managing donors funds e.g. USAID; (ii) use of manual accounting system, which augments the possibility of human error; and (iii) current financial management reports are not detailed to allow for adequate monitoring. In order to alleviate the risk, the following mitigating measures were agreed with NWS: (a) Assigning a qualified accountant to handle the project’s activities. In this regard and as per the subsequent meeting with NWS management in January 2009, a senior accountant is assigned to handle solely the project’s financial transactions and reporting; (b) use of a basic accounting software package to record and report on transactions; (c) use of an external auditor (see Table 1 below); and (d) Relatively simple procedures for the flow of funds would be established. The NWS will open and maintain a project bank account (Designated Account) in US Dollars in a commercial bank in Cairo. The project will use transaction based disbursements and direct payments, as needed. Following the initial deposit,

the account would be subsequently replenished using withdrawal applications that the NWS would submit, together with supporting documentation including bank statements and DA reconciliation statements (See Figure 1 below).

**Accounting:** NWS will continue to use cash basis of accounting to record the grant's transactions. Currently manual accounting books and records are used by NWS. A computerized accounting system will be purchased and installed to account for and report on the grants funds. NWS assigned senior accountant will have overall responsibility for the accounting system.

**Flow of funds and Reporting on Eligible Expenditures:** To ensure that funds are readily available for project implementation, the NWS would open, maintain and operate a Designated Account (DA) not to exceed USD 500,000 at a commercial Bank in Cairo. Deposits into, and payments from the DA, will be made in accordance with the provisions stated in the grant agreement. Disbursement under this grant will be made using direct payment, advances, reimbursement and requests for the issuance of special commitments. Withdrawal applications and expenditure reporting of the DA will be prepared and sent by the NWS signed by authorized signatories. Each withdrawal application will be signed in accordance with the borrower's instructions to us regarding their authorized representatives. The name and corresponding specimen of signature of authorized signatories will be submitted to the Bank. Expenditure reporting will be through records or use of SOEs as outlined in the disbursement letter.

**Internal Controls and filing:** Filing of the grant's documents will be handled separately. The assigned senior accountant will be responsible for ensuring that original supporting documents of the grant's expenditures are being handled in an organized and traceable manner. After effectiveness of the grant, the assigned accountant will prepare FM manual summarizing the authorization and control cycles of the grant and submit it to the Bank for review.

**Reporting:** The NWS will be responsible for issuing semiannual Interim Financial Reports and annual Financial Statements (FS):

- (i) Semiannual un-audited IFRs. The format and content of the IFR, which will be produced 45 days from each semester closing date, were discussed as part of the project appraisal to include the receipts and expenditures of the Grant funds,
- (ii) Annually audited FS. Audit report, submitted to the Bank within 6 months after the closing date of the fiscal year, would have to include: (i) a statement of sources and uses of funds (receipts and expenditures of the grant funds); (ii) a SA reconciliation statement; and (iv) a statement of withdrawals made on the basis of SOEs.
- (iii) Audit. Annual audits for the project will be conducted by independent private auditors. The cost of the audit will be financed from the proceeds of the grant. The audit would be performed on the grant's sources and uses of funds. The audit report, accompanied by a management letter, will cover the project's financial statements,

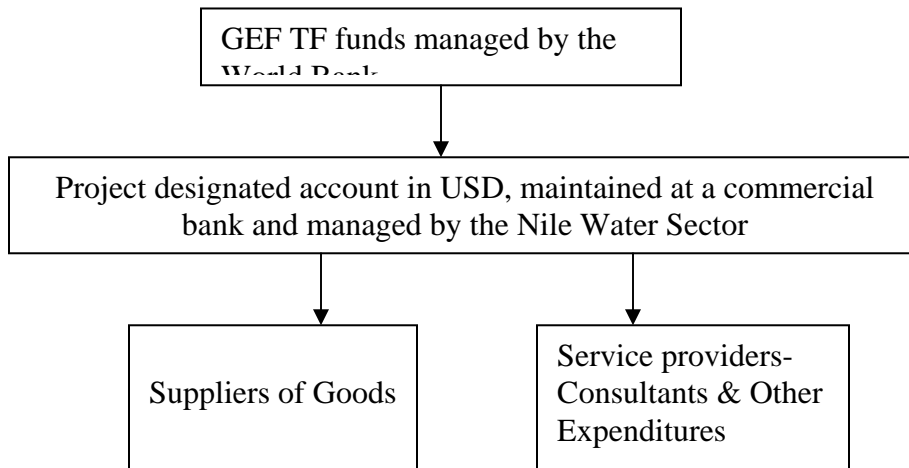
reconciliation and use of the DA, use of direct payments, and withdrawal based on SOEs. The report should be submitted by the NWS to the Bank no later than six months following the closing of the fiscal year subject of the audit. The external audit report should encompass all activities under the grant agreement and should be in accordance and conducted according to International Standards on Auditing.

**Corruption:** Fraud and corruption may affect the project resources. The above fiduciary arrangements including ring-fencing, reporting and audit arrangements will reasonably tackle the risk of corruption from a technical perspective through the fiduciary arrangements but may not be effective in case of collusion.

**Table 1 Financial Management: Agreed Action Plan**

<b>Key Actions</b>	<b>Responsible body</b>	<b>Completion</b>
Appoint a dedicated qualified project accountant at NWS.	MWRI/NWS	Before effectiveness - Done
Launch the procurement process for purchasing an off the shelf accounting software capable of generating acceptable IFRs.	MWRI/NWS	Before effectiveness
Launch hiring process of a private external auditor with TORs acceptable to the bank	MWRI/NWS	After effectiveness
Open bank account in USD (Cairo) and communicate to WB the DA number and authorized signatories.	MWRI/NWS	After grant signing.

Figure 1: Flow of Funds for the Lake Nasser/Nubia Sub-component



32. **Supervision plan:** In accordance with the risk based approach, the Bank’s supervision will be as intensive as possible to ensure that the funds are used for the intended purposes and also to provide timely support when need be. During the first year, two supervision missions will be carried out, then shifted to one annual supervision when appropriate, or increase to three missions per year if FM risks become high. These supervision efforts will comprise IFR reviews, on site reviews and will be complemented by continuous assistance to be provided by both the Bank FM Teams based in Khartoum and Addis Ababa.

## Annex 8: Procurement Arrangements

### SUDAN: Community Watershed Management Component (US\$ 27.7 million)

#### A. General

1. Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004, revised August 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised August 2006, and the provisions stipulated in the Legal Agreement. The general description of various items under different expenditure category is described below. For each contract to be financed by the Grant, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Beneficiary and IDA project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

2. National Competitive Bidding (NCB) would be carried out in accordance with the country's procurement system acceptable by IDA and provided that key principles such as economy, transparency, efficiency and fair competition in line with IDA's Guidelines are respected. Since the Government is preparing Standard Bidding Documents (SBD) for procurement of works and goods, these documents could be used if acceptable by IDA. Otherwise, IDA's SBD will be used with the necessary adaptation.

In particular, the following provisions shall apply to NCB and be included in the Grant Agreement:

- a) Goods estimated to cost less than US\$500,000 per contract and works estimated to cost less than US\$5,000,000 per contract may be procured under contracts awarded on the basis of national competitive bidding (NCB) in accordance with procedures acceptable to IDA which shall *inter alia* ensure the following:

#### Participation in bidding:

- b) Government-owned enterprises in Sudan shall be eligible to participate in bidding only if they can establish that they are legally and financially autonomous, operate under commercial law, and are not a dependent agency of the Government of Sudan.
- c) Foreign bidders shall be eligible to participate under the same conditions as local bidders. In particular, no preference over foreign bidders shall be granted to local bidders in bid evaluation.

#### Advertising; time for bid preparation

- d) Invitations to bid shall be advertised on at least two (2) consecutive days in a local newspaper of wide circulation, and prospective bidders shall be allowed a minimum of thirty (30) days between the date on which the notification appears for the first time

and the deadline for bid submission. With the specific approval of IDA, this minimum period of 30 days may be reduced to a minimum period of 10 days in the case of emergency operations.

Standard bidding documents

- e) Until standard bidding documents acceptable to IDA have been introduced by the GONU, the standard bidding documents of IDA shall be used.

Qualification criteria and evaluation criteria

- f) Qualification criteria shall be clearly specified in the bidding documents, and *all* criteria so specified, and *only* criteria so specified, shall be used to determine whether a bidder is qualified. Bids of bidders not meeting such criteria shall be rejected as non-qualified. The fact that a bidder meets or surpasses the specified qualification criteria shall not be taken into account in the evaluation of such bidder's bid.
- g) Evaluation criteria shall be clearly specified in the bidding documents, and all evaluation criteria other than price shall be quantified in monetary terms. All evaluation criteria so specified, and *only* criteria so specified, shall be used in bid evaluation. Merit points shall not be used in bid evaluation.

Bid submission

- h) Bids shall be submitted in sealed envelopes and shall be accepted whether mailed or hand-carried.

Bid opening

- i) Bids shall be opened in the presence of bidders who wish to attend, and immediately after the deadline for bid submission. Said deadline, and the place of bid opening, shall be announced in the invitation to bid. The name of each bidder, and the amount of his bid, shall be read aloud and recorded when opened in the minutes of bid opening. The minutes of bid opening shall be signed by the members of the bid opening committee immediately after bid opening.
- j) Bids received after the deadline for bid submission shall be returned to the bidders unopened.

Bid evaluation and award of contracts

- k) A bid containing material deviations from or reservations to the terms, conditions and specifications of the bidding documents shall be rejected as not substantially responsive. A bidder shall not be permitted to withdraw material deviations or reservations once bids have been opened.
- l) The bid evaluation shall be carried out in strict adherence to the criteria specified in the bidding documents, and the contract shall be awarded to the qualified bidder offering the lowest evaluated and substantially responsive bid.
- m) A bidder shall not be required, as a condition for award, to undertake obligations not

specified in the bidding documents or otherwise to modify his bid as originally submitted.

n) There shall be no post-bidding negotiations with the lowest or any other bidder.

3. **Procurement of Works:** Works procured under this project would include renovation of offices for use by the Locality Implementation Units (LIUs) and construction of community-based and small-scale water harvesting structures such as farm ponds, water storage tanks, and small-scale irrigation. The LIUs would centrally plan the procurement for the participating villages. There would be direct involvement of the beneficiary communities with labor intensive civil works. Procurement would mostly be for the supply of tools and construction materials. As needed, the LIUs would procure labor contracts through the Community Participation in Procurement method described in Section 3.17 of the Bank's Procurement Guidelines. The LIUs would provide supervision services for the works.

4. The details of the procedures to be followed in contracting the labor, as well as related templates for the labor contracts and payments will be included in the Project Implementation Manual (PIM). The PIM will be prepared and submitted to the Bank for approval before any of the above-mentioned labor contracts can be procured. Larger civil works contracts will be procured centrally by the Project Coordination Unit (PCU) in the Ministry of Irrigation and Water Resources using National Competitive Bidding procedures as described above.

5. **Procurement of Goods:** Goods procured under this project would include: (i) project equipment such as vehicles, motorcycles, and computers; (ii) borehole equipment; and (iii) hand tools, seeds and polythene bags. The goods listed in (i) and (ii) would be procured by the Ministry of Irrigation and Water Resources those in (iii) would be procured centrally by the LIUs on the behalf of the participating villages.

6. To the extent possible, the required goods will be consolidated into bid packages estimated to cost \$500,000 equivalent or more to be procured through International Competitive Bidding (ICB) procedures. All ICB procurements will be done using the Bank's SBD. Goods and Equipment contracts estimated to cost less than US\$500,000 per contract may be procured using NCB and national SBD agreed with or satisfactory to the Bank. For standard off-the-shelf items, and small requirements at the Locality level costing less than \$30,000 equivalent per contract, the Shopping method may be used in accordance with paragraph 3.5 of the Bank's Procurement Guidelines. Direct Contracting for goods and equipment may be used in exceptional cases, under circumstances consistent with paragraphs 3.6 and 3.7 of the Guidelines. Goods and equipment such as vehicles and GPS equipment respectively, may also be procured from UN Agencies such as IAPSO in accordance with paragraph 3.9 of the Bank's Procurement Guidelines.

7. **Procurement of non-consulting services:** The non-consulting services to be procured under the project include the production of publications and workshop/training materials. Procurement of non-consulting services will follow procedures similar to those described for the procurement of goods and the Bank's sample bidding document for the procurement of non-consulting services will be used for these procurements.

