Document of
The World Bank

Report No: ICR00003838

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-94530, TF-94531, TF-94532, TF-97478)

ON THREE GRANTS FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

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

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

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

AND ONE GRANT FROM THE
GOVERNMENT OF FINLAND

IN THE AMOUNT OF EUR6.52 MILLION

TO THE GOVERNMENT OF SUDAN

FOR AN

EASTERN NILE WATERSHED MANAGEMENT PROJECT

June 24, 2016

Global Practice Water
East and Southern Africa Region

ABBREVIATIONS AND ACRONYMS

CWM	Community Watershed Management
CWMP	Community Watershed Management Project
ENSAP	Eastern Nile Subsidiary Action Program
ENCOM	Eastern Nile Council of Ministers
ENTRO	Eastern Nile Technical Regional Office
ENWMP	Eastern Nile Watershed Management Project
FNC	Forest National Corporation
GEF	Global Environment Facility
GEO	Global Environmental Objective
GoF	Government of Finland
HH	Household
ICR	Implementation Completion and Results Report
KPI	Key Performance Indicator
LIU	Locality Implementation Unit
LNNMF	Lake Nasser/Nubia Management Framework
M&E	Monitoring and Evaluation
MFA	Ministry of Foreign Affairs
MoIWR	Ministry of Irrigation and Water Resources
MoWRI	Ministry of Water Resources and Irrigation
NBI	Nile Basin Initiative
NWS	Nile Water Sector
NCORE	Nile Cooperation for Results Project
PAD	Project Appraisal Document
PCR	Project Completion Report
PDO	Project Development Objective
SLM	Sustainable Land Management
SWC	Soil and Water Conservation
TA	Technical Assistance
VDC	Village Development Committee
WA	Withdrawal Application

Vice President:	Makhtar Diop
Country Director:	Moustapha Ahmadou Ndiaye
Practice Manager	Jonathan Kamkwalala/Steven Schonberger
Project Team Leader:	Edward Felix Dwumfour
ICR Team Leader:	Edward Felix Dwumfour

AFRICA
EASTERN NILE WATERSHED MANAGEMENT PROJECT (P111330)

CONTENTS

B. Key Dates i
C. Ratings Summary i
D. Sector and Theme Codes ii
E. Bank Staff ii
F. Results Framework Analysis iii
G. Ratings of Project Performance in ISRs v
H. Restructuring (if any) vi
I. Disbursement Profile vii
1. Project Context, Global Environment Objectives and Design 1
1.1 Context at Appraisal 1
1.2 Original Project Development Objective and Global Environmental Objective and Key Indicators 2
1.3 Main Beneficiaries 3
1.4 Original Components 3
1.5 Revised Components 5
1.6 Other Significant Changes 5
2. Key Factors Affecting Implementation and Outcomes 7
2.1 Project Preparation, Design and Quality at Entry 7
2.2 Implementation 8
2.3 Monitoring and Evaluation (M&E) Design, Implementation, and Utilization 12
2.4 Safeguard and Fiduciary Compliance 13
2.5 Post Completion Operation/Next Phase 14
3. Assessment of Outcomes 14
3.1 Relevance of Objectives, Design and Implementation 14
3.2 Achievement of Project Development Objectives 16
3.3 Efficiency 18
3.4 Justification of Overall Outcome Rating 19
3.5 Overarching Themes, Other Outcomes and Impacts 19
3.5 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops 20
4. Assessment of Risk to Development Outcome 21
5. Assessment of Bank and Borrower Performance 22
5.1 Bank Performance 22
5.2 Borrower Performance 23
6. Lessons Learned 24
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners 24
Annex 1. Project Costs and Financing 27
Annex 2. Outputs by Component 28

Annex 3. Economic and Financial Analysis 38
Annex 4. Bank Lending and Implementation Support/Supervision Processes 39
Annex 5. Beneficiary Survey Results 41
Annex 6. Summary of Borrower's ICR and/or Comments on Draft ICR 43
Annex 7. List of Supporting Documents 58
MAP 59

A. Basic Information

Country:	Africa	Project Name:	Eastern Nile Watershed Management Project
Project ID:	P111330	L/C/TF Number(s):	TF-94530,TF-94531,TF-94532,TF-97478
ICR Date:	06/24/2016	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	SUDAN, EGYPT AND ENTRO
Original Total Commitment:	USD 17.23M	Disbursed Amount:	USD 16.52M
Revised Amount:	USD 16.25M		
Environmental Category: B		**Global Focal Area: I**	

Implementing Agencies:
Eastern Nile Technical Regional Office (ENTRO)
Ministry of Water Resources and Irrigation, Egypt
Ministry of Irrigation and Water Resources, Sudan

Cofinanciers and Other External Partners:

B. Key Dates

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	06/24/2008	Effectiveness:	11/09/2009	11/06/2009
Appraisal:	01/16/2009	Restructuring(s):		05/21/2013 12/19/2014
Approval:	04/30/2009	Mid-term Review:	11/12/2012	11/12/2012
		Closing:	12/31/2014	12/31/2015

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Moderately Unsatisfactory
Risk to Global Environment Outcome	Moderate
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance

Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank	Moderately Satisfactory	**Overall Borrower**	Moderately Satisfactory

Performance:		**Performance:**	

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
GEO rating before Closing/Inactive status	Moderately Satisfactory		

D. Sector and Theme Codes		
	Original	**Actual**
Sector Code (as % of total Bank financing)		
Forestry	20	40
General agriculture, fishing and forestry sector	30	60
General water, sanitation and flood protection sector	10	
Public administration- Water, sanitation and flood protection	40	
Theme Code (as % of total Bank financing)		
Environmental policies and institutions	14	30
Land administration and management	15	20
Other rural development	9	
Regional integration	10	
Water resource management	52	50

E. Bank Staff		
Positions	**At ICR**	**At Approval**
Vice President:	Makhtar Diop	Obiageli Katryn Ezekwesili
Country Director:	Ahmadou Moustapha Ndiaye	Kenichi Ohashi
Practice Manager/Manager:	Jonathan S. Kamkwalala	Marjory-Anne Bromhead
Project Team Leader:	Edward Felix Dwumfour	Herbert Acquay
ICR Team Leader:	Edward Felix Dwumfour	
ICR Primary Author:	Berina Uwimbabazi	

F. Results Framework Analysis

Global Environment Objectives (GEO) and Key Indicators(as approved)

The GEOs are to increase the adoption by the Eastern Nile countries of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin, and develop a framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin.

Revised Global Environment Objectives (as approved by original approving authority) and Key Indicators and reasons/justifications

Objectives were not revised

(a) GEO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Increase in the area of degraded agricultural landscape rehabilitated and under sustainable land and water management practices			
Value (quantitative or Qualitative)	0	50,000 - 60,000	40,000	43,718
Date achieved	04/15/2011	05/15/2009	03/18/2013	12/30/2015
Comments (incl. % achievement)	The final target was revised during restructuring (March 18, 2013). Increase in the area of degraded agricultural landscape rehabilitated, 109,3% was achieved (exceeded the final target)			
Indicator 2 :	Adoption by the Ministry of Water Resources and Irrigation (MWRI-Egypt) and the Ministry of Water Resources and Electricity (MWRE-Sudan) of a framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin			
Value (quantitative or Qualitative)	0	1	Not Revised	Partially achieved
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	All the Studies related to this indicator were completed and the framework was developed, but still not adopted by both governments (Egypt and Sudan). In general 90% was the achievement			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Increase in average yields of dominant crops			
Value (quantitative or	Sorghum: 519kg/ha in Dinder	At least 70%	70%	Sorghum: 116% in Dinder