8. **Selection of Consultants:** The consulting services to be provided by firms will include socioeconomic and environmental surveys, preparation of guidelines, project impact studies, and project financial audits. Consulting services to be provided by individuals would include database management specialists, sediment monitoring specialist, agronomists, livestock specialists, water resources engineers, community organizers, environmental specialists, sociologists, procurement specialists, financial management specialists/accountants, monitoring and evaluation specialists, and project management specialists. Short lists of consultants for services estimated to cost less than \$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

9. **Operating Costs:** The operating costs which would be financed by the project include fuel and vehicle running and maintenance costs, stationery and sundries; advertising and other office running costs. These would be procured using the Government's administrative procedures.

**B. Assessment of the agency's capacity to implement procurement**

10. Procurement activities will be carried out by the Ministry of Irrigation and Water Resources in Sudan. In particular, procurement activities will be the responsibility of a Project Coordination Unit to be established within the Ministry of Irrigation and Water Resources (MoIWR), Sudan, and, to a limited extent, by four Local Implementation Units to be established within local government administrations/units. The Project Implementation Manual will include, in addition to the procurement procedures, the SBDs to be used for each procurement method, as well as model contracts for works and goods procured.

11. An assessment of the capacity of the Implementing Agency to implement procurement actions for the project has been carried out by Antonio J. Cittati on August 20, 2008. The assessment reviewed the organizational structure for implementing the project and the interaction between the project's staff responsible for procurement Officer and the Ministry's relevant central unit for administration and finance.

12. Most of the issues/risks concerning the procurement component for implementation of the project have been identified and include systemic country issues as well as issues at the entity and project level. A Country Integrated Fiduciary Assessment (CIFA) in Sudan is underway and the CPAR has identified the main issues affecting public procurement at the federal and states' level: (i) incomplete and outdated legal, policy and regulatory framework; (ii) weak procedures and practices, often applied in discretionary and discriminating manner; (iii) inadequate human and financial resources; and (iv) inadequate legislation, practices and institutions to ensure integrity and transparency of the procurement process.

13. The Action Plan emerging from the CIFA will address these issues, some of which are already being tackled by the proposed Public Sector Reform, Decentralization and Capacity Building Project (PSCAP), might not bear fruit on time to benefit the present project. Other

major weaknesses identified consist in lack of experience in the procurement of consultants' services, lack of familiarity with procurement planning and monitoring systems and unproven capacity to meet the Bank's procurement reporting requirements. The corrective measures which have been agreed are the recruitment of a Procurement Specialist by the PCU and of additional staff, or consultants, to assist the LIU, depending on the workload. Formal training of all procurement staff will be also carried out by procurement specialists from the Bank Khartoum CO.

14. The overall project risk for procurement is **High**.

### **C. Procurement Plan**

15. The Recipient, at appraisal, developed a Procurement Plan for project implementation which provides the basis for the procurement methods. This plan has been agreed between the Recipient and the Project Team on January 29, 2009 and is available at [provide the office name and location] It will also be available in the Project's database and in the Bank's external website. The Procurement Plan will be updated in agreement with the Project Team annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

### **D. Frequency of Procurement Supervision**

16. In addition to the prior review supervision to be carried out from Bank offices, the capacity assessment of the Implementing Agency has recommended two supervision missions per year to visit the field to carry out post review of procurement actions.

## Sudan

## Draft Procurement Plan

I. General

1. **Project information:** Eastern Nile Watershed Management Project -- Community Watershed Management Sub-component
2. **Bank's approval Date of the procurement Plan Original** : January 29, 2009; Revision :...
3. **Date of General Procurement Notice:** .....
4. **Period covered by this procurement plan:** July 2009-December 2010

## II. Goods and Works and non-consulting services.

1. **Prior Review Threshold:** Procurement Decisions subject to Prior Review by the Bank as stated in Appendix 1 to the Guidelines for Procurement.

	Procurement Method	Prior Review Threshold	Comments
1.	ICB and LIB (Goods)	All	
2.	NCB (Goods)	= or > 500,000 US\$, plus the first three contracts irrespective of value.	
3.	ICB (Works)	All	
4.	NCB (Works)	= or > 5,000,000 US\$, plus the first three contracts irrespective of value.	
5.	ICB (Non-Consultant Services)	All	
	Shopping	First four contracts	

2. **Prequalification.** Not Applicable
3. **Proposed Procedures for CDD Components (as per paragraph. 3.17 of the Guidelines:** [Refer to the relevant CDD project implementation document approved by the Bank]
4. **Reference to (if any) Project Operational/Procurement Manual:** The Project Operational Manual will include detailed procedures and flow charts describing the various steps of each procurement method and model bidding documents for NCB and Shopping..
5. **Any Other Special Procurement Arrangements:** Advance procurement and/or retroactive financing

## 6. Procurement Packages with Methods and Time Schedule

### Procurement Packages with Methods and Time Schedule

1	2	3	4	5	6	7	8	9
Ref. No.	Contract (Description)	Estimated Cost (x 1000\$)	Procurement Method	Agency Responsible (PMU/LIU)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments
<b>Component 1: Natural Resources Management</b>								
1.	Interactive Maps	117.2	ICB/SS	PCU	Yes	Prior	Sept 21, 2009	
2.	GPS	111.7	NCB	PCU	No	Post	Sept. 21, 2009	al
3.	Vehicles: No.7 4WD SW No.6 4WD P/U	(313+200)= 513.0	ICB	PCU	Yes	Prior	Oct. 20, 2009	Components . 1 and 2 combined
4.	Shallow wells for Atbara (25)	230	NCB	PCU	No	Prior	Nov-25-09	
5.	Shallow wells for Dinder (5)	175	NCB	PCU	No	Post	Feb-15-10	
6.	Boreholes for Bau (10)	520	NCB	PCU	Yes	Prior	Jun-15-10	
7.	Seeds for forestry	144	NCB	PCU	No	Prior	June 15-10	
8.	Seedlings for forestry	173	NCB	PCU	No	Post	June-15-10	
9.	Plastic bags	18.7x3 ~ 56	Shopping	LIU	No	Prior	Sept 21, 2009	One bid per locality
10.	Plastic bags	18.7x3 ~ 58	Shopping	LIU	No	Post	March 15, 2010	One bid per locality
11.	Supplies for nursery structures	280	NCB	PCU	No	Post	Sept 21, 2009	
12.	Supplies for nursery structures	288	NCB	PCU	No	Post	Sept 20, 2010	
13.	Nursery & Plantation tools	195	NCB	LIU	No	Post	Sept 21, 2009	One bid per locality
14.	No 10 Computers	22.2	Shopping	PCU	No	Prior	Sep.21, 2009	Jointly with item 15
15.	No 10 Printers	22.2	Shopping	PCU	No	Post	Sep. 21, 2009	
16.	No. 10 Scanners	11.1	Shopping	PCU	No	Post	Sep. 21, 2009	Jointly with item 18

1	2	3	4	5	6	7	8	9
Ref. No.	Contract (Description)	Estimated Cost (x 1000\$)	Procurement Method	Agency Responsible (PMU/LIU)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments
17.	No 10 Fax machines	11.1	Shopping	PCU	No	Post	Sep. 21, 2009	
18.	No. 5 Photocopiers	27.8	Shopping	PCU	No	Post	Sep. 21, 2009	
19.	Air Con. (6)	6.7	Shopping	PCU	No	Post	Sept 21, 2009	
20.	Back-up Generators (2)	9.0	Shopping	LIU	No	Post	Sept 21, 2009	
21.	Main Genset (Bau)	20	Shopping	PCU	No	Post	Oct-12-09	
22.	Financial management software	5.6	Shopping	PCU	No	Post	Nov 21, 2009	
23.	Office desks and chairs	55.8	Shopping	PCU/LIU	No	Prior	Sept 21, 2009	
24.	Stationery	13.4	Shopping	PCU/LIU	No	Post	Sept 21, 2009	\$2,400 per year in the following years
<b>Component 2: Sustainable Agriculture</b>								
25.	No. 30 Motorcycles	170	NCB	PCU	No	Post	October 26, 2009	
26.	Hand tools for demo farms	180	NCB	PCU/LIU	No	Post	October 26, 2009	
27.	Crop seeds for demo farms	56	NCB	PCU/LIU	No	Post	October 26, 2009	
28.	Crop seeds for demo farms	58	NCB	PCU/LIU	No	Post	May-3-09	
29.	Hafirs/micro-dams							Only in 2011
30.	Groundwater dams							Only in 2011
31.	Small Dams	1,035	NCB	PCU	No	Prior	Feb-10-10	
32.	Rain water harvesting structures							From 2011.
<b>Component 3: Project Management</b>								
33.	LIU office refurbishing	29x3 = 87	Shopping	LIU	No	Post	Sept 21, 2009	One contract per locality

1	2	3	4	5	6	7	8	9
<b>Ref. No.</b>	<b>Contract (Description)</b>	<b>Estimated Cost</b> (x 1000\$)	<b>Procurement Method</b>	<b>Agency Responsibility</b> (PMU/LIU)	<b>Domestic Preference</b> (yes/no)	<b>Review by Bank (Prior / Post)</b>	<b>Expected Bid-Opening Date</b>	<b>Comments</b>

Note

: \*Further details on the packages to be developed upon further study.

### III. Selection of Consultants

- 1. Prior Review Threshold:** Selection decisions subject to Prior Review by Bank as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants:

	<b>Selection Method</b>	<b>Prior Review Threshold</b>	<b>Comments</b>
1.	Competitive Methods (Firms)	= or > 200,000 US\$	
2.	Single Source (Firms)	= or > 100,000 US\$	< 100,000 US\$ cleared by TTL
3.	Individual Consultants	None	
4.	Individual Consultants - Single Source	= or > 50,000 US\$	< 50,000 US\$ cleared by TTL

- 2. Short list comprising entirely of national consultants:** Short list of consultants for services, estimated to cost less than \$200,000 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

- 3. Any Other Special Selection Arrangements:** Recruitment and/or designation of procurement specialists before effectiveness so that they can be trained in Bank procedures.

#### 4. Consultancy Assignments with Selection Methods and Time Schedule

1	2	3	4	5	6	7
<b>Ref. No.</b>	<b>Description of Assignment</b>	<b>Estimated Cost</b>	<b>Selection Method</b>	<b>Review by Bank (Prior / Post)</b>	<b>Expected Proposals Submission Date</b>	<b>Comments</b>
<b>Component 1:Natural Resources Management</b>						
1.	Institutional Strengthening (Firm) for Atbara, Bau & Dinder	420,000	QCBS	Prior	Nov. 25, 2009	1 or 2 NGOs preferable; Initial 2 year (Indefinite Delivery Contract)

1	2	3	4	5	6	7
Ref. No.	Description of Assignment	Estimated Cost	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
<b>Component 2: Sustainable Agriculture</b>						
2.	Agronomist					Bilateral Financing by Finland
3.	Livestock specialist					
4.	Water Resources engineer					
5.	Community organizer					
6.	Environmental specialist					
7.	Social scientist					
<b>Component 3: Project Management</b>						
8.	Baseline & Impact Study					Bilateral Financing by Finland
9.	Project Audits	28	LC	Post	Oct. 14, 2009	Over 5 years
10.	Procurement specialist at national level (PCU)	34	IC		April 2, 2009	Retroactive Financing
11.	Procurement specialists at LIU level (3)	67	IC		April 2, 2009	Retroactive Financing
12.	Financial Management Specialists at national level (PCU)	40	IC		May 4, 2009	Retroactive Financing
13.	Financial Management Specialists at local levels (3)	60	IC		October 10, 2009	
14.	M&E Specialist at national level (PCU)	21.2	IC		May 4, 2009	Retroactive Financing
15.	M&E Specialist at local level (3 LIU)	63.6	IC		October 10, 2009	
16.	Safeguard specialist at national level (PCU)	32	IC		August 10, 2009	
17.	Safeguard specialists at local level (3 LIU)	95	IC		October 10, 2009	
18.	Project Coordinator at National level (PCU)	53	IC	No	April 2, 2009	Retroactive Financing
19.	Project Coordinators at LIU level	127	IC		August 10, 2009	

## 5. Implementing Agency Capacity Building Activities with Time Schedule

In this section the agreed Capacity Building Activities (some items could be from CPAR recommendation) are listed with time schedule

No.	Expected outcome / Activity Description	Estimated Cost	Estimated Duration	Start Date	Comments
	Procurement Specialist (PCU) training	6,500\$	2 weeks	2 <sup>nd</sup> quarter 2009	Requires early recruitment and retroactive financing
	Training of two LIU procurement specialists	13,000\$	2 weeks	2 <sup>nd</sup> quarter 2009	Requires early recruitment and retroactive financing
	Training of LIU procurement specialists		3 days	As soon as recruited	In house, by CO procurement specialist plus PCU specialist.

## **EGYPT and Sudan: Lake Nasser/Nubia Sub-component (\$2.9 million)**

### **A. General**

1. The CPAR of 2003 concluded that Egypt's Procurement Law (Law No. 89) and the Executive Statutes provide important concepts for public procurement in Egypt and generally contains sound principles. However the broad nature of its principles and the absence of written guidelines for their application leave considerable room for extensive discretionary power which can result in inconsistent decisions and loss of transparency.

2. In addition, a follow-on sector specific assessment to the CPAR an institutional procurement capacity assessment in the water sector was carried out in 2005 as part of the PER also issued at about the same time in early 2006. The assessment emphasized the importance of developing the National Procurement Guidelines (NPG) to avoid conflicting interpretation of the above mentioned Law 89. The proposed guidelines should explain all steps necessary for the efficient procurement of goods and works, as well as provide guidelines for the selection of consultants (currently non-existent) based on qualitative criteria, as well as guidelines on thresholds.

3. The MWRI would be responsible for carrying out all procurement for the Lake Nasser/Nubia Sub-component and a recent assessment has concluded that the existing institutional mechanisms and procedures of the MWRI are overall satisfactory although there is a change management process underway.

4. The MWRI HQ and its constituent entities as the National Nile Basin Initiative (NBI) at the Nile Water Sector where the Lake Nasser/Nubia sub-component of the ENWMP would be executed using standard bidding documents (in Arabic) for national competitive bidding composed of (1) Bidding Conditions and Instructions to Bidders; (2) General Conditions and (3) Specifications of Works and Technical Conditions.

### **Summary Capacity Assessment of MWRI:**

5. *Organization and staffing* Procurement is the responsibility of the Contracts and Procurement Department that is under the Directorate for Financial and Administrative Sector. The number and skills of the HQ-MWRI procurement staff (10) seems adequate for the task of implementing the requirements of Law 89 in MWRI-HQ. Procurement carried out by the MWRI Headquarters under the annual investment budget is divided between procurement of vehicles, computers and office equipment in bulk and procurement for major national projects.

6. Preparation of studies and supervision of works are normally conducted in house or by the government research institutes. International consultants are rarely contracted and only for very large projects. The Ministry has 12 different institutes that are allowed – by a special by-law- to act as consultants.

7. Training program. The Ministry has its own training facility that provides limited (not more than one day training) training in procurement as part of the general financial management training. The Ministry also uses the General Authority Government Services (GAGS) that has developed a good procurement module. Some positive capacity elements such as the existence of standard bidding documents for works were identified and could serve as the starting point for an improvement plan.

8. Procurement Audits. The Central Audit Organization (CAO) audits their annual expenditures and issues recommendations that must be taken into account in their plan the following year. There are some concerns that comments are very often vague due to a lack of understanding of procurement of the CAO.

9. Prior Review Thresholds for ENWMP. The World Bank will conduct a prior review of the following procurement documentation:

- a) *Goods and Equipment:* All contracts to be procured under ICB above US\$500,000 for goods will be submitted to prior review, while the first NCB and shopping contracts will also be subject to prior review.
- b) *Consultants' Services:* All contracts with firms above US\$200,000 will be subject to Bank prior review.
- c) *Operational expenses:* All individual long term contracts (greater than three months) for project staff will be subject to prior review.
- d) Contracts that would not be the subject of Bank prior review would be subject to ex-post review.

## **B. Procurement Assessment and Plan**

**10. Procurement Plan - Lake Nasser/Nubia Management Sub-Component:** The Procurement Plan includes relevant information on procurement of Goods and consulting services as the timing of each milestone in the procurement process. The first year's Procurement Plan whose draft has already been agreed upon, and will be finalized at negotiations to cover: (i) The Sediment Monitoring comprising of TA, equipment, training, and incremental survey costs; and (ii) The Lake Management Framework also comprising of TA and training to develop principles on the sustainable use of resources in a participatory way. The revised plan for this or any remaining part of the Sub-component will be submitted to Bank supervision teams every six months for review and comments.

**11. Implementation Arrangements:** The Nile Water Sector of MWRI, which would be responsible for the implementation of the Lake Nasser/Nubia Management Sub-Component has a small Procurement Unit under the oversight of the Head of the Technical Advisory Team, with direct reporting capability to the Office of the Minister of MWRI.

12. The Procurement Unit in the NWS will need to closely coordinate with the Implementation Team drawn up from the High Aswan Dam Authority and Nile Research Institute in the MWRI in Egypt and the Water Resources Technical Organ in MoIWR in Sudan for Lake Nasser/Nubia Management.

**13. Procurement Capacity Building:** Procurement function staff in NWS with some additional exposure and intensive training on Bank guidelines for procurement and the SBDs would be the main counterparts on implementation of the procurement arrangements. Suggested approach to rapidly expose these staff to Bank financed procurement “good practice” is to arrange to have one or two staff in the NWS attend the joint ILO/World Bank procurement management training course held over a two week period in Turin/Italy.

14. In view of the capacity assessment findings of MWRI even for a relatively modest investment of US\$2.7 million, the overall procurement risk is considered **High** particularly as the NBI Procurement Unit in the Nile Water Sector has no experience in Bank financed procurement of consultancy services. Therefore, procurement would be every six months, with in-between procurement support to the client from the Bank’s Cairo Office.

## Attachment 1

## EGYPT

## Procurement Plan

## I. Goods

1	2	3	4	5	6	7	8	9
Ref. No.	Contract (Description)	Estimated Cost (M US\$)	Procurement Method	Prequalification (yes/no)	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments
1- Monitoring of sediment deposition equipment - Bathymetric Surveys and sediment measurements								
1-1	1 Sub-bottom profile (multi-beam echosounder)	0.200	ICB		yes	Prior	31-Aug-09	
1-2	2 Water velocity measurements (current-meter)	0.060	Shopping		no	Prior	31-Aug-09	
1-3	1 Sub-bottom Sampling (penetrometer)	0.200	ICB		yes	Prior	25-Feb-10	
2- Monitoring of sand dune encroachment and windblown sand equipment								
2-1	8 Meteorological Stations	0.150	ICB		yes	Prior	31-Aug-09	
2-2	15 Automatic sand traps	0.150	ICB		yes	Post	31-Aug-09	
3- Mathematical modeling								
3-1	Sedimentation models (3 Licenses)	0.100	NCS		no	Prior	31-Jan-10	
3-2	Windblown sand models (2 Licenses)	0.100	NCS		no	Post	31-Jan-10	
4- Scientific trips in the Lake								
4-1	Trip No. 1*	0.233	SOE		no	Post	31-Jan-10	
4-2	Trip No. 2*	0.233	SOE		no	Post	Dec-20-10	
*Further details on the packages to be developed upon further study. NCS: Non Consulting Services								

## II. Consultants

1	2	3	4	5	6	7
Ref. No.	Description of Assignment	Estimated Cost (M US\$)	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
<b>5- Consultant Services &amp; Database</b>						
5-1	Joint Socio Economic Survey	0.070	CQS	Prior	June-10-09	
5-2	Joint Environmental Survey	0.064	CQS	Post	June-10-09	
5-3	Joint Preparation of the Framework	0.100	QCBS	Prior	June-10-09	
5-4	Database management	0.050	IC	Post	Sept-10-09	
5-5	Sediment Knowledge	0.050	IC			Year 3
5-6	Project Accountant	0.030	IC	Post	Sept-10-09	5 year contract
5-7	Assistant to National Project Coordinator	0.036	IC	Post	Sept-10-09	5 year contract
5-8	Audit	0.025	IC	Post	Oct-5-09	5 year contract
<b>6- Specialized Training</b>						
6-1	International Consultancy	0.020	IC	Post	15-March-10	
6-2	Local consultancy (Egypt)	0.015	IC	Post	15-March-10	
6-3	Local consultancy (Sudan)	0.015	IC	Post	15-March-10	
6-4	International Consultancy	0.020	IC	Post	15-March-10	
6-5	Local consultancy (Egypt & Sudan)	0.234	IC	Post	15-March-10	

Note 1: Details for consultancy scope to be developed upon further assessment.

Note 2: Individual Consultants' selection does not require review by PS

## **Regional Capacity Building Sub-Component (ENTRO) (\$1.53 million)**

### **A) General**

Procurement for the proposed project would be carried out in accordance with the World Bank's "Guidelines: Procurement under IBRD Loans and IDA Credits" dated May 2004, revised August 2006; and "Guidelines: Selection and Employment of Consultants by World Bank Borrowers" dated May 2004, revised August 2006, and the provisions stipulated in the Legal Agreement. The general descriptions of various items under different expenditure category are described below. For each contract to be financed by the Grant, the different procurement methods or consultant selection methods, the need for prequalification, estimated costs, prior review requirements, and time frame are agreed between the Recipient and the Bank project team in the Procurement Plan. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

**Procurement of Works:** Works will not be procured under this Sub-Component

**Procurement of Goods:** Goods procured under this project would include only office equipment like computers, printers and similar for a total amount estimated at US\$25,000, to be procured using Shopping procedures.

**Selection of Consultants:** Consulting services required under the Sub-Component will include individual consultants for database management, TA for sediment and water quality monitoring (international) and trainers to design and deliver training programs for Sediment, Water Quality management and Watershed management. Services by firms would be limited to annual financial audits. Short lists of consultants for services estimated to cost less than \$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

**Workshops and Training:** Regional workshops and training, as well as a staff exchange program, will be carried out according to a training plan to be established during project implementation, based on the findings and recommendations of the training consultants mentioned above.

**Operational Costs:** Which would be financed by the project would be procured using the implementing agency's administrative procedures which were reviewed and found acceptable to the Bank.

### **B) Assessment of the agency's capacity to implement procurement**

1. **Implementation Arrangements:** Procurement actions for the implementation of the

Regional Capacity Building Sub-component will be carried out by the Eastern Nile Technical Regional Office (ENTRO) located in Addis Ababa, Ethiopia. An assessment of ENTRO's capacity to manage procurement actions under the project was carried out on December 8-10, 2008 by Antonio J. Cittati, Sr. Procurement Specialist Consultant, AFTPC: the main findings and recommendations of the assessment are summarized in this report.

2. **Legal Status:** ENTRO was established by a decision of the Eastern Nile Council of Ministers (Egypt, Sudan and Ethiopia), held in Cairo, Egypt, on January 10, 2002, with headquarters in Addis Ababa, Ethiopia. The Headquarters Agreement executed between the Government of the Federal Democratic Republic of Ethiopia and ENTRO on February 16, 2002, establishes ENTRO as a Regional Organization that *"shall have the legal personality in the host country to enable it to carry out its duties. It has a right to sue and be sued and to hold, sell or transfer property under its own name."* The Agreement further grants ENTRO and its officials the same privileges and immunities "accorded to Regional Organizations of comparable rank". The legal Counsel of ENTRO confirmed that the status of ENTRO, as defined above, enables it to enter into contracts for the procurement of goods, works and services, including consultants' services. In particular, the Special Conditions of Contract (SCC) included in ENTRO contracts with suppliers, contractors and consultants refer to the law of Ethiopia as the "Applicable Law"; a related implication applicable to resolution of disputes is that the Government of Ethiopia is responsible for enforcing the decision of Arbitrators.

3. ENTRO is currently managing procurement for other three Bank financed project, for a total amount of Grant of about US\$ 17.2 million. Two more projects are under preparation, in addition to this proposed one, and a separate procurement capacity assessment is being finalized by the hub coordinator in the Ethiopia CO.

### **C. Procurement Assessment and Plan**

4. The volume of procurement for which ENTRO would be responsible under the proposed project is modest, consisting mainly in consultants services (two firms and two to four individuals) not exceeding about US\$250,000 per contract (with firms) and about US\$80,000 in total for office equipment and supplies. These procurement actions are well within the type and size generally performed by ENTRO and within the capacity of the Procurement Officer and the Procurement Specialist recently hired to support him.

5. The main risks identified during the assessment refer to the limited Support and Control Systems and the lack of a well organized Record Keeping system; these might be rapidly compounded by an increased workload, in excess of the processing and coordinating capacity of the two existing procurement staff.