Qualitative)	1249kg/ha in Atbara Sesame: 202kg/ha in Dinder White Beans: (Phasolia) : 887kg/ha in Atbara			146% in Atbara Sesame: 73% in Dinder White Beans: (Phasolia) : 143% in Atbara
Date achieved	04/15/2011	05/15/2009	03/18/2013	12/30/2015
Comments (incl. % achievement)	Increase in the average yields of dominant crops, 119.2% was the achievement (exceeded the final target)			
Indicator 2 :	Number of staff of national and regional institutions responsible for watershed management in the Eastern Nile countries whose technical competency is strengthened.			
Value (quantitative or Qualitative)	0	40	Not revised	40
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	Number of national and international institutions trained staff, responsible for watershed management1(00% was the achievement)			
Indicator 3 :	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.			
Value (quantitative or Qualitative)	0	3	Not Revised	3
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	Number of new information products developed to increase sharing of information on watershed management, 100% was the achievement			
Indicator 4 :	Key sectoral or thematic guidelines for integrated and sustainable development management of the Lake Nasser/Nubia Sub-basin, which would continue the framework that are completed and adopted by the MoWRI, Egypt and MoIWR, Sudan			
Value (quantitative or Qualitative)	0	3	Not Revised	3
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	Sediment extraction & utilization study, Socio-economic survey, and Environmental Sediment extraction &utilization study, Socio-economic survey, and Environmental Survey were all completed. What is lasting is the approval of Environmental Final Report (			
Indicator 5 :	Existence of a functional inter-ministerial coordinating committee or its equivalent (for Egypt and Sudan)			
Value (quantitative or Qualitative)	0	2	Not Revised	2
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. %	Egypt and Sudan jointly enhanced the knowledge base to develop a framework for "integrated and sustainable management" of the land & water resources at Lake Nasser			

achievement)	Nubia Basin, through a Joint Technical Steering Committee with members from MoIWRI & MoWRI.			
Indicator 6 :	Planned project activities are implemented			
Value (quantitative or Qualitative)	0	At least 90%	Not Revised	92
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	The planned project activities were slightly beyond full implementation (102% was the achievement)			
Indicator 7 :	M&E system is strengthened and functional			
Value (quantitative or Qualitative)	0	1	Not Revised	1
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	The M&E system was strengthened and fully functioning (100% was the achievement).			
Indicator 8 :	Systematic use of the Environmental and Social Management Framework to screen proposed micro-project interventions before approval (percentage of micro-projects)			
Value (quantitative or Qualitative)	0	100	None	100
Date achieved	04/15/2011	05/15/2009	05/15/2009	12/30/2015
Comments (incl. % achievement)	Systematic environmental and social Management framework was put in use to screen the proposed micro-projects interventions (100% was the achievement).			

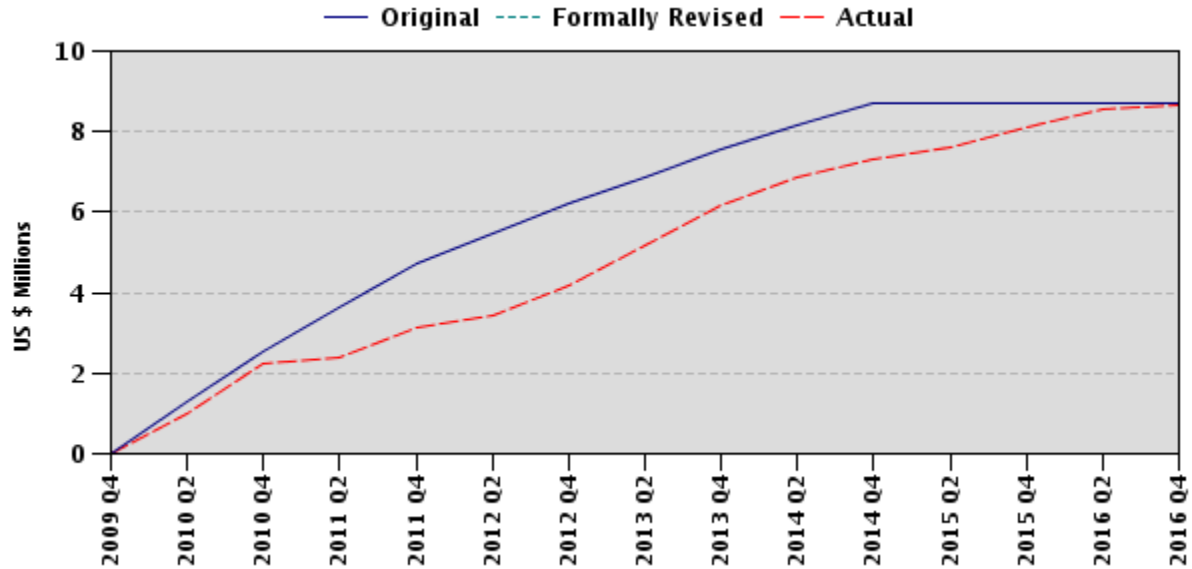
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	GEO	IP	Actual Disbursements (USD millions)
1	12/28/2009	Satisfactory	Satisfactory	1.00
2	06/04/2010	Moderately Satisfactory	Moderately Satisfactory	2.11
3	03/27/2011	Satisfactory	Moderately Satisfactory	2.39
4	12/17/2011	Moderately Satisfactory	Moderately Satisfactory	3.44
5	07/11/2012	Unsatisfactory	Unsatisfactory	4.33
6	03/04/2013	Moderately Satisfactory	Moderately Satisfactory	5.61
7	12/09/2013	Moderately Satisfactory	Moderately Satisfactory	6.81
8	07/06/2014	Moderately Satisfactory	Moderately Satisfactory	7.28
9	12/23/2014	Moderately Satisfactory	Moderately Satisfactory	7.60
10	06/30/2015	Moderately Satisfactory	Moderately Satisfactory	8.09
11	12/28/2015	Moderately Satisfactory	Moderately Satisfactory	8.54

H. Restructuring (if any)

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
05/21/2013	N	MS	MS	6.13	The objectives of the restructuring were to (a) reallocate project funds earmarked for capacity building in the Lau watershed in South Sudan to the conflict-free areas within the Dinder watershed area including the Dinder National Park itself; (b)remove inconsistencies that existed among the various project documents, particularly the Grant Agreement, Minutes of Negotiations, and the Project Appraisal Document (PAD); and (c) revise and align the project cost tables and the formula for apportioning grant funds from the Global Environment Facility (GEF) and the Government of Finland (GoF) as well as Government of Sudan counterpart funds. Some minor changes were made to the results framework targets and wording of some indicators.
12/19/2014	N	MS	MS	7.34	To extend the original closing date for all grants under the Eastern Nile Watershed Management Project (ENWMP) by12 months to December 31, 2015, and reduce the Government of Finland co-financing grant by â‚¬372,561 to pay for additional technical assistance (TA).

I. Disbursement Profile



1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

1. **Background.** The Nile River, the longest river in the world, is shared by 11 riparian states including Burundi, the Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda. The Nile River has historically played a pivotal role in shaping the development, culture, and economies of these riparian states and continues to be an important lifeline for economic and social progress for the largely agrarian populations.

2. The Nile Basin is divided into two sub-basins: the Eastern Nile and the Equatorial Lakes. It comprises a variety of rich, diverse, and important ecosystems, including the savanna ecosystems with the richest grasslands in the world and the Sudd in Southern Sudan, one of the largest wetlands in the world at more than 13,000 km^2 in size. However, the basin is under serious threat from land degradation and related environmental and socioeconomic challenges. These are largely attributed to unsustainable land management practices, including deforestation and overgrazing. Key hotspots in the Eastern Nile Basin to which the project relates include the Ethiopian Highlands, the Blue Nile Basin in Sudan and forest and woodland areas south of Khartoum, and the Atbara. The resultant reduction in agricultural productivity and reduced efficiency of water-based infrastructure like hydropower and irrigation systems are limiting development in the basin. Further, the degraded land area is expected to increase if no remedial action is taken.

Regional and Country-level Strategy

3. The Nile Basin Initiative (NBI) was established in 1999, as an intergovernmental partnership between the riparian states, to address challenges related to the sharing and beneficial use of the Nile in a cooperative manner. The NBI seeks to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common water resources of the Nile, including through the application of Integrated Water Resources Management principles. The NBI's Strategic Action Program comprises two complementary programs: the basin-wide Shared Vision Program to build confidence and capacity across the basin and Subsidiary Action Programs to prepare investments, develop implementation frameworks, and catalyze implementation in the Eastern Nile and Equatorial Lakes Sub-basins.