6. Procurement Capacity Building: It is anticipated that the additional workload represented by procurement under this sub-component would strain the present capacity of ENTRO procurement staff. To rapidly increase this capacity it is recommended to arrange for the recently recruited procurement specialist to attend a two or three week procurement management training course at the joint ILO/World Bank training center in Turin, Italy.

7. Limited to the workload involved under the proposed project, the overall procurement risk

is rated as **AVERAGE**. Recommended frequency of supervision is every six months, with one additional procurement support mission from the Bank's Khartoum CO.

**Details of the Procurement Arrangement involving international competition.**

**1. Goods and Works and non consulting services.**

(a) List of contract Packages which will be procured following ICB and Direct contracting:

1	2	3	4	5	6	7	8	9
Ref. No.	Contract (Description)	Estimated Cost (1,000\$)	Procurement Method	P-Q	Domestic Preference (yes/no)	Review by Bank (Prior / Post)	Expected Bid-Opening Date	Comments
1	Office Equipment	25	Shopping	No	No	Prior	Aug-15-09	

(b) ICB Contracts estimated to cost above [fill in threshold amount] per contract and all Direct contracting will be subject to prior review by the Bank.

**2. Consulting Services.**

(a) List of Consulting Assignments with short-list of international firms.

1	2	3	4	5	6	7
Ref. No.	Description of Assignment	Estimated Cost (1000\$)	Selection Method	Review by Bank (Prior / Post)	Expected Proposals Submission Date	Comments
1.	Annual Audit	15	LCS	Prior	Nov.-5-09	Five year contract
2	Database Management Specialist	30	IC	Post	Oct.-10-09	
3.	TA Sediment & Water Quality Monitoring	70	IC	Post	Oct 10-09	Four experts
4.	TA Sediment & Water Quality Monitoring	80	IC	Post	Oct 10-10	Four experts
5.	Trainer (Sediments)	90	IC	Post	Aug-15-09	Five year contract
6.	Trainer (Water Management)	90	IC	Post	Aug-15-09	Five year contract
7.	Trainer (Watershed Management)	90	IC	Post	Aug-15-09	Five year contract

(b) Consultancy services estimated to cost above \$200,000 per contract and Single Source selection of consultants (firms) for assignments estimated to cost above \$50,000 will be subject to prior review by the Bank.

(c) **Short lists composed entirely of national consultants:** Short lists of consultants for services estimated to cost less than \$200,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

### 3. Implementing Agency Capacity Building Activities with Time Schedule

No.	Expected outcome / Activity Description	Estimated Cost	Estimated Duration	Start Date	Comments
	Procurement Specialist training	6,500\$	2 weeks	4 <sup>th</sup> quarter 2009	

## Annex 9: Economic and Financial Analysis

### Background

1. The proposed Eastern Nile Watershed Project is aimed at reducing land degradation and improving agricultural productivity. The project, under the sustainable agriculture sub-component, would finance specific interventions to improve the productivity of the existing farming and livestock raising systems, including the following: (a) introduction of more efficient soil moisture and fertility management practices and technologies; (b) upgrading of small-scale irrigation systems; (c) introduction of improved seeds and livestock breeds; and (d) strengthening of community and locality-level agricultural extension system through the existing “farmers schools”.

### Methodology

2. The financial and economic analyses for the proposed project are limited in scope, to the on-farm benefits. They do not capture other benefits associated with improved watershed management that are difficult to monetize because of methodological reasons. These benefits include a variety of ecological services such as improving soil formation and nutrient cycle; water regulation and purification and micro-climate regulation; and religious, recreational, aesthetic, educational, and cultural values.

3. The analyses were carried out, taking into account the different farming systems in the three sub-watershed areas selected for project support. In Lower Atbara, the major crops farmers cultivate are sorghum, beans, and vegetables along the Atbara River. During the flood season (July – October), basin irrigation is used for areas along the riverbank, while after the

recession of floods, small-scale farmers pump groundwater from boreholes to irrigate their crops. Rain-fed agriculture is limited to areas of water harvesting structures because of the arid conditions in the area.

4. In the Bau (or Ingessana) area, smallholder farmers practice rain-fed agriculture and livestock production. The major crops are sorghum, millet, cowpea, onion, and tomato. In the Dinder area, the farmers cultivate sorghum and sesame under rain-fed conditions and seasonal fruits and vegetables during the flooding season.

5. The first step in the analysis was to build models for the major crops and livestock, using secondary information from the proposed project sites, and from the Ministry of Agriculture at the Federal and State levels. Additional information was obtained from the IFAD-financed Butana Integrated Rural Development Project and, which is supporting similar interventions to improve agricultural productivity in other parts of Sudan.

6. The second step was to build farm models for each of the proposed project sites to reflect the different farming systems and agro-ecological conditions. Model 1 would be a package comprising mainly integrated crop and livestock production, small-scale irrigation, and extension services. The package for Model 2 would comprise mainly integrated crop and livestock production in a wadi and/or depression, and extension services.

7. Finally, financial and economic analyses were conducted using the farm models to estimate the financial and economic feasibility of the improved agronomic practices to be supported under the project. The analyses was based on the following assumptions: (a) economic life of the project is 20 years; (b) 2007 prices were used; (c) discount rate of 10% (as declared by the Bank of Sudan); and (d) shadow prices for production inputs, outputs, labor, etc. There was no economic and financial analysis of benefits such as improved environmental services such soil and water quality that are not easily quantifiable and costed.

## **8. Results of the analysis**

- (a) Crop and livestock models (see Table 1 for details): The innovations to be introduced under the project are expected to increase the yields of representative crops by 50-200%.
- (b) Farm models: Two models of improved mixed farming systems are expected to be implemented in the project areas (Table 2). The financial budgets for the farm models indicate that the farming households that adopt improved practices could see financial benefit increases from 200-337% in Lower Atbara, 176-219% in Dinder, and 177-490% in Bau (see Table 3 for details).
- (c) Financial efficiency: This was analyzed in terms of the Net Present Value (NPV), Internal Rate of Return (IRR), and Benefit-Cost Ratio (BCR) and they were found to be positive. The results are: (A) NPV: SDG 10,376-13,489, IRR: 47.4-67.0% and BCR: 1.3 – 1.6 (see Table 4 for details).
- (d) Economic efficiency: The Economic Rate of Return (ERR) from the selected farm models is also positive. The ERR ranged from 23-47%, the NPV is positive, and the BCR is greater than one (see Table 5 for details).

(e) Sensitivity analysis: This analysis was undertaken to test the robustness of the above results and they were found to be so, except when the cost increase by 40% while benefits remain the same, and in case of delay of benefit by two years accompanied by 20% increase in cost. In such a situation, the EIRR would drop to 5-7% (see Table 6 for details).

In conclusion, the above analyses indicate that the proposed project interventions to improve agricultural productivity are financially and economically feasible.

**Table 1: Yields of representative crops (per feddan) and livestock in the existing technology and with new technology**

	Unit	Present Year 1	Future with existing technology Year 20	Future with New technology Year 20	Change %
Sorghum (irrigated)	Kg	426.0	426.0	650.0	53
Sorghum straw	000' bundle	0.8	0.8	3.0	275
Sorghum (Wadi)	Kg	426.0	426.0	650.0	53
Sorghum straw	000' bundle	0.8	0.8	3.0	275
Sorghum (rain-fed)	Kg	300.0	300.0	550.0	83
Sorghum straw	000' bundle	0.7	0.7	3.0	329
Cowpea (grain)	Kg	200.0	200.0	400.0	100
Cowpea fodder	Kg	0.3	0.3	1.5	400
Watermelon	Ton	1.5	1.5	2.1	40
Cucumber	Ton	2.0	2.0	2.8	40
Onion	Ton	2	2	3.4	70
Tomato	Ton	1.5	1.5	2.4	60
Sheep off-take female	Head	2.0	2.0	4.0	44
Sheep off take male	Head	2.0	2.0	6.0	104
Sheep milk	Kg	140.0	140	430	207
Goat off take female	Head	2.0	2.0	5.0	84
Goat off take male	Head	2.0	2.0	7.0	196
Goat Milk	Kg	380.0	380.0	500.0	32

Source: IFAD-BIRD, and ARC

**Table 2: Site-specific Farm Models**

<b>Lower Atbara</b>	<b>Model 1:</b> Improved irrigated farm: 5 feddans for each farmer will be distributed as follows: 2.5 feddans sorghum, 1.3 feddans cowpea, 0.6 feddan watermelon, 0.6 feddan tomato/onion, 15 sheep and 20 goats.
	<b>Model 2:</b> Depression & Wadi cultivation: 10 feddans for each farmer will be distributed as follows: 7 feddans sorghum, 3 feddans cowpea, 10 sheep and 20 goats.
<b>DNP</b>	<b>Model 1 (Rahad Locality):</b> Improved irrigated farm: 5 feddans for each farmer will be distributed as follows: 2.5 feddans sorghum, 1.3 feddans cowpea, 0.6 feddan watermelon, 0.6 feddan tomato/onion, 20 sheep and 20 goats.
	<b>Model 2 (Magano Village):</b> Improved rain-fed: 3 feddans for each farmer will be distributed as follows: 2 feddans sorghum, 0.5 feddan watermelon, 0.5 feddan cucumber/onion, 15 sheep and 20 goats.
<b>Bau Locality</b>	<b>Model 1:</b> Improved irrigated farm: 5 feddans for each farmer will be distributed as follows: 2.5 feddans sorghum, 1.3 feddans cowpea, 0.6 feddan onion, 0.6 feddan tomato, 10 sheep and 20 goats.
	<b>Model 2:</b> Improved rain-fed farming: 10 feddans for each farmer will be distributed as follows: 10 feddans sorghum, 10 sheep and 20 goats.

**Table 3. Aggregated financial budget of the farm models (in SDG)**

	Present	Future with Existing technology	Future with New technology	% change
<b>Lower Atbara Model 1</b>				
Gross value of production	3,023	3,023	5,368	77.5
Sub-total production cost	1,334	1,334	2,953	121.0
Cash flow after financing	1,689	1,689	2,119	
Sub-total change in net worth			2,953	
Farm family benefit after financing	1,689	1,689	5,072	200.2
<b>Lower Atbara Model 2</b>				
Gross value of production	3,945	3,945	6,883	74.5
Sub-total production cost	2,478	2,478	4,100	65.0
Cash flow after financing	1,467	1,467	2,323	
Sub-total change in net worth			4,100	
Farm family benefit after financing	1,467	1,467	6,423	337.8
<b>Dinder Model 1</b>				
Gross value of production	2,881	2,881	5,240	81.8
Sub-total production cost	1,334	1,334	2,953	121.0
Cash flow after financing	1,447	1,547	1,992	
Sub-total change in net worth			2,953	
Farm family benefit after financing	1,547	1,547	4,945	219.6
<b>Dinder Model 2</b>				
Gross value of production	2,159	2,159	3,908	81.0
Sub-total production cost	737	737	2,008	172.4
Cash flow after financing	1,413	1,413	1,699	
Sub-total change in net worth			2,008	
Farm family benefit after financing	1,413	1,413	3,912	176.8
<b>Bau Model 1</b>				
Gross value of production	2,957	2,957	5,113	72.9
Sub-total production cost	1,208	1,208	2,596	114.9
Cash flow after financing	1,749	1,749	2,257	
Sub-total change in net worth			2,596	
Farm family benefit after financing	1,749	1,749	4,853	177.4
<b>Bau Model 2</b>				
Gross value of production	2,697	2,697	4,946	83.3
Sub-total production cost	1,907	1,907	2,663	39.6
Cash flow after financing	790	790	2,016	
Sub-total change in net worth			2,663	
Farm family benefit after financing	790	790	4,679	492.0

**Table 4. Summary of financial efficiency measures for the selected farm models**

	Lower Atbara		DNP		Bau Locality	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Cash flows before financing</b>						
Incremental inflows	36,343	43,513	34,280	26,190	33,923	33,081
Incremental outflows	22,854	30,726	22,006	15,814	20,525	21,516
NPV	13,489	12,786	12,274	10,376	13,379	11,564
IRR (%)	67.0	67.5	63.1	50.7	62.8	47.4
Benefit /cost ratio	1.6	1.4	1.6	1.7	1.6	1.5
<b>Cash flows after financing at 10%</b>						
Incremental inflows	36,343	43,513	34,280	26,190	33,923	33,081
Incremental outflows	25,140	33,799	24,207	17,396	22,578	23,668
NPV	11,203	9,714	10,073	10,837	11,345	9,413
IRR (%)	56.9	52.2	53.2	50.0	53.2	38.6
Benefit /cost ratio	1.44	1.3	1.4	1.6	1.5	1.4

**Table 5. Summary of economic efficiency measures for the selected farm models**

	Lower Atbara		DNP		Bau Locality	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Cash flows before financing</b>						
Incremental inflows	27,171	31,502	26,151	20,582	25,295	24,484
Incremental outflows	15,788	21,672	15,252	11,221	14,317	17,643
NPV	11,382	9,830	10,899	9,361	10,979	6,842
IRR (%)	70.0	68.0	68.0	58.1	66.8	49.4
Benefit /cost ratio	1.7	1.5	1.7	1.8	1.8	1.4
<b>Cash flows after financing at 10%</b>						
Incremental inflows	27,171	31,502	26,151	20,582	25,295	24,484
Incremental outflows	17,367	23,839	16,777	12,343	15,748	19,406
NPV	9,804	7,662	9,373	8,238	9,547	5,078
IRR (%)	47.5	36.2	47.0	41.1	45.9	23.4
Benefit /cost ratio	1.6	1.3	1.6	1.7	1.6	1.3

**Table 6. Sensitivity analysis of the FTWM project in Sudan**

	EIRR (%)
Base line EIRR	43.0
Increase of cost by 10% and benefit constant	31.0
Increase of cost by 20% and benefit constant	22.0
Increase of cost by 40% and benefit constant	5.5
Decrease of benefit by 10% and cost constant	30.1
Decrease of benefit by 20% and cost constant	18.0
Increase of cost by 10% and decrease of benefit by 10%	20.0
Increase of cost by 20% and decrease of benefit by 10%	11.0
Delay of benefit by one year and increase of cost by 10%	18.0
Delay of benefit by one year and increase of cost by 20%	12.3
Delay of benefit by two year and increase of cost by 10%	11.5
Delay of benefit by two year and increase of cost by 20%	7.2

## **Annex 10 - Safeguard Policy Issues**

1. The proposed project would finance interventions to: (a) rehabilitate degraded agricultural landscapes and rangeland in specific micro-watersheds in the Eastern Nile Basin, (b) promote the adoption of sustainable management of land and water resources in the rehabilitated areas, and (c) increase agricultural productivity and household incomes.
2. Project support would consist mainly of capacity building activities, and small-scale and labor intensive investments such as water harvesting structures (including farm ponds, storage tanks, and boreholes) under the Sudan Community Watershed Component. These interventions are expected to have ecological, economic and social benefits for about 80,000 – 100,000 households.
3. The beneficiary groups would comprise settled farmers and nomadic communities representing a variety of ethnic groups. Sudan is made up of several ethnic groups that are recognized under the country's constitution. Even smaller ethnic groups are typically dominant in their distinct geographical areas.
4. The small-scale investments are likely to have minimal or no major negative social impacts because a participatory planning and implementation process at the village level would be established under the project to ensure that project interventions reflect the priorities of the intended beneficiaries, they were culturally appropriate, and that equitable access exists in the distribution of project benefits, especially to women. Moreover, these investments would be sited on government and community-recognized communal lands and established farms.
5. The proposed project interventions are also expected to have minimal or no major adverse environmental impacts. Instead, they are expected, as noted above, to have positive environmental impacts because they would support rehabilitation of degraded cropland and rangelands in specific micro-watersheds in the Eastern Nile basin. Project support would also help to promote wider adoption of sustainable management of land and water resources in the rehabilitated micro-watersheds.
6. It is possible that some of the small-scale investments that communities identify as a priority could potentially have localized negative environmental impacts. Because of this the World Bank's Safeguard Policy on Environmental Assessment (OP/BP 4.01) is triggered. However, environmental assessment for such investments could not be conducted as part of project preparation because they would be identified through the participatory planning and implementation process. For this reason, an Environmental and Social Framework (ESMF) has been prepared.
7. The objectives of the ESMF are: (a) establish clear procedures and methodologies for environmental and social assessment, review, approval and implementation of investments to be financed under the project, (b) specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to project investments, and (c) help to determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.

8. The main features of the ESMF include the following:

(i) Training would be provided at the community level and in the relevant government agencies to raise environmental and social awareness and to clarify the specific environmental and social requirements related to micro-project design and implementation.

(ii) Environmental and social assessment and mitigation is an integral part of the community-led project planning and implementation process as well as the project's monitoring and evaluation system.

(iii) Project funding will not be provided proposed activities that involve resettlement or could potentially have adverse impacts on particular ethnic and/or vulnerable groups.

(iv) The project would not finance any dam with a height of more than 4.5 meters.

9. The other World Bank Safeguard Policy the project triggers is Projects on International Waterways (OP/BP 7.50) which requires that other riparian countries are notified about a proposed project in an international waterway. For this project the main concern was whether the development of water harvesting structures for supplementary irrigation for a total area of 4,250 ha in Sudan (2085 ha each in Atbara and Bau localities and 80 ha in Dinder) could have significant impacts on water flows to downstream riparian countries. Analysis of water abstraction as a percentage of mean annual discharge indicates that it is minimal, that is 0.076% (See below for details).

10. To fulfill the requirements of OP/BP 7.50, notification letters were sent to all the 10 riparian countries by the Nile Basin Initiative Secretariat on September 3, 2008, following procedures established by the countries. By the end of the 60-day notification period, November 2, 2008, no unfavorable response had been received from any of them.

#### Details on the estimation of water requirements

11. Water abstractions have been computed based on a mixture of cereal and horticultural crop development. The approximate water requirement estimated for these areas (even assuming extremely conservatively that there is no current rainfed agriculture in these areas) is indicated in Table 1. The mean annual discharge for the Nile River at Aswan is 84 billion cubic meters and the expected incremental abstraction under the proposed project is estimated at 0.06375 billion cubic meters, which is only 0.076%.

**Table 9: Approximate Water Requirement for Nile Riparian Areas**

Item	Surface Irrigation
Command area (ha)	4,250
Net irrigation water requirement (m <sup>3</sup> /ha/year) with 200% cropping intensity with a mix of cereal and horticulture crop based development	7,500
Gross irrigation abstraction (m <sup>3</sup> /ha/year) (efficiency=60% for surface irrigation)	12,500
Annual total abstraction (billion cubic meter)	0.06375

12. The incremental abstraction is a very insignificant part of the current flow of the river at Aswan and hence will not have adverse effects on any of the riparian countries or the Nile Basin.

13. The project is expected to make a modest contribution to improved water quality. The local erosion control measures to be implemented would help to reduce sedimentation and turbidity in the rivers as well as sedimentation to downstream riparians. These gains could be enhanced if the watershed management interventions implemented under the project are further scaled up in future years.

14. Additional evapotranspiration requirements due to vegetative measures: The relationship between vegetative watershed management interventions (such as afforestation) and river flows is complex in the Nile River. Given the size of the interventions, it is extremely unlikely that there will be any discernable impact of the vegetative measures proposed in this project on downstream flows. Instead, there may actually be some local benefits due to attenuation of flows during floods. This is also supported by the lack of discernable impacts in increasing flows downstream as a result of the deforestation and degradation of catchments upstream in recent decades.

## Annex 11: Project Preparation and Supervision

	Planned	Actual
PCN review	05/24/2007	06/24/2008
Initial PID to PIC	11/19/2008	12/29/2008
Initial ISDS to PIC	11/19/2008	12/29/2008
Appraisal	01/19/2009	
Negotiations	01/26/2009	
Board/RVP approval	03/10/2009	
Planned date of effectiveness	07/10/2009	
Planned date of mid-term review	06/03/2013	
Planned closing date	12/31/2015	

Key institutions responsible for preparation of the project:

- (i) Ministry of Water Resources and Irrigation, Egypt.
- (ii) Ministry of Irrigation and Water Resources, Sudan.
- (iii) Eastern Nile Technical Regional Office

**Table 11. Bank staff and consultants who worked on the project included:**

Name	Title	Unit
Acquay, Herbert	Task Team Leader	AFTEN
Addison, Frederick	Consultant	AFTEN
Baimu, Evarist	Counsel	LEGA
Bulls Sandra	Program Assistant	AFTEN
Cittati, Antonio	Consultant	AFTPC
Coffi, Nestor	Sr. Financial mgt. Specialist	AFTFM
Dwumfour, Edward	Sr. Environmental Specialist	AFTEN
Elfadil, Abdel	Consultant	AFTEN
El Karim, Mohamed	Procurement Specialist	AFTPR
El-Sadani, Hani	Sr. Water Resources Engr	MNSSD
El-Shorbagi, Akram	Sr. Procurement Specialist	OPCFM
Fock, Achim	Sr. Economist	AFTAR
Follea, Salimata	Operations Analyst	AFTEN
Hakim, Roxanne	Sr Anthropologist	AFTCS
Hassan, Hassan	Consultant	AFTWR
Hillers, Astrid	Sr. Environmental Specialist	ENV
Hussein, Mohamed	Rural Development spec.	AFTAR
Jagannathan, E.V.	Sr. Water Res. Mgt Specialist	AFTWR
Kassem, Maiada	Consultant	MNAFM
Mengesha, Mikael	Sr. Procurement Specialist	MNAPR
Mphande, Donald	Sr. financial Mgt. Specialist	AFTFM
Nsabimana, Seraphine	Program Assistant	AFTEN
Rees, Colin	Consultant	AFTEN
Soliman, Ayat	Sr. Natural Res. Mgt. Spec.	MNSSD
Yagoub, Mohammed	Consultant	AFTEN

Bank funds expended to date on project preparation:

1. Bank resources:

2. Trust funds:
3. Total:

Estimated Approval and Supervision costs:

1. Remaining costs to approval:
2. Estimated annual supervision cost:

## **Annex 12: Documents in the Project File**

1. Fast Track Watershed Management Project in Sudan: Project Implementation Plan, December 2007.
2. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Distributive Analysis, July 2007.
3. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Benefits of Watershed Management in the Context of a Multi-purpose Programme, July 2007.
4. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis: Main Nile Sub-basin, July 2007.
5. Watershed Management Fast Track Project, Sudan. Project Implementation Plan, December 2007.
6. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis. Country Report, Ethiopia, January 2007.
7. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis: Abay-Blue Nile Sub-basin. January 2007.
8. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis: Tekeze-Atbara Sub-basin. January 2007.
9. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis: Baro-Sobat-White Nile Sub-basin. January 2007.
10. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis: Country Report, Egypt, January 2007.
11. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Cooperative Mechanism, May 2007.
12. Eastern Nile Watershed Project: Cooperative Regional Assessment for Watershed Management. Transboundary Analysis. Country Report: Sudan, January 2007.
13. Financing Sources and Mechanism for Watershed Management in Sudan, Egypt, and Ethiopia. December 2005.