4. 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. Sustainable land and water resources management is also a priority in the World Bank's Country Assistance Strategy for Egypt, and in 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.

Project Context

5. The Eastern Nile Technical Regional Office (ENTRO) was thus established in 2001, as an office of the NBI, to provide oversight in implementation of the Eastern Nile Subsidiary Action Program (ENSAP) as well as build capacity of Eastern Nile countries that are responsible for integrated water resources development and management. The first set of prioritized and adopted ENSAP investment projects included among others Watershed Management, Eastern Nile Planning Model, Flood Preparedness, and Early Warning.

6. The Eastern Nile Watershed Management Project (ENWMP) was presented as a priority watershed management investment to address the degradation in key hot spots in the Eastern Nile Basin. It was originally envisaged to involve Ethiopia, Egypt, and Sudan, as well as a regional component; however, the Ethiopia portion was accelerated and processed separately because the Government of Ethiopia wanted to incorporate it into the complementary Tana and Beles Integrated Water Resources Development Project.

Rationale for World Bank and Global Environment Facility Assistance

7. The World Bank has supported the countries in the creation and development of 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 investments and capacity-building initiatives arising out of NBI work. This project provided yet another opportunity for the World Bank to build on its support to Nile riparian countries through the NBI.

8. Secondly, the World Bank is giving priority to the sound management of trans-boundary basins in its Africa Action Plan and Regional Integration Department's strategy because of the important role the basins play in supporting accelerated economic growth and poverty alleviation.

9. Finally, the World Bank has extensive global knowledge and experience in watershed management in trans-boundary water bodies which the Eastern Nile countries will benefit from as part of the project.

10. For the Global Environment Facility (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. This operation also contributes to the Program Development Objective of the GEF/TerrAfrica Strategic Investment Program for sustainable land management (SLM) in Sub-Saharan Africa, a multi-agency regional investment program that seeks to finance strategic SLM investment programs. More specifically, the set of actions proposed would contribute directly to the Strategic Investment Program's Intermediate Result 1 on scalingup SLM applications and Intermediate Result 4 on strengthening targeted knowledge management and monitoring systems.

1.2 Original Project Development Objective and Global Environmental Objective and Key Indicators

11. The original project development objective (PDO) and global environmental objective (GEO) was to increase the adoption by the Eastern Nile countries of sustainable land and

water management practices in selected micro-watersheds in the Eastern Nile Basin and develop a framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin. The original objectives were maintained throughout the project despite two restructuring events that involved funds reallocation as a result of the cancellation of some project areas due to the secession of South Sudan, civil strife, and extension of time to accommodate the disbursement freeze.

12. The key performance indicators (KPIs) were:

(a) increase in the area of degraded agricultural landscape rehabilitated and under sustainable land and water management practices; and

(b) adoption by the Ministry of Water Resources and Irrigation (MoWRI-Egypt) and the Ministry of Irrigation and Water Resources (MoIWR-Sudan) of a framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin.

1.3 Main Beneficiaries

13. The Project Appraisal Document (PAD) did not explicitly state beneficiaries but from the project scope and objectives there is a multiplicity of beneficiaries including individuals, communities, country governments and institutions responsible for water resources management, academia, and the international community.

14. Direct beneficiaries included (a) rural communities, including farmers and pastoralists, recipients of subgrant proceeds under the case of Community Watershed Management Project (CWMP); (b) the Sudanese ministry responsible for agriculture, livestock, fisheries, and forestry at the state and locality levels, MoIWR, South Sudanese Ministry of Water Resources and Irrigation, and MoWRI in Egypt from the institutional development in watershed management aspects as well as from improved ecosystem health as a result of project interventions; (c) ENTRO; and (d) national academic and research institutions in Ethiopia, Egypt, South Sudan, and Sudan from the financing provided and capacity development initiatives. The project impact to this category of beneficiaries is anticipated to be long term.

15. Six academia and research institutions in Egypt and one in Sudan were direct beneficiaries from knowledge management and transfer opportunities in the form of training, workshops, exchange visits, actual research, and so on, that the project offered under Component 2. The project was expected to boost the knowledge base of various stakeholders on sustainable watershed and land management as well as direct future research in sustainable environmental management, which was achieved to a large extent.

1.4 Original Components

16. The project originally had two technical components and a third on project management.

Component 1: Community Watershed Management

17. The component activities were expected to be implemented in the sub-watersheds of Lower Atbara, Bau (or Ingessana), Dinder (in Sudan), and Lau (in present South Sudan). This

component was to promote the wider adoption of sustainable land and water management practices and technologies to reduce land degradation and increase agricultural productivity in the hot spot sub-watersheds mentioned above.

Subcomponent 1.1: Natural Resource Management

18. This subcomponent included activities on (a) community capacity building, including strengthening mechanisms for community involvement in natural resource management, developing plans and protocols for sustainable natural resource management, including for the national park in the Dinder sub-watershed, and (b) forest management and/or range management improvement through specialized training, investments in agroforestry and forest establishment on communal lands, mapping of seasonal livestock migration routes, and rehabilitation of rangelands.

Subcomponent 1.2: Sustainable Agriculture

19. This subcomponent included (a) innovations in agriculture, including establishment of demonstration farms, and knowledge and technology transfer to promote adoption of promising innovations; (b) rainwater harvesting for multiple uses; and (c) subgrants to scale up prioritized innovations in agriculture and natural resource management as defined in community natural resource management plans.

Component 2: Knowledge for Cooperative Action

20. The objective of this component was to strengthen the knowledge base and human resources capacity for cooperative action on watershed management in the Eastern Nile Basin. It was expected to be implemented by ENTRO in close collaboration with the Ethiopian Ministry of Water Resources, Irrigation, and Energy, the Egyptian MoWRI, and the Sudanese MoIWR. Project funds focused on two sets of interventions: (a) regional capacity building led by ENTRO, and (b) Lake Nasser/Nubia management jointly implemented by MoWRI and MoIWR. The Ethiopian Ministry of Water Resources, Irrigation, and Energy had earlier received separate grant funds from the GEF and the Finland Ministry of Foreign Affairs (MFA) to implement the Tana/Beles Water Resources Development Project that is closing in 2016.

Subcomponent 2.1: Regional Capacity Building

21. This subcomponent included (a) developing harmonized standards, methods, and protocols for sharing of information on sedimentation and water quality, building on similar work by NBI; (b) developing information products on regional sedimentation trends and water quality and disseminating them among the riparian countries to support decision making in water resources management; and (c) joint training and technical staff exchanges among the three riparian states on innovations and best practices in watershed management, to strengthen cooperation and capacity in watershed management.

Subcomponent 2.2: Lake Nasser/Nubia Management

22. This subcomponent included (a) development of guidelines for integrated and sustainable management of Lake Nasser/Nubia in close collaboration with ongoing work by the Government

of Egypt; (b) tooling, staff capacity development, and defining protocols/guidelines for sediment monitoring in Lake Nasser/Nubia; (c) water quality database maintenance through sediment and water quality surveys on Lake Nasser/Nubia as well as complementary socioeconomic surveys to increase understanding on associated factors and aid the design of future community development and livelihood activities in the Lake Nasser/Nubia Sub-basin; the data collected would be integrated with information management systems being developed by the NBI, specifically the Nile Decision Support System and the Eastern Nile Planning Model; and (d) development of management guidelines to support the integrated management and sustainable use of the resources of Lake Nasser/Nubia with focus on priority sectors such as agriculture, tourism, and fisheries.

1.5 Revised Components

23. Although no revisions were made to project components, the geographical scope of Component 1 was reduced from four to two project areas, because of insecurity within the Bau locality and the fact that the Lau locality became part of South Sudan after the independence of South Sudan. This necessitated the first Level 2 restructuring of the project which was limited to the component implemented by Sudan. In spite of the scaling down of project sites under Component 1, only minor changes were made to outputs/deliverables, which did not affect the PDO.