## Annex 13: Statement of Loans and Credits

### EGYPT

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements	
			IBRD	IDA	SF	GEF			Orig.	Frm. Rev'd
P095392	2008	EG-NATURAL GAS CONNECTIONS	75.00	0.00	0.00	0.00	0.00	75.00	0.00	0.00
P094551	2008	EG-FINANCIAL SECTOR DPL II	500.00	0.00	0.00	0.00	0.00	500.00	0.00	0.00
P094311	2008	EG INTEGRATED SANITATION & SEWERAGE INFR	120.00	0.00	0.00	0.00	0.00	120.00	0.00	0.00
P093470	2007	EG-MORTGAGE FINANCE	37.10	0.00	0.00	0.00	0.00	16.48	-4.28	0.00
P087970	2007	West Delta Water Conserv. & Irrig. Rehab	145.00	0.00	0.00	0.00	0.00	145.00	56.67	0.00
P091945	2006	EG-EL TEBBIN POWER	259.60	0.00	0.00	0.00	0.00	216.67	72.13	37.62
P090073	2006	Second Pollution Abatement Project	20.00	0.00	0.00	0.00	0.00	17.13	7.13	7.13
P082952	2005	EG-Early Childhood Education Enhancement	20.00	0.00	0.00	0.00	0.00	17.94	12.37	0.00
P073977	2005	EG-INTEGRATED IRRIGATION IMPR. & MGT	120.00	0.00	0.00	0.00	0.00	113.19	29.86	1.20
P082914	2004	EG-AIRPORTS DEVELOPMENT PROJECT	375.00	0.00	0.00	0.00	0.00	40.24	-1.84	-11.70
P049702	2004	EG-SKILLS DEVELOPMENT	5.50	0.00	0.00	0.00	0.00	2.05	2.05	-0.80
P045499	2000	EG-NATIONAL DRAINAGE II	50.00	0.00	0.00	0.00	0.00	1.53	1.53	0.75
P050484	1999	EG Secondary Education Enhancement Proj	0.00	50.00	0.00	0.00	0.00	21.92	18.59	-0.14
P049166	1998	EG East Delta Ag. Serv.	0.00	15.00	0.00	0.00	0.62	3.88	2.76	1.50
P045175	1998	EG-HEALTH SECTOR	0.00	90.00	0.00	0.00	0.00	1.10	-7.42	-7.58
Total:			1,727.20	155.00	0.00	0.00	0.62	1,292.13	189.55	27.98

EGYPT  
STATEMENT OF IFC's  
Held and Disbursed Portfolio  
In Millions of US Dollars

FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
1996	ANSDK	1.33	0.00	0.00	0.00	0.56	0.00	0.00	0.00
2004	Alexandria Fiber	8.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00
2001	Amreya	4.69	0.00	0.00	0.00	4.69	0.00	0.00	0.00
2006	CIB LLC	0.00	0.72	0.00	0.00	0.00	0.48	0.00	0.00
1999	CIL	0.00	0.74	0.00	0.00	0.00	0.74	0.00	0.00
2004	CIL	0.00	0.15	0.00	0.00	0.00	0.15	0.00	0.00
1992	Carbon Black-EGT	0.00	1.48	0.00	0.00	0.00	1.48	0.00	0.00
1997	Carbon Black-EGT	0.00	1.48	0.00	0.00	0.00	1.48	0.00	0.00
1998	Carbon Black-EGT	4.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00
2000	Carbon Black-EGT	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	Ceramica Al-Amir	3.33	0.00	0.00	0.00	3.33	0.00	0.00	0.00
2006	Cmrcl Intl Bank	0.00	23.28	0.00	0.00	0.00	23.03	0.00	0.00
2006	EFG Hermes	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	EHF	0.00	1.70	0.00	0.00	0.00	1.70	0.00	0.00
2005	Egypt Factors	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	Gippsland	0.00	4.61	0.00	0.00	0.00	2.03	0.00	0.00
2001	IT Worx	0.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00
2004	Lecico Egypt	8.94	0.00	0.00	0.00	8.94	0.00	0.00	0.00
1986	Meleiha Oil	0.00	8.62	0.00	0.00	0.00	0.00	0.00	0.00
1988	Meleiha Oil	0.00	9.20	0.00	0.00	0.00	0.00	0.00	0.00
1992	Meleiha Oil	0.00	13.00	0.00	0.00	0.00	0.94	0.00	0.00
2005	Merlon Egypt	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	Metro	10.50	0.00	0.00	0.00	10.50	0.00	0.00	0.00
1992	Misr Compressor	9.70	0.00	0.00	0.00	9.70	0.00	0.00	0.00
	Orix Leasing EGT	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1996	Orix Leasing EGT	0.00	0.53	0.00	0.00	0.00	0.53	0.00	0.00
2001	Orix Leasing EGT	1.09	0.00	0.00	0.00	1.09	0.00	0.00	0.00
2001	Port Said	41.07	0.00	0.00	132.53	41.07	0.00	0.00	132.53
2002	SEKEM	4.18	0.00	0.00	0.00	4.18	0.00	0.00	0.00
2006	SONUT	10.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00
2004	SPDC	18.40	0.00	0.00	0.00	18.40	0.00	0.00	0.00
2001	SUEZ GULF	40.40	0.00	0.00	129.07	40.40	0.00	0.00	129.07
1997	UNI	2.05	0.00	0.00	0.00	2.05	0.00	0.00	0.00
2001	UNI	2.06	0.00	0.00	0.00	2.06	0.00	0.00	0.00
2005	Wadi Group	15.00	0.00	0.00	0.00	7.50	0.00	0.00	0.00
	Total portfolio:	214.74	70.51	4.00	261.60	165.47	34.56	0.00	261.60

**Approvals Pending Commitment**

FY Approval	Company	Loan	Equity	Quasi	Partic.
-------------	---------	------	--------	-------	---------

2004	ACB Acrylic	0.00	0.00	0.00	0.00
2004	Merlon Egypt	0.00	0.00	0.00	0.02
2000	ACB Expansn III	0.00	0.00	0.00	0.00
2006	Rally Energy	0.01	0.00	0.00	0.00
Total pending commitment:		0.01	0.00	0.00	0.02

STATEMENT OF IFC's  
Held and Disbursed Portfolio  
In Millions of US Dollars

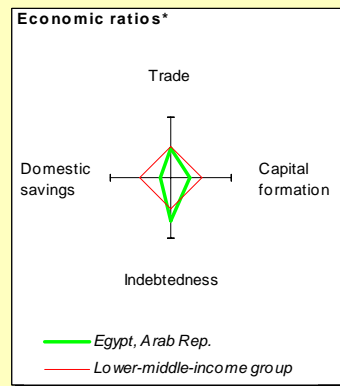
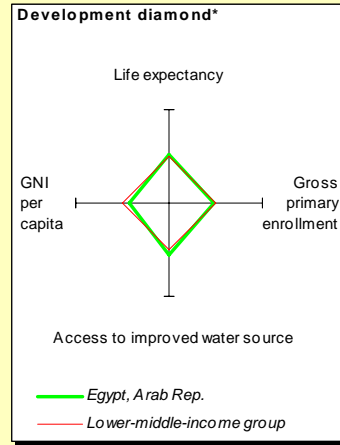
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic.	Loan	Equity	Quasi	Partic.
Total portfolio:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic.
Total pending commitment:		0.00	0.00	0.00	0.00

## Annex 14: Country at a glance

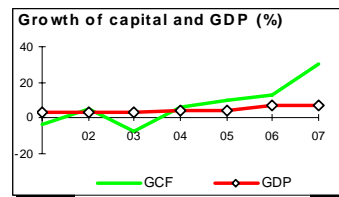
### A. EGYPT

POVERTY and SOCIAL	Egypt	M. East & North Africa	Lower-middle-income		
<b>2007</b>					
Population, mid-year ( <i>millions</i> )	75.5	313	3,437		
GNI per capita ( <i>Atlas method, US\$</i> )	1,580	2,794	1,887		
GNI ( <i>Atlas method, US\$ billions</i> )	19.4	876	6,485		
<b>Average annual growth, 2001-07</b>					
Population (%)	18	18	11		
Labor force (%)	2.8	3.6	15		
<b>Most recent estimate (latest year available, 2001-07)</b>					
Poverty ( <i>% of population below national poverty line</i> )	..	..	..		
Urban population ( <i>% of total population</i> )	43	57	42		
Life expectancy at birth ( <i>years</i> )	71	70	69		
Infant mortality ( <i>per 1,000 live births</i> )	29	34	41		
Child malnutrition ( <i>% of children under 5</i> )	5	..	25		
Access to an improved water source ( <i>% of population</i> )	98	89	88		
Literacy ( <i>% of population age 15+</i> )	71	73	89		
Gross primary enrollment ( <i>% of school-age population</i> )	105	105	111		
Male	107	108	112		
Female	102	103	109		
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>					
	<b>1987</b>	<b>1997</b>	<b>2006</b>	<b>2007</b>	
GDP ( <i>US\$ billions</i> )	40.5	78.4	107.5	128.1	
Gross capital formation/GDP	26.1	17.6	18.7	21.9	
Exports of goods and services/GDP	12.6	18.8	29.9	31.3	
Gross domestic savings/GDP	15.9	11.5	17.1	14.0	
Gross national savings/GDP	19.1	17.3	22.0	24.3	
Current account balance/GDP	-2.3	0.2	1.6	2.1	
Interest payments/GDP	12	10	0.6	..	
Total debt/GDP	109.0	38.4	27.3	..	
Total debt service/exports	17.9	10.0	5.4	..	
Present value of debt/GDP	..	..	24.0	..	
Present value of debt/exports	..	..	63.1	..	
	<b>1987-97</b>	<b>1997-07</b>	<b>2006</b>	<b>2007</b>	<b>2007-11</b>
<i>(average annual growth)</i>					
GDP	4.1	4.5	6.8	7.1	6.8
GDP per capita	2.0	2.6	4.9	5.2	5.7
Exports of goods and services	6.3	9.5	21.3	14.2	19.6



#### STRUCTURE of the ECONOMY

(% of GDP)	1987	1997	2006	2007
Agriculture	20.5	17.0	14.1	13.0
Industry	27.1	31.2	38.4	35.5
Manufacturing	16.5	17.6	16.6	15.8
Services	52.4	51.8	47.5	51.5
Household final consumption expenditure	69.9	77.2	70.6	74.8
General gov't final consumption expenditure	14.3	11.3	12.3	11.2
Imports of goods and services	22.8	24.9	31.6	39.2



(average annual growth)	1987-97	1997-07	2006	2007
Agriculture	2.8	3.4	3.2	3.7
Industry	6.3	4.3	9.8	8.0
Manufacturing	5.3	4.9	5.9	7.6
Services	2.7	4.8	6.1	5.3
Household final consumption expenditure	4.7	3.4	5.2	6.5
General gov't final consumption expenditure	2.3	4.1	3.1	20.0
Gross capital formation	-12	4.7	13.3	30.1
Imports of goods and services	2.5	6.7	21.8	27.8



Note: 2007 data are preliminary estimates.

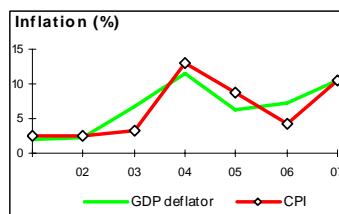
This table was produced from the Development Economics LDB database.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

## Egypt, Arab Rep.

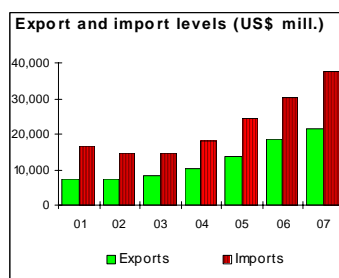
### PRICES and GOVERNMENT FINANCE

	1987	1997	2006	2007
<b>Domestic prices</b>				
<i>(% change)</i>				
Consumer prices	..	6.2	4.2	10.4
Implicit GDP deflator	311	9.9	7.4	10.5
<b>Government finance</b>				
<i>(% of GDP, includes current grants)</i>				
Current revenue	20.3	22.8	27.3	25.3
Current budget balance	20.3	22.8	27.4	0.3
Overall surplus/deficit	26.2	24.3	28.5	-8.3



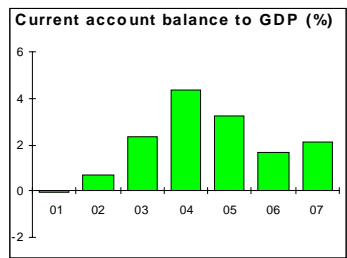
### TRADE

(US\$ millions)	1987	1997	2006	2007
Total exports (fob)	2,264	5,345	18,455	21,336
Cotton	458	2,578	10,407	11,038
Other agriculture	343	107	146	182
Manufactures	665	1,302	5,172	5,947
Total imports (cif)	7,323	15,565	30,441	37,469
Food	2,338	2,885	1,921	2,159
Fuel and energy	884	1,909	5,443	5,928
Capital goods	1,764	4,114	7,888	12,030
Export price index (2000=100)	87	126	150	157
Import price index (2000=100)	86	116	135	138
Terms of trade (2000=100)	101	108	111	113

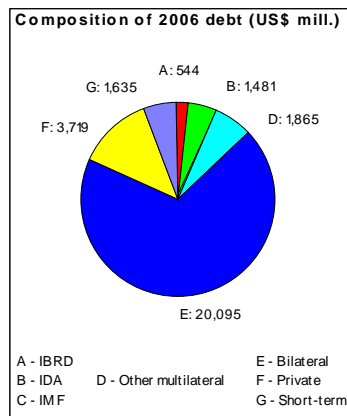


**BALANCE of PAYMENTS**

	1987	1997	2006	2007
<i>(US\$ millions)</i>				
Exports of goods and services	5,667	14,534	33,891	40,008
Imports of goods and services	9,468	19,528	38,217	50,121
Resource balance	-3,801	-4,994	-4,326	-10,114
Net income	-480	967	531	940
Net current transfers	3,356	4,145	5,547	11,915
Current account balance	-924	119	1,752	2,741
Financing items (net)	106	1,793	1,502	3,940
Changes in net reserves	819	-1,912	-3,253	-6,681
<b>Memo:</b>				
Reserves including gold <i>(US\$ millions)</i>	..	..	26,660	30,320
Conversion rate <i>(DEC, local/US\$)</i>	13	3.4	5.7	5.7


**EXTERNAL DEBT and RESOURCE FLOWS**

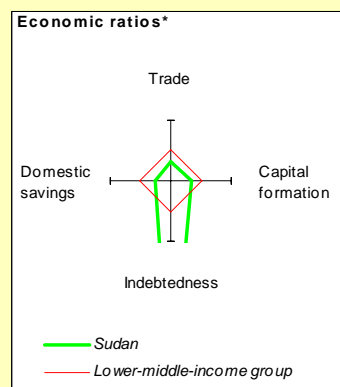
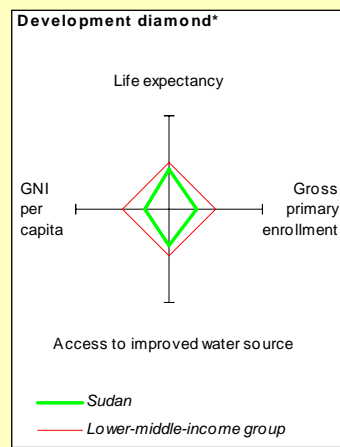
	1987	1997	2006	2007
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	44,147	30,102	29,339	..
IBRD	1,703	869	544	1,181
IDA	892	1,206	1,481	1,490
Total debt service	1,661	1,985	2,201	..
IBRD	244	297	93	144
IDA	10	24	53	58
Composition of net resource flows				
Official grants	560	1,028	639	..
Official creditors	753	-10	-1,040	..
Private creditors	574	-37	-250	..
Foreign direct investment (net inflows)	948	891	10,043	..
Portfolio equity (net inflows)	0	515	502	..
World Bank program				
Commitments	0	75	817	0
Disbursements	163	260	164	737
Principal repayments	125	241	108	144
Net flows	38	19	56	593
Interest payments	129	80	39	58
Net transfers	-91	-61	18	535



Note: This table was produced from the Development Economics LDB database.

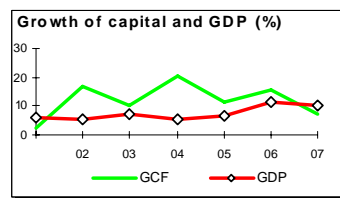
9/24/08

POVERTY and SOCIAL	Sudan	Sub-Saharan Africa	Lower-middle-income	
<b>2007</b>				
Population, mid-year (millions)	38.6	800	3,437	
GNI per capita (Atlas method, US\$)	950	952	1,887	
GNI (Atlas method, US\$ billions)	36.7	762	6,485	
<b>Average annual growth, 2001-07</b>				
Population (%)	2.1	2.5	1.1	
Labor force (%)	2.7	2.6	1.5	
<b>Most recent estimate (latest year available, 2001-07)</b>				
Poverty (% of population below national poverty line)	..	..	..	
Urban population (% of total population)	43	36	42	
Life expectancy at birth (years)	58	51	69	
Infant mortality (per 1,000 live births)	61	94	41	
Child malnutrition (% of children under 5)	..	27	25	
Access to an improved water source (% of population)	70	58	88	
Literacy (% of population age 15+)	..	59	89	
Gross primary enrollment (% of school-age population)	66	94	111	
Male	71	99	112	
Female	61	88	109	
<b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>				
	<b>1987</b>	<b>1997</b>	<b>2006</b>	<b>2007</b>
GDP (US\$ billions)	20.6	11.7	36.4	46.2
Gross capital formation/GDP	15.1	15.8	24.8	24.2
Exports of goods and services/GDP	5.5	5.3	16.5	20.1
Gross domestic savings/GDP	9.5	8.6	13.9	20.5
Gross national savings/GDP	12.0	9.5	9.7	11.9
Current account balance/GDP	-2.1	-6.3	-15.1	-12.4
Interest payments/GDP	0.1	0.0	0.1	..
Total debt/GDP	54.5	139.8	52.6	..
Total debt service/exports	12.0	9.0	4.8	..
Present value of debt/GDP	..	..	56.4	..
Present value of debt/exports	..	..	336.4	..
	<b>1987-97</b>	<b>1997-07</b>	<b>2006</b>	<b>2007</b>
<i>(average annual growth)</i>				
GDP	4.2	6.6	11.3	10.2
GDP per capita	1.7	4.3	8.9	7.7
Exports of goods and services	-12	21.7	0.4	33.6



#### STRUCTURE of the ECONOMY

(% of GDP)	1987	1997	2006	2007
Agriculture	32.8	46.8	30.1	28.3
Industry	16.3	14.6	29.2	30.7
Manufacturing	8.8	8.8	6.3	6.1
Services	50.9	38.6	40.8	41.0
Household final consumption expenditure	77.8	86.0	69.4	64.8
General gov't final consumption expenditure	12.8	5.4	16.7	14.8
Imports of goods and services	11.1	12.5	27.5	23.9



(average annual growth)	1987-97	1997-07	2006	2007
Agriculture	4.7	2.0	4.4	3.1
Industry	4.8	12.5	16.4	20.0
Manufacturing	4.5	3.4	1.5	6.0
Services	3.0	8.2	14.1	10.0
Household final consumption expenditure	3.6	4.7	11.4	1.4
General gov't final consumption expenditure	1.3	11.4	11.7	-3.0
Gross capital formation	10.5	11.7	15.9	7.4
Imports of goods and services	3.4	14.6	8.2	-4.4



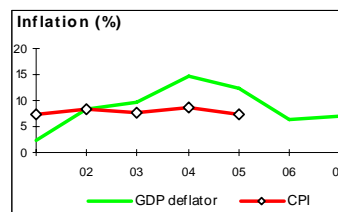
Note: 2007 data are preliminary estimates.

This table was produced from the Development Economics LDB database.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

## PRICES and GOVERNMENT FINANCE

	1987	1997	2006	2007
<b>Domestic prices</b> (% change)				
Consumer prices	20.6	46.7	..	..
Implicit GDP deflator	25.9	47.6	6.5	7.0
<b>Government finance</b> (% of GDP, includes current grants)				
Current revenue	11.1	5.8	20.0	19.9
Current budget balance	-11.0	-0.2	-0.4	1.0
Overall surplus/deficit	..	-0.7	-4.4	-3.1



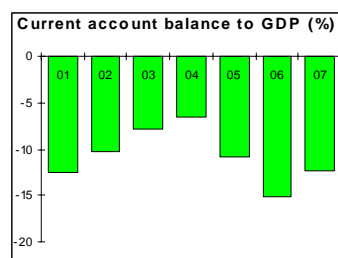
## TRADE

	1987	1997	2006	2007
(US\$ millions)				
Total exports (fob)	265	594	5,813	8,902
Sesame	..	..	5,244	8,443
n.a.	..	..	..	..
Manufactures	..	..	..	..
Total imports (cif)	832	1,422	7,105	7,722
Food	140	243	656	723
Fuel and energy	184	299	364	256
Capital goods	189	261	3,785	4,099
Export price index (2000=100)	..	93	..	..
Import price index (2000=100)	..	104	..	..
Terms of trade (2000=100)	..	90	..	..



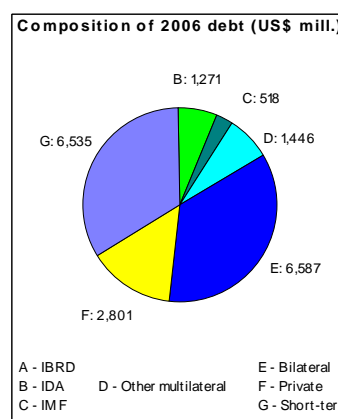
## BALANCE of PAYMENTS

	1987	1997	2006	2007
(US\$ millions)				
Exports of goods and services	450	624	6,015	9,287
Imports of goods and services	923	1,462	9,995	11,041
Resource balance	-474	-838	-3,980	-1,754
Net income	-629	-345	-2,898	-4,546
Net current transfers	676	452	1,390	582
Current account balance	-427	-731	-5,489	-5,718
Financing items (net)	176	754	5,519	..
Changes in net reserves	250	-23	-30	..
<b>Memo:</b>				
Reserves including gold (US\$ millions)	77	82	..	..
Conversion rate (DEC, local/US\$)	1.76E-3	16	2.2	2.0



## EXTERNAL DEBT and RESOURCE FLOWS

	1987	1997	2006	2007
(US\$ millions)				
Total debt outstanding and disbursed	11,249	16,326	19,158	..
IBRD	49	6	0	0
IDA	688	1,198	1,271	1,307
Total debt service	97	58	292	..
IBRD	8	0	0	0
IDA	8	0	3	0
Composition of net resource flows				
Official grants	564	118	1,776	..
Official creditors	160	5	93	..
Private creditors	0	0	0	..
Foreign direct investment (net inflows)	12	98	3,534	..
Portfolio equity (net inflows)	0	0	-35	..
World Bank program				
Commitments	49	0	0	0
Disbursements	62	0	0	0
Principal repayments	8	0	2	0
Net flows	55	0	-2	0
Interest payments	8	0	1	0
Net transfers	46	0	-3	0



Note: This table was produced from the Development Economics LDB database.

9/24/08

**Annex 14: Country at a glance**

**B. SUDAN**

## **Annex 15: GEF Incremental Cost Analysis**

### **Introduction**

1. The Nile River, which is 6,600 km long, is the longest river in the world. It has a drainage area of nearly 3.1 million sq. km, covering the following 10 countries- Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda. The Nile River basin can be divided into two sub-basins – the Eastern Nile and the Equatorial Lake Sub-basins. The Eastern Nile Basin is considered to include four river systems, Abay-Blue Nile; Tekeze-Setit-Atabara; Baro-Akobo-Sobat – White Nile and the Main Nile. The headwaters of the first three tributary systems rise in the Ethiopia highlands, while the Main Nile traverses through Sudan and Egypt. The Abay-Blue Nile alone accounts for 30 – 90% of all Nile waters reaching Egypt, depending on the season. The countries in the Eastern Nile Basin are Egypt, Ethiopia, and Sudan.

2. The Equatorial Lakes Basin comprises a complex of lakes, wetlands, and rivers, including Lake Victoria, the second largest freshwater lake in the world, Lake Albert, Lake Edward, Kagera River, Mara River, and the Malakisi-Malabi-Soi River.

3. A variety of ecosystems occur in the Nile Basin and they include tropical forest, woodlands, savannas, wetlands, arid lands and deserts, and a large delta. These ecological systems support a wide diversity of habitats, flora and fauna, including the following: (a) Lake Victoria and its surrounding wetlands alone support more than 430 fish species, 350 of which are endemic; (b) the savanna ecosystems are the richest grasslands in the world in terms of very high flora and fauna diversity; and (c) the savanna supports the biggest concentration of large mammals in the world. Also, at least 125 migratory bird species use the Nile basin as a flyway between Africa, Europe and Asia.

4. The Nile River plays a major role in the economies of the riparian countries, particularly in the development of key economic infrastructure such as irrigation schemes and hydropower dams, driving industrialization and urbanization. The Nile basin also supports the local livelihoods of about 160 million people who are involved in rain-fed agriculture (mainly in Ethiopia and Sudan), irrigated agriculture, fisheries, and livestock production (mainly through agro-pastoralism; transhumans pastoralism, etc.).

5. The main environmental challenge in the Eastern Nile Basin, the focus of the proposed project, is land degradation, which has major implications for agricultural productivity, water quality, and biodiversity conservation. The most degraded parts of the Eastern Nile Basin are the Ethiopia highlands. About 20,000 sq. km of land in this area is severely degraded because of accelerated soil erosion, leaving only a topsoil depth of less than 10 cm. This situation is expected to worsen if no action is taken, with the size of the severely degraded areas growing to 100,000 sq. km. by 2010. This rate of soil fertility loss cannot sustain agricultural production, making the country more vulnerable to food insecurity.

6. In addition to the Ethiopian highlands, the other “hotspots” of land degradation in the Eastern Nile Basin are the forest and woodland areas south of Khartoum, and the Atbara and the Blue Nile basins in Sudan. In the case of wetlands, the most severely degraded areas are: (a) the Lake Nasser/Nubia basin, Nile delta, Qarun, and Rayan in Egypt; (b) the Gambella floodplain, Lake Tana, Finchaa area, Dobus swamp/Alatish River in Ethiopia; and (c) the Sudd, Machar marshes, and Dinder wetlands in Sudan.