1.6 Other Significant Changes

24. Original implementation arrangements envisaged an externally contracted project implementation support function for Component 2. However, the project experienced long delays in processing the consultancy contract because it was difficult getting approval from the Eastern Nile Council of Ministers (ENCOM) that was inactive at the time. Implementation arrangements were thus modified with World Bank input to utilize ENTRO's in-house expertise, supported by small consultancies as required. In addition, university partnerships were also developed and an extensive internship program was initiated.

25. The project life was extended to compensate for the delay in the technical assistance (TA) contribution to Sudan by the Government of Finland (GoF), a disbursement freeze of seven months (April–November 2014) arising from the failure of the MoIWR to document and submit withdrawal applications (WAs) to the World Bank under Component 1, and delays in implementing project activities in Egypt as a result of insecurity during the changes in the Government in 2011. In 2015, the World Bank, upon request by all three implementing agencies, provided a no-cost time extension as part of the second Level 2 restructuring.

26. The political environment in Egypt, Sudan, and ENTRO had significantly changed during the implementation phase of the project with the changes in the Government in Egypt, the unforeseen civil strife, especially in the Sudanese states of Blue Nile and South Kordofan, and the secession of South Sudan from Sudan, which significantly affected the smooth takeoff of operations. In addition, out of geopolitical and hydro-political considerations associated with the Nile, Sudan and Egypt had frozen cooperation and collaboration with ENTRO, thus rendering it impossible for ENTRO to embark fully on the planned regional capacity-building activities that would have ensured that technical staff from Ethiopia, Egypt, South Sudan, and Sudan had joint

capacity-building courses, trainings, and exchange visits. In the end, there was the need for redefining the project location and undertaking two Level 2 restructurings during the life of the project.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

27. **Background analysis and synergy.** The design for the ENWMP reflects lessons learned from similar operations implemented in Ethiopia, Egypt, and Sudan, as well as by the ENTRO. The design also incorporated essential features of international best watershed management practices. The main lessons were the need for (a) a shift from single-sector approaches to integrated approaches, (b) country ownership and shared vision, to ensure successful implementation and sustainability, (c) mainstreaming project planning and implementation within country institutions, and (d) participatory planning and implementation to ensure ownership and well-founded priorities. These proved to be key success factors in the project.

28. Both components adopted a participatory approach and have aspects of integration and country ownership as evidenced by counterpart funding from individual governments, stakeholder involvement at all levels, institutional anchorage, and integrated solutions offered under the CWMP.

29. The implementation of, and justification for, the projects were in line with the legal, institutional, policy, and scientific frameworks of the participating countries. This accelerated buy-in and acknowledgement of relevance of the project.

30. **Assessment of project design and risk.** The two technical components of the project are interlinked and directly related to the PDO. Project design addressed financial management capacity risk and key capacity limitations of implementing entities through the capacity-building activities. Further, the focus on innovation positively influenced the outcomes because tested alternatives were provided for and piloted in close collaboration with communities and smallholder farmers. Similarly, the participatory nature of interventions contributed both intended and unintended gains; for example, the beneficiary assessment study reports an over 40 percent improvement in crop yields, doubling of milk production, and gender parity with women's social and financial empowerment as key benefits.

31. **Institutional arrangements.** The implementation was integrated with existing institutional arrangements, notably under the NBI and country-level water resource management institutions with new structures only established at the community level to facilitate monitoring and increase ownership.

32. **Government commitment.** Project design included an options analysis that included country-level projects, which were dropped by the countries in favor of a regional project; however, country commitment, especially for Component 2, was identified as a critical risk. The project includes endorsed country priorities in watershed management as well as significant levels of counterpart funding. Institutionalization of implementation saw continuous country commitment to the project with full disbursement of counterpart funds, which generally contributed greatly to the realization of project deliverables.

33. Even with the political disturbances during the Arab Spring in Egypt, secession of South Sudan from Sudan in 2011, and the escalation of civil strife in Bau (Blue Nile State) and South Kordofan State, the government commitment in Egypt and Sudan was satisfactory. The Government of Sudan refunded funds found not to have been properly documented to the special account grant. Fresh from secession and attaining independence from Sudan, it would have been farfetched to expect South Sudan to implement activities planned for the Lau locality. It should be noted that as a new nation South Sudan was not a member of the GEF and therefore not eligible to administer funds provided by the GEF. CWMP implementation had to be abandoned in the Bau and Lau areas as detailed in box 1.

Box 1. Discontinuation of Bau and Lau Project Sites

Working in the Lau project area (now part of South Sudan) was difficult from the start in 2010 and became almost impossible following the secession of South Sudan in June 2011. Lau, in the now South Sudan, could not be supported remotely from Sudan because of sovereignty and security issues. This problem was further complicated by the fact that South Sudan was not yet a member of the GEF and could therefore not legally administer GEF grant funds.

Similarly, CWMP activities targeting 24 villages in the Bau locality (Blue Nile State) commenced in 2011 with the establishment of a locality implementation unit (LIU). However, following the unrest in the Blue Nile State and South Kordofan in September 2011, the region became very insecure for operations, forcing the team to evacuate and stopping activities within the Bau locality.

In view of the challenges elaborated above, activities could not continue in both Lau and Bau, leading to the reallocation of GEF grant funds to conflict-free project areas. This necessitated the first Level 2 project restructuring.

2.2 Implementation

Factors for Success and Challenges during the Implementation of the ENWMP

34. Some of the key successful factors in project implementation included the following:

(a) **Readiness of implementing agencies.** ENTRO had implemented similar projects and had adequate expertise to implement the project. While the lead implementing agency in Egypt, the Nile Water Sector (NWS), had been involved in the implementation of projects, the MoIWR in Sudan was implementing a watershed management project for the first time. The involvement of all three entities in project design further enhanced readiness.

(b) **Support by the governments.** Eastern Nile countries responded positively to the project. The speedy conclusion of pre-project agreements and fast release of country counterpart funds illustrate this. The countries also publicized the project and thus made it widely accepted by the communities in which the projects would be implemented. Many community-level consultations, especially in Sudan, took place at the design stage.

(c) **Quality control and assurance mechanisms.** Clear administrative and fiduciary procedures existed in the policy and implementation guidelines, including the project implementation manual. The component-level monitoring and evaluation

(M&E) framework also presented a monitoring tool for the project. The project governance structure and implementation team provided control mechanisms that ensured the project was on track and challenges were addressed; progress reviews and implementation support missions as detailed in different reports reiterate this.

(d) **Management action to address challenges.** The project experienced several challenges, as previously noted, which contributed to time lag, low disbursement during the early years of the project, and failure at the end of the project to fully achieve one of the two PDOs. Following these events, management action was prompt in recommending Level 2 restructurings as detailed in box 2.

Box 2. Restructuring of ENWMP components

A Level 2 restructuring of the CWMP was conducted on May 29, 2013. The objectives of the restructuring were to (a) reallocate project funds earmarked for capacity building in the Lau subwatershed in South Sudan to the conflict-free areas within the Dinder subwatershed area, including the Dinder National Park; (b) remove inconsistencies that existed among the various project documents, particularly the Grant Agreement, Minutes of Negotiations, and the PAD; (c) revise and align the project's cost tables and the formula for apportioning grant funds from the GEF and the GoF as well as Government of Sudan counterpart funds: and (d) revise the results framework to reflect the results indicator changes.

At the request of the Governments of Egypt and Sudan and ENTRO, a second Level 2 restructuring was done for the whole ENWMP in December 2014. This involved extending the original closing date for all grants by 12 months to December 31, 2015, and reducing the GoF cofinancing grant by €372,561 to pay for additional TA. This extension was needed to allow completion of outstanding activities, several of which were as a result of the backlog due to suspension of disbursement of funds under the component implemented by Sudan because of failure to document and submit WAs to the World Bank and the revised activities arising from the first restructuring.

(e) **Early problem detection.** ENWMP Implementation Status and Results Reports indicate a history of documentation of delays and impediments to project implementation as well as the various proactive measures taken to find the related solutions, such as the already highlighted case of civil strife in parts of Sudan that called for reduction in the number of project areas.

(f) **Capacity development of implementing parties.** The participatory nature of the project pegs success to the capacity of implementing entities. The project involved several capacity-building activities, notably (i) community empowerment under the CWMP to appreciate benefits of proper watershed management with resultant improvements in livelihood and land cover; (ii) skills development of country staff in sediment and water quality analysis, which contributed to the results under the Lake Nasser/Nubia management component; (iii) enhancing institutional capacity (for example, High Aswan Dam Authority, Water Resources Research Institute, Nasser Lake Development Authority, Nile Research Institute, and so on) through collaborating and cooperating with several research institutions and academia in implementation of the project, even outsourcing certain activities; and (iv) strengthening institutional capacities to undertake and implement donor-funded projects in Sudan.

35. The above factors notwithstanding, the project experienced the following challenges:

(a) **Complexity of interventions needed for uptake of new approaches.** The project presented new approaches in watershed management, including integrated trans-boundary components, which partners, including the project staff and communities, took a considerable time to appreciate. This cost the project time and effort to implement the planned activities.

(b) **Limited project time.** The unique nature of the project, involving new technologies and approaches to watershed management, cross learning, and knowledge/experience sharing coupled with the geographically vast operational area, very limited culture of communication, and the required behavioral change on natural resources management practices, required continuous engagement and much more time than was provided for in the project to realize sustainable results. In addition, the delayed conclusion of implementation arrangements under Component 2 presented a tight implementation schedule.

(c) **Harsh operating conditions.** The harsh natural conditions and the remoteness of project areas with the characteristic poor transport infrastructure hampered work, in particular, in Sudan. Project staff working in very remote areas within the Lower Atbara sub-watershed faced long distance driving under very harsh weather conditions, where temperatures could soar to 50°C. Also, some villages inside the Dinder National Park and Kadalo were inaccessible and are often closed annually for about five months during the rainy season, thus hampering monitoring and timely service delivery under Component 1.

(d) **Civil strife.** In 2011, the national forces of Sudan engaged with remnants of Sudan People's Liberation Army (SPLA) forces in the states of South Kordofan and the Blue Nile resulting in a military engagement that led to a large movement of migrants from these states to other parts of Sudan. The project office at Bau, located within the Blue Nile State, was affected by this and had to be evacuated to Khartoum. In addition, a travel ban was placed, preventing travel to these states, which made it impossible for the project to operate in the Bau sub-watershed or for project staff to visit project sites. As a result, management agreed in July 2011 to suspend implementation of project activities in the Bau sub-watershed, but provided the Government of Sudan with a cutoff date of July 1, 2013, by which date it was expected the Government would have lifted the travel ban to allow project activities to be implemented within the sub-watershed. When the Government of Sudan failed to lift the ban at the cutoff date, management approved the cancellation of all operations within the Bau sub-watershed. In Egypt, while the Arab Spring that engulfed a number of Arab countries was devastating to Egypt's readiness to implement the activities under the project, the civil strife affected project staff as changes were made at the helm of the implementing ministry and agency, which affected implementation and oversight, as meetings of the Joint Technical Steering Committee that had representation from Sudan and ENTRO could not be arranged. Also, scientific missions to Lake Nasser/Nubia that were critical for collecting data for the formulation of the framework for integrated and sustainable management of

the Lake Nasser/Nubia Sub-basin had to be suspended until calm returned to Egypt, years after the uprising.

(e) **Limited availability of critical data/information.** Sometimes limitations in availability and access to country-specific data constrained the realization of Component 2 deliverables. The project utilized modern high-resolution global data sources, university partnerships, and internships to fill critical knowledge gaps.

(f) **Disbursement freeze.** The adverse challenges associated with the sudden suspension of disbursements experienced by the project during April–November 2014 led to a temporary and partial discontinuation of CWMP activities for many months. This created an engagement gap with the communities, requiring resources and extra effort to re-engage, culminating in a delay for the overall ENWMP.

2.3 Monitoring and Evaluation (M&E) Design, Implementation, and Utilization

36. **M&E design.** The M&E system aimed at (a) assessing implementation performance in relation to the expected project outcomes, outputs, and budget; (b) proactively identifying implementation challenges and taking corrective actions on time; and (c) documenting lessons learned and incorporating them into decision making on project implementation and sustainability. The design of the M&E system was built on the existing systems in the lead implementing agencies, the MoWRI in Egypt, the MoIWR in Sudan, and the ENTRO in Addis Ababa.

37. Generally, the goal and specific objectives of the ENWMP were in line with the World Bank's code of practice for such watershed projects. However, the objectives only looked at quantifiable aspects; they did not capture benefits associated with improved watershed management that are difficult to monetize because of methodological reasons. Such benefits include a variety of ecological services such as improving soil formation and the nutrient cycle; water regulation and purification and microclimate regulation; and religious, recreational, aesthetic, educational, and cultural benefits.

38. Adequate indicators and data collection methods were defined for each objective and expected outcome, as contained in the results monitoring framework contained in the PAD. Regular updates were made to these indicators. However, the indicator on adoption of the Lake Nasser/Nubia Management framework (LNNMF) which was critical to PDO attainment should have been redefined, as the declining cooperation became fairly evident and should have been considered during the second restructuring.

39. **M&E implementation.** Component-specific frameworks were developed with regular data collection undertaken; for example, baseline data at the community level and routine sediment load and water quality on Lake Nasser/Nubia. However, field data collection systems were complicated because of major difficulties related to low literacy levels at the community level, communication barriers, remoteness, and inaccessibility, especially during the rainy season in Sudan. Data collection was augmented by the end-of-project beneficiary assessment carried out for the two components and the knowledge product on community watershed management (CWM) guidelines prepared by ENTRO. Regular biannual implementation support missions

were held with the World Bank team; these highlighted project performance, gaps, and improvement measures.

40. **M&E utilization.** Community and institutional capacity building is anticipated to continue post-project. For example, the Village Development Committees (VDCs), established as part of the CWMP, are expected to sustain the investment through regular monitoring and oversight. Similarly, the tooling and capacity development of in-country staff are anticipated to sustain data collection efforts to be augmented by improved research to support decision making related to water resources management and development. However, the M&E systems for continuous evaluation of project gains will need to be explicitly defined and or institutionalized.

2.4 Safeguard and Fiduciary Compliance

Safeguards

41. The ENWMP had adequate safeguards to ensure safety of the environment. The project was expected to mainly have positive environmental and social impacts. The potential negative effects from the CWM activities were provided for in the Environmental and Social Management Framework. The project was classified as Environmental Category B, based on its potential for limited small-scale environmental impacts from the development of agriculture and rehabilitation of few infrastructure. Notifications relating to the safeguard policy on Projects on International Waterways (OP/BP 7.50) were also made to riparian countries with no unfavorable response received by the deadline provided.

42. During implementation, safeguards focal point persons were appointed under the CWMP at all implementation levels and provided necessary training and orientation on safeguards. These assisted in safeguard compliance and developing the necessary protocols for project activities, notably the inclusion of safeguard requirements in the development of community plans.

43. Implementation of environmental and social safeguards requirements was satisfactory despite few shortcomings because of limited capacity during the early years of project implementation.

Financial Management

44. The PAD found the implementing agencies lacking in terms of financial management mainly because (a) they had no experience with the World Bank financial policies and management (case for NWS of MoWRI [Egypt] and MoIWR [Sudan]); (b) they used a manual accounting system that was error prone; and (c) they lacked external audits that met required international audit standards. The ENWMP financial management was generally satisfactory.

45. The concerned agencies submitted unaudited quarterly reports and audited annual reports within the required time limits. The only major challenge experienced in financial management was when the CWMP did not document and submit WAs in 2014, which eventually led to a temporary halt in funding.

46. The good financial management and reporting mechanism can be attributed to use of accounting software in place of the hectic manual accounting system, hiring of skilled accountants and auditors, and project staff trainings on financial management.

Procurement

47. Generally the implementing agencies satisfactorily complied with the World Bank's procurement policies. In few cases, the implementing agencies exhibited weaknesses during contracting of service providers and purchase of goods. However, such weaknesses, including delays in contracting due to bureaucratic government procedures and inspection/approval of delivered goods, did not significantly affect project implementation.

2.5 Post Completion Operation/Next Phase

48. The ENWMP represents one of the first set of seven priority investment projects approved by the ENCOM, under the ENSAP. This fact alludes to the importance of and implies country commitment to ensure sustainability of the project results and knowledge acquired. Although not adopted yet by MoWRI, the framework for integrated and sustainable watershed management of the Lake Nasser Nubia sub-basin is a good guide for training experts in the management of the basin. Similarly, the Community Watershed Guidelines prepared for Sudan will be great source material for adoption, penetration, and scale-up of watershed management in Sudan. Technical capacity that is built in watershed management both at the community level and within implementing agencies will continue to be relevant for watershed management in the region. In Sudan, new watershed management projects such as the US$8.35 million Sustainable Natural Resources Management Project have taken lessons learnt from the CWMP and are implementing them in the same localities as the CWMP or in adjacent localities to the ones that benefited from the CWMP. The MoIWR has initiated the process of establishing a separate department under it to be responsible for leading watershed management. This will spur sustainability, as budgets will be made available and staff deployed to the new department.

49. The project facilitated strong partnerships with academic institutions in the Eastern Nile countries, especially in Egypt, that have helped improve research efficiency and availability of credible information. The tooling and capacity development of in-country staff are anticipated to sustain data collection efforts to be augmented by improved research to support decision making related to water resources management and development.

50. The main intended beneficiaries of the project—local communities—are more likely to sustain project gains because they relate to direct environmental and economic challenges they face. Success stories from the CWMP of improved incomes at the household (HH) level and crop yields reiterate this and provide a strong incentive to sustain these outcomes.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

Rating: High

51. The project reflects the key needs of the riparian countries with the PDO responding to the major challenge of degradation and related environment threats in the region. The pilot

CWMP addresses the critical contribution of watersheds to the efficacy and sustainability of water-based infrastructure such as hydropower dams and irrigation as well as livelihood enhancement, a priority for project countries. The scalability of this pilot is promising with a number of donor-funded initiatives being undertaken in Sudan, South Sudan, Egypt, and Ethiopia, many of which are incorporating lessons from this project. Knowledge products and institutional development arising from the regional cooperative component are being used by the NBI and integrated in the designs of the next round of watershed management projects through the Nile Cooperation for Results Project (NCORE).

52. Guidelines and principles developed under the project are of continued relevance to both the riparian governments and the World Bank, as these could be used in the implementation of related projects elsewhere in future. For example, those related to CWM, surface water quality analysis, and beneficial water allocation and use are important for scaling up soil and water conservation (SWC) measures within broader landscapes.

53. Project objectives and outcomes remain relevant to all project partners. Environment, knowledge, innovation, and scientific research are key pillars for sustainable development in the Eastern Nile countries. World Bank country support reiterates this; the Egypt Country Partnership Framework 2015–19 contains specific objectives on improved agricultural productivity, improved sanitation, and strengthening citizen engagement in service delivery, and the Sudan Interim Strategy Note 2015 has social inclusion and natural resources management as focal areas. Additionally, land degradation, biodiversity, and international waters continue to be GEF focal areas as defined in the 'GEF-6 programming directions' document covering the period July 1, 2014, to June 30, 2018.

54. The project design made significant effort to align project components and activities with the PDO and to lay out a sound result framework. The PDO objective "to increase the adoption by the Eastern Nile Countries of sustainable land and water management practices in selected micro-watersheds in the Eastern Nile Basin and develop a framework for integrated and sustainable management of the Lake Nasser/Nubia sub-basin" was directly supported by Component 1 (Community Watershed Management) and Component 2 (Knowledge for Cooperative Action). Component 3 ensured overall project implementation and management. The result framework made a sound articulation between intermediate and project outcome indicators and the development objectives, with the exception of the ambitious indicator related to the 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. Intermediate outcomes were clearly stated and causal chain to objectives convincingly established as indicated in the PAD and the subsequent restructuring. For example, the increase in the average yields of dominant crops (sorghum, sesame and white beans) directly contributed to the increased adoption of sustainable land and water management practices.

Relevance of Design and implementation:
Rating: Substantial

55. Overall, the project design was consistent with its development objectives, leading to the expected outcomes, though certain outputs were not achieved due to unavoidable circumstances,

such as the change in political cooperation of partner countries not only among themselves but also with ENTRO, civil strife in Egypt and Sudan, and so on. Initially project implementation under the CWMP tended to overestimate the transferability of approaches and technologies from elsewhere as well as the capacity and experience available, which translated into slower than anticipated progress.

56. Implementation arrangements were very clear and defined in project documents. The implementing agencies in this project had previously implemented projects of a similar nature albeit with limited experience with the World Bank's financial management policies. Capacity building was a key project component that facilitated attainment of project deliverables by equipping project partners with necessary knowledge and skills.

57. The design for the project also reflected lessons learned from previous and ongoing land and water resources management interventions in Egypt and Sudan and international best practices. It also incorporated 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 Egypt, Ethiopia, and Sudan.

3.2 Achievement of Project Development Objectives

58. The project set out to achieve two PDOs, each of which had two KPIs. An assessment of the level of achievement of the PDOs is detailed in table 1.

Table 1. Assessment of the Level of Achievement of the PDOs

PDO	Evaluation of Achievement
To increase adoption of sustainable land and water management practices in agricultural landscapes	Achievement of this PDO can be rated as Substantial. The project achieved the intention to pilot/test, develop, and demonstrate appropriate approaches and methodologies for community-based watershed management in Sudan and exceeded both the anticipated targets for indicators related to this objective. A total area of 43,718 ha was reported as rehabilitated out of the target 40,000 ha agreed at the first restructuring, of which: (a) 19,710 ha were under improved agriculture; (b) 17, 828 ha were under improved rangeland; and (c) 6,180 ha were under improved communal forest land. • 24,000 ha of land put under sustainable grazing and forest systems • 108,290 ha of forest/rangeland protected from fire hazards by establishing fire belts • Yields of the three dominant crops promoted (sorghum, sesame and white bean) increased significantly, greatly exceeding the 70 percent target especially for sorghum and white bean for which yields increased by over 110 percent • Diversification of crops and introduction of citrus fruits, alfalfa, and date palm as cash crop into cropping systems resulting in higher incomes for farmers • Daily milk yield doubled from 3 L to 6 L • Seven different types of water harvesting structures constructed/rehabilitated and used by communities; overall, 187 water

	harvesting structures constructed/rehabilitated • 143 ha put under dry season small-scale irrigation • 42 institutions collaborating and cooperating in the implementation of the project • 146 capacity-building programs implemented under the CWMP; 16 regional and national training and 8 exchange visits organized and carried out by ENTRO • ENTRO led the development of two documentary films—'Inheritance to Our Descendants' and 'Window of Hope'—and prepared 17 thematic field manuals • Over 400 professionals trained and provided with practical skills for designing and management of watershed development projects • 173 (84 VDCs, 6 Community Watershed Teams and 39 SWCs) community-based organizations established • 18,133 HHs adopted new agricultural/livestock techniques • 2,308 HHs increased income from subgrant projects. • Guidelines on CWM in Sudan developed • Resolution of tension between resident communities and Dinder National Park Management Authority In spite of the several achievements made by the project, a split evaluation was conducted given that this outcome target was revised during restructuring. Hence, even though the project met the revised target, it did not meet the original target. Thus, a rating of Substantial has been given.
Adoption by the MoWRI, Egypt and the MoIWR, Sudan of a framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin.	ENTRO carried out a comprehensive assessment of ongoing sediment and water quality monitoring and prepared guidelines for harmonizing standards and methods of data collection and quality checks. This will feed into a future framework The project developed and implemented guidelines/protocols related to water quality monitoring for Lake Nasser/Nubia, particularly on sediment monitoring, the key challenge on the lake and completed several assessments related to development of the framework including the lake bottom profiling, a sediment extraction and utilization study, a socioeconomic survey, and an environmental survey. The resultant framework for integrated and sustainable management of the Lake Nasser/Nubia Sub-basin was completed close to the end of the project lifetime and adopted by Egypt, but not by Sudan, because of geopolitical and hydro-political tensions between Egypt and Sudan. Thus, this indicator was not fully achieved. However, with almost all the products related to this indicator in place, including the formulation of the framework itself, coupled with commitment by one partner (Egypt), a rating of Modest may be justified. This framework is yet to be used by any of the countries on a wide scale.

59. The project achieved significant outputs on all components, although a few of the originally planned activities were not implemented due to several factors, including (a) bureaucracy in procurement processing within implementing entities that caused delays; (b) unexplained non-cooperation by Sudan that led to its withdrawal from the Lake Nasser/Nubia Management Project and thus a partial achievement of the indicator related to the adoption of the framework for integrated and sustainable management of the LNN Sub-basin; (c) suspension of funding for the CWMP by the World Bank due to improper financial record management of WAs; (d) escalation of civil strife that led to suspension of projects in certain locations and

consequent withdrawal of staff from there; and (e) withdrawal of technical staff financed under the GoF TA contribution to the CWMP that resulted in certain technical disciplines being unattended to.

3.3 Efficiency

Rating: Substantial

60. **Efficiency.** To assess the efficiency of the project, a robust cost-based assessment would have to be done for the different parts of the project, which was not possible because reliable data on the expenditure against the different outcomes and outputs as well as benefits accrued over time in the project were not available. A mainly qualitative assessment is therefore made.

Economic and Financial Analysis

61. The original economic and financial analysis on this project, as defined in the PAD, only related to the benefits from the CWMP with acknowledgement of the difficulty in quantifying benefits related to ecosystem services. The PAD envisaged benefits related to improved crop yields and incomes from engagement in crop and livestock farming. Site-specific farm models were developed to quantity these benefits and estimate the financial and economic feasibility of the improved agronomic practices.

62. In the absence of the original models and inputs used, for example, crop prices and production, this qualitative analysis used (a) two of the original assumptions as proxies, one on anticipated yield improvements (50–200 percent) and the other on the proposed farm models (annex 3) and (b) a qualitative assessment based on reported financial benefits.

63. Increases in crop yields are within the anticipated range at 73–146 percent, assuming all original factors at project inception. In addition, the subgrant and beneficiary assessments indicate significant increases in community incomes. For example, crop and livestock sales shot up because of project activities and areas apart from the Dinder area recorded reduction in livestock sales; however, this may be attributable to a shift to crop farming given that Dinder comprises a large protected area (Dinder National Park) and given the appreciable increase in crop sales at 134 percent.

64. If the farm models were implemented according to PAD provisions, then the envisaged financial and economic efficiency from the project can be taken to hold. The reported community income enhancement and improved standard of living also imply that the project was economically and financially viable. The subgrant assessment recorded 3 and 10 times the nominal return on investment from the subgrant for beans and sorghum production, respectively in lower Atbara, in addition to improvements in nutrition, access to health services, diversity of income sources, and school enrolment.

65. Some factors appear to indicate that there were constraints on the efficient use of resources. The delays in procurement, particularly at the start of the project, led to delays in implementation and difficulties in synchronization of related activities. The delays in procurement and strategy development at the start meant that staff were not effectively engaged in implementation until later. The difficulty to get reliable monitoring and accounts data quickly was a constraint on effective management and decision making. The suspension of funding for

much of 2014 indicates the poor data management and transparency of the accounting system at that time. Although the overall time frame was extended by one year, the project lost almost a year in start-up delays and the suspension of funding for much of 2014, slightly affecting administrative efficiency.

66. The above issues notwithstanding, a number of other factors seem to indicate that the project used its resources relatively efficiently. The project achieved almost all of its planned targets within the overall budget. The project was able to employ key TA staff and this greatly helped to maintain continuity and competency. The project managed to prepare progress reports on a regular basis. The project did collect and could generate fairly detailed data on the implementation of activities, although the data management system was cumbersome. The project was generally able to take appropriate corrective action and resolved most of the weaknesses and shortcomings as these were identified.

67. Based on the above factors, it is clear that there were significant shortcomings in efficiency in the first years of the project. However, it's important to note that the project and its staff greatly improved their capacity and competence during implementation over time and were able to eventually resolve most of the issues. Given that almost all project targets were achieved within the budget, the overall efficiency of the project is therefore considered to have been Substantial.

3.4 Justification of Overall Outcome Rating

Rating: Moderately Unsatisfactory

68. Given the (i) *High* relevance of objectives and *Substantial* relevance of design/implementation; (ii) *Substantial* achievement on 'increase adoption of sustainable land and water management practices' and *Modest* achievement on 'adoption of a framework for integrated and sustainable management of Lake Nasser/Nubia sub-basin (due to adoption by Egypt but not by Sudan); and (iii) *Substantial* efficiency, the overall outcome rating is *Moderately Unsatisfactory*.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

69. The project's impact in these areas was expected to be both indirect and direct, because activities implemented consisted of capacity building, including knowledge enhancement through targeted training and the implementation of small-scale natural resources management investments. For example the application of physical SWC has positively increased crops yield, and there is evidence showing that areas cultivated and production of all crops has increased significantly. This is besides diversification of crops. This has contributed significantly to the enhanced income level, food security and improved nutritional status, increased HH economic assets, and a general revitalization of local economy.

70. The participation of women in both the capacity-building activities and the pilot investments also contributed greatly to strengthening gender relations. In Sudan, the CWMP approach that made participation of women in the VDC an obligatory exercise resulted in progressive participation of women in consultations and capacity-building activities. Although

the targeted communities were very conservative and sensitive about the domain of women being domestic, they started to accept and realize the significance of women's participation in public life to the extent that they started to allow women to move to other areas on exchange visits to other VDCs—a pattern of behavior not expected to happen until the very recent past.

(b) Institutional Change/Strengthening

71. The project significantly invested in institutional strengthening and capacity building of all key implementing agencies as well as participating communities. These activities were undertaken at both the regional level through ENTRO and at the national level through the individual national subprojects. Some key achievements include the training of over 400 professionals from the four countries (Egypt, Ethiopia, Sudan, and South Sudan) in different thematic areas such as designing and management of watershed development projects. This contributed to enhancing the technical capacity of institutions involved in watershed management to undertake effective planning and M&E of the respective watershed management interventions. Capacity-building programs for communities helped to establish and strengthen local extension services at the village level.

3.5 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

72. Key findings from the beneficiary assessment relate to positive effects of the CWMP, including livelihood enhancement and women empowerment. Box 3 presents a case that summarizes these benefits.

4. Assessment of Risk to Development Outcome

Box 3. Spreading Knowledge Gained from the Project

There is widespread evidence that agricultural practices taught by CWMP trainers to the locals in specific villages and implementation units became used/adopted by farmers in other villages where the project never reached. Such practices included:

- Better land preparation methods
- Use of improved varieties of sorghum and bean seeds
- Crop diversification and introduction of cash crops such as alfalfa, date palm, and citrus
- SWC measures such as composting, mulching, crop rotations, and river bank erosion control
- Small-scale irrigation

The CWMP deliberately targeted women groups and has been able to empower them to take charge of their own development. Traditionally in Sudan, land tenure and management is the responsibility of men, however, as part of project activities, forest land in the Dinder subwatershed was leased out free by the Forest National Corporation (FNC) to women groups for cultivation. These groups were also trained in forest management and expected to act as stewards of the forest resource. Nora Mohammed, a member of the UmDepaa women group, testifies to the benefits from such agricultural activities.

Similarly, Mrs. Um El Nass of Um Bagara Sharig village in Sinnar state, a beneficiary of the animal production subgrants, was able to increase her animal stock after three years, buy land, and diversify to crop production. She has realized income from sorghum and groundnut sales, in addition to supplying groundnut seeds free to other women in her village. Women have been empowered, their livelihood significantly improved, and community perceptions on the role of women changed.

Training women

Crop field

In addition, knowledge products development as part of the regional knowledge for cooperative action component have increased appreciation and are being used by the NBI and integrated as part of project planning, as is the case of the NCORE.

Rating: Modest

73. Most of the development outcomes were achieved. The project produced benefits that can be broadly categorized into livelihood improvement, knowledge enhancement, and environmental/climate sustenance. Stakeholder involvement in all components, through for example, direct participation in trainings run by the implementing agencies and CWM activities, accelerated buy-in and, thus, there is a high likelihood of continuation and sustainability of activities post ENWMP.

74. Experience gained from this project has placed the region in a much better position to work cooperatively on water resources development and management and better understand the regional implications of proposed water-related investments so that more informed decisions can be made. It is also anticipated that with increased capacity in watershed management and related

activities, existing regional bodies in the riparian countries like ENSAP/NBI are now capable of running such activities on their own.

75. The only uncertainty/risk to the continuation of ENWMP activities is whether or not the riparian governments will continue to finance the activities and if the financing will be sufficient.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

Rating: Moderately Satisfactory

76. The project design and objectives; (i) addressed an important development need that was in line with World Bank and Eastern Nile country priorities, as evidenced by the strong commitment from the highest levels of all parties; and (ii) reflected lessons learned from prior similar operations implemented in Ethiopia, Egypt and Sudan, as well as by the ENTRO, and incorporated essential features of international best practices in watershed management. In addition, the activities were a mix between analytical work and capacity building, and included a strong element of stakeholder communication and consultation. All of these were needed to realize the project's objective. To ensure achievement of the project objectives, the Bank team maintained strong engagement with country counterparts and development partners during all stages of the partnership from project preparation to conclusion including adequate consultations particularly with partner countries. This will ensure that lessons from the project inform future initiatives especially with regard to promoting best practices in natural resources/watershed management and project management.

(b) Quality of Supervision

Rating: Moderately Satisfactory

77. Regular supervision and technical support ensured proper project implementation. Biannual implementation support missions, including field visits, despite the harsh and difficult conditions, as well as the TA, provided the necessary expertise and capacity building that helped to harness project implementation. The timely release of funds enabled efficient running of the project without financial constraints. In addition, the proactivity of the World Bank team in seeking solutions to implementation challenges, such as the project restructuring undertaken to change project areas due to civil strife in parts of Sudan and the intensive prior and continuous capacity development undertaken to strengthen the capacity of implementing agencies, is commended.

78. The risk associated with cooperation not only between project countries (Sudan and Egypt) but also with ENTRO was not envisioned. The sudden change in cooperation between Sudan and Egypt led to Sudan not endorsing the framework document for integrated and sustainable management of the LNN that the two countries had jointly prepared, and thus not achieving the GEO. Possibly the second restructuring could have considered modification of the GEO to allow for more realistic and tangible commitments and thus project performance.

79. Delayed project implementation (for the CWMP component) attributed to, among others, a disbursement freeze by the World Bank of many months (related to earlier fiduciary

weaknesses), which consequently resulted in a restructuring and project time extension of one year. In addition, the second level restructuring in the CWMP implied a change in some key staffing, which resulted in implementation delays because new staff had to acquaint themselves with project systems and processes.

(c) Justification of Rating for Overall Bank Performance
Rating: Moderately Satisfactory

80. The above challenges notwithstanding, World Bank performance is Moderately Satisfactory, given the adequate project design, quality supervision, proactivity (halting temporarily disbursement and carrying out two restructurings), and support provided to ensure high levels of project outputs

5.2 Borrower Performance
(a) Government Performance
Rating: Moderately Satisfactory

81. Partner governments were actively involved in project design and expressed high levels of commitment affirmed by the significant levels of counterpart financing for project activities for which contributions were fully provided as planned. Strong project publicity, especially by Sudan, under the CWMP to create community awareness and promote stakeholder involvement and buy-in, contributed to the success of this project component

82. The institutionalization of project implementation structures at the highest levels of the Government indicates acceptability of the project. The Governments ensured availability of personnel to support project activities. In spite of this undoubted commitment and support to project implementation, the unexplained cessation of cooperation by Sudan in the implementation of the Lake Nasser/Nubia management subcomponent later in the project was a blow to regional cooperation around the Eastern Nile which resulted in one major KPI not being fully achieved. The non-adoption by Sudan of the framework for integrated and sustainable watershed management for the LNN sub-basin that was jointly prepared by Egypt and Sudan has greatly affected the overall project rating.

(b) Implementing Agency or Agencies Performance
Rating: Moderately Satisfactory

83. Line ministries and institutions (MoIWR of Sudan, MoWRI of Egypt, and ENTRO) were dedicated to quality implementation of the projects with oversight provided by ENCOM. This was achieved through the appointment of technically competent staff who were available to oversee the running of the projects and participating in capacity-building activities such as training. In addition, partnerships were created with key institutions such as universities and research institutions to ensure efficient and effective project implementation.

84. An efficient reporting system existed that quickly generated daily, weekly, monthly, and quarterly reports for submission to the key stakeholders and the World Bank.

(c) Justification of Rating for Overall Borrower Performance
Rating: Moderately Satisfactory

85. Government performance is rated as Moderately Satisfactory largely because Sudan did not adopt the framework for integrated and sustainable management of Lake Nasser/Nubia, whose adoption by both Sudan and Egypt would have constituted a great achievement, as this would have been critical to attainment of the second indicator at the GEO/PDO level.

6. Lessons Learned

86. While project design was built on lessons from similar experience, implementation of the ENWMP also provides some useful learning such as the following.

87. Regional cooperation and thus implementation of regional development projects, still remains a challenge as has been noted under this project as well as with other NBI interventions. Interventions in this context have to adequately plan for these activities, allow for high levels of flexibility, and build upon existing gains, as in the case of community benefits from the CWMP, to accelerate and/or incentivize any cooperative arrangements. The regional capacity development component experienced several delays related to harmonizing country expert schedules.

88. Stakeholder engagement and participation is a key to integrated water resources management and economic development as well as a determinant of success of related activities like watershed management. Successes on the project are largely associated with the high levels of stakeholder involvement in all project stages. For example, benefits from the CWMP are attributed to community buy-in and inclusion; similarly, products under the knowledge management component were a result of stakeholder involvement, including research undertaking specific studies and academic institutions working closely with technical staff within MoIWR and MoWRI in data collection and development of protocols. The World Bank and partner governments have also acknowledged this fact and the current Country Partnership Strategy and country development strategies have social inclusion as a key pillar.

89. The academia and research are a useful resource in promoting knowledge management and skills development, which contribute immensely to ensuring sustainability and diverse knowledge development. Partnerships developed with universities and special research institutions, especially in Egypt, were instrumental in building the knowledge base on watershed management and water utilization as well as for skills development through internships. Building on this experience, the NBI is now supporting academic partnerships and internships benefiting all countries of the Nile Basin.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

90. Sudan's MoIWR advised as follows:

(a) Revise actual disbursement figures

(b) Rating for summary/outcomes should be elevated from Moderately Satisfactory (MS) to Satisfactory (S)

(c) The civil strife in 2011 took place in South Kordofan and not North Kordofan

(d) The suspension of disbursement to the Sudan CWMP was due to the failure of the MoIWR to document and submit WAs to the World Bank

91. Egypt's MoWRI sent no comments.

92. ENTRO appreciated the comprehensiveness of the Implementation Completion and Results Report (ICR) and gave the following comments:

(a) **Achievements of PDO level results.** It is helpful to indicate the achievement of PDO level results clearly to see the big picture attributed to the project. However, since the result indicators, baseline, and target information are not included with the actual performance, it is difficult to conclude if the actual performance presented