7. The main causes of land degradation in the Eastern Nile Basin are: (a) clearing of forests, woodlands, and wetlands for large-scale and smallholder agriculture; (b) overgrazing of rangelands by livestock; and (c) overexploitation of forests and woodlands for fuelwood and charcoal. Underlining these proximate causes are macro-level policies that are beyond the scope of the proposed project, such as agricultural and land tenure policies that favor the expansion of semi-mechanized agriculture.

8. The most significant impact of land degradation in the Eastern Nile Basin is deteriorating water quality because of increased sedimentation. As a result, there is increased siltation of major reservoirs for irrigation and hydropower generation, reducing their efficiency. This situation sometimes leads to costly de-silting operations. The most critical areas adversely affected by increased siltation in the Eastern Nile Basin area are the Aswan High Dam in Egypt; the Finchaa and Tekeze hydropower dams in Ethiopia; and the Roseires, Sennar, Khasm El Girba, Gezira, Rahad, and New Haifa irrigation schemes in Sudan.

### **Baseline Scenario**

9. The Eastern Nile countries – Egypt, Ethiopia, and Sudan – are committed to work together to “... develop and implement coordinated approaches and planning frameworks for integrated land and water management to improve environmental management and the living standards of local communities in the Eastern Nile Basin as part of the Nile Basin Initiative.” As a follow up, the Eastern Nile Council of Ministers (ENCOM) has endorsed several initiatives, including the following priority multi-purpose investments, which are aimed at generating tangible on-the-ground economic and social benefits -- Watershed Management, Flood Preparedness and Early Warning, Eastern Nile Planning Model, Baro-Akobo Multi-purpose Water Resources Development, Ethiopia-Sudan Transmission Interconnection, Eastern Nile Power Trade Study, and Eastern Nile Irrigation and Drainage.

10. The proposed project, the Eastern Nile Watershed Management Project, represents the watershed management investment program approved by the ENCOM. It was envisaged to involve Egypt, Ethiopia, and Sudan. However, the development of the Ethiopia portion was accelerated because the Government wanted to incorporate it into the complementary Tana & Beles Integrated Water Resources Development Project (TBIWRDP). It was, therefore, processed separately from the proposed project and it was approved by the World Bank Board in May, 2008.

11. Nevertheless, the TBIWRDP remains an organic part of the proposed project, specifically its Natural Resources Investment Component because it is part of the watershed management investment approved by the ENCOM. Moreover, the highland of Ethiopia is a major source of

sediments into the Eastern Nile Basin. Therefore, supporting sustainable land management interventions in this area would contribute significantly to addressing the issue of land degradation in the basin.

12. Under the Proposed Eastern Nile Watershed Management Project, the following baseline interventions are considered using government funds:

(a) Community watershed management component for Sudan: Establishment of demonstration farms to promote innovative practices and technologies in agriculture; and development of rainwater harvesting structures such as farm ponds, storage tanks and springs development for domestic use and small-scale irrigation; and

(b) Knowledge for Cooperative Action component for Egypt, Ethiopia, and Sudan: Limited assistance for human resource development and information sharing on watershed management practices.

13. Natural Resources Investment Component of the associated TBIWRDP, which include the following also contributes to the baseline:

(a) Development of a network of hydro-meteorological, groundwater, and environmental monitoring systems;

(b) Building the capacity of organizations involved in watershed management, including strengthening their knowledge base and analytical capacity;

(c) Investments in livelihood-based catchment management to increase agricultural productivity and farmers' incomes;

(d) community-based flood management; and

(e) Promotion of economic growth-oriented investments.

### **GEF Alternative**

14. Compared to the baseline scenario described above, complementary financing from the GEF will enable the Eastern Nile countries, particularly Egypt and Sudan, to build on the baseline activities with "incremental actions".

15. The specific Global Environment Objectives of the proposed project are to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, with the support of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin. GEF funds.

16. GEF incremental actions (or GEF financed interventions), which would complement the baseline actions, would be implemented in this project through the following components:

17. Community watershed management component: Forest rehabilitation and management, including: (a) support for agro-forestry, reforestation and management of forest reserves, and the establishment of community forests such as woodlots, shelterbelts for sand dune fixation, etc.; and (b) improved range management, including mapping of seasonal livestock migration routes and the rehabilitation of rangelands through stock management, re-seeding, management of water points, and improved grazing systems.

18. Knowledge for cooperative action component: (a) Capacity building of regional and national institutions in watershed management in the Eastern Nile countries; (b) development of harmonized standards, methods, and protocols for sharing of information; (c) environmental quality monitoring activities to collect and analyze biophysical (mainly sedimentation, water quality, and selected limnological parameters) and socio-economic information necessary for the development of guidelines for integrated and sustainable management of Lake Nasser/Nubia; and (d) development, in a participatory way, principles and guidelines (i.e. a framework) to support the integrated management and sustainable use of the resources of Lake Nasser/Nubia, including balancing competing uses, based on the information generated from the biophysical and socio-economic surveys.

**Table 1: Overview of GEF Incremental Activities**

<b>Component Interventions</b>	<b>Key Results</b>
<p><b>Community watershed management component</b></p> <ul style="list-style-type: none"> <li>• Agro-forestry, reforestation and management of forest reserves, and the establishment of community forests.</li> <li>• Range rehabilitation and improved management</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in the number of households (farmers and pastoralists) adopting sustainable land and water management practices.</li> <li>• Increase in the size of forest areas rehabilitated.</li> <li>• Increase in the size of rangelands rehabilitated.</li> </ul>
<p><b>Knowledge for cooperative action component<sup>6</sup></b></p> <ul style="list-style-type: none"> <li>• Capacity building for regional and national institutions involved in watershed management in the Eastern Nile countries.</li> <li>• Development of harmonized standards, methods, and protocols for sharing of information on watershed management.</li> <li>• Environmental quality monitoring.</li> <li>• Development of principles and guidelines (i.e. management framework) to support the integrated management and sustainable use of the resources of Lake Nasser/Nubia.</li> </ul>	<ul style="list-style-type: none"> <li>• The number of staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.</li> <li>• Number of new information products (i.e. publications, CDs, status reports, etc.) that are developed to increase sharing of information on watershed management, including on best management practices, among the riparian countries in the Eastern Nile Basin.</li> <li>• Key sectoral or thematic guidelines for integrated and sustainable land and water management in the Lake Nasser/Nubia Sub-basin, which would constitute the framework, that is completed and adopted by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan.</li> </ul>

<sup>6</sup> The GEF International Waters Tracking Tool would be used, among others, to track project results.

## **Global Environmental Benefits**

19. The main expected benefits of GEF support will result from: (a) reduced soil erosion and sedimentation in the Eastern Nile Basin because of rehabilitation and sustainable management of selected micro-watersheds; (b) development and adoption by the Ministry of Water Resources and Irrigation, Egypt and the Ministry of Irrigation and Water Resources, Sudan of guidelines for integrated and sustainable management of the transboundary water and land resources of Lake Nasser/Nubia basin; and (c) improved protocols and information products for sharing best management practices and lessons learned in integrated land and water resources management in the Eastern Nile Basin.

## **Fit with GEF Strategic Priorities**

20. The objectives and proposed interventions under the Eastern Nile Watershed Management Project are consistent with the GEF 4 strategic priorities of the Focal Areas on Land Degradation and on International Waters. The specific strategic priority for the GEF's land degradation programs that is related to the proposed project, including the TerrAfrica/GEF Strategic Investment (GEF/SIP) Program, is upscaling of sustainable land management investments that generate mutual benefits for the global environment and local livelihoods (Strategic Objective 2).

21. Specific priorities for the Land Degradation Focal Area and TerrAfrica/SIP that would be addressed in the proposed project include regional-level activities such as improving knowledge management; strengthening of African coalitions, institutions and leadership; and investment coordination; and national and community-level priorities including the following: (a) support for on-the-ground activities to scale up sustainable land and water management practices; capacity building for community-level and other relevant institutions; (b) integration of sustainable land and water management priorities into national and sectoral planning frameworks in the riparian countries, and regional cooperative basin planning frameworks; (c) development of effective knowledge management systems, including sharing of knowledge and innovation, and dissemination of best practices and lessons learned; and (d) improvements in the capacity of local communities to adapt to climate change, including diversification of crop production, water harvesting/supplementary irrigation, and diversified livelihood. In addition, the programmatic approach to scaling up of SLM and related activities initiated in the context of TerrAfrica/SIP in Ethiopia will also support the regional approach under this regional operation.

22. The proposed project is in line with the long-term objective of the GEF's International Waters Focal Area – to foster international, multi-state cooperation on priority water concerns. It is also consistent with the GEF's Strategic Program for International Waters for the GEF's Fourth Replenishment which is “to balance overuse and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature” (the GEF's International Waters 3). The project would also support the participation of some of the intended beneficiaries in IWLEARN, a network of specialists and practitioners working on transboundary water management issues.

## **Incremental Value Added by GEF Funding**

23. As noted above, the financing from Finland, Egypt, and Sudan would focus primarily on baseline activities such as establishment of demonstration farms to promote innovative practices and technologies in agriculture; development of rainwater harvesting structures such as farm ponds, storage tanks and springs development for domestic use and small-scale irrigation; and limited human resource development and information sharing.

24. The added value of GEF financing is that these baseline activities, which would generate mainly domestic benefits, would be expanded to the following additional interventions:

(a) Improve forest and range management. This would help to prevent or reduce land degradation and support the conservation and sustainable use of biodiversity of global and national importance;

(b) Capacity building for of regional and national institutions involved in transboundary watershed management in the Eastern Nile countries. This intervention would help to foster cooperation among the institutions in the riparian countries to address critical transboundary issues such as competing water use, land degradation contributing to reduced sedimentation, loss of critical habitats, biodiversity conservation, and adaptation to climate variability and change;

(c) Development of an environmental quality monitoring program for Lake Nasser/Nubia, which would provide information for decision-makers and resource management to act proactively in addressing environmental threats; and

(d) Development of a framework to support the integrated management and sustainable management of the land and water resources of Lake Nasser/Nubia, including balancing competing uses. Such a framework would help to avoid conflicts over resources use and promote conservation and sustainable use of flora and fauna, including those of global conservation significance.

## **Co-financing**

25. The GEF's contribution of \$8.7 million to the proposed project would be complemented with \$13 million from the Government of Finland, \$0.2 million from the Government of Egypt, and \$13.5 million from the Government of Sudan and an additional \$67.6 million from the TBIWRDP in Ethiopia (IDA, Finnish, and government financing). There is no IDA funding because Sudan is not eligible for such funds because of its arrears (see Table 2 below).

**Table 2: Incremental Cost Analysis Summary**

<b>Component/Activities</b>	<b>GEF (US\$ million)</b>	<b>IDA</b>	<b>Finnish Trust Fund (US\$ million)<sup>7</sup></b>	<b>Government Share of Project Funds (US\$ million)</b>	<b>Total (US\$ million)</b>
<i>Community watershed management component (Ethiopia and Sudan)</i>					
• Natural Resource Management	3.7	0.0	6.4	5.3	15.4
• Sustainable Agriculture	0.0	0.0	4.8	5.4	10.2
<i>Knowledge for cooperative action component (Regional level)</i>					
• Regional cooperative action	1.5	0.0	0.0	0.0	1.5
• Lake Nasser/Nubia management	2.7 <sup>8</sup>	0.0	0.0	0.0	2.7
<i>Project management component</i>					
• Project management	0.8	0.0	1.8	3.0	5.6
<b>Total</b>	<b>8.7</b>	<b>0.0</b>	<b>13.0</b>	<b>13.7</b>	<b>35.4</b>
<i>Natural resource investment component (under the already approved Tana &amp; Beles Integrated Water Resources Development Project)</i>					
• Sub-basin planning and management	0.0	15.7	0.0	1.9	17.6
• Natural resource management investment	0.0	18.8	8.0	14.0	40.8
• Growth oriented investment facilitation	0.0	8.4	0.0	0.73	9.2
<b>Total</b>	<b>8.7</b>	<b>42.9</b>	<b>21.1</b>	<b>30.33</b>	<b>103.0</b>

<sup>7</sup> This amount includes the cost of technical assistance (\$3 million) to be procured directly by Finland.

<sup>8</sup> These funds would come from the GEF allocation for the International Waters Focal Area. The rest of the GEF funds would come from the Land Degradation Focal Area.

## **Annex 16: MAP**

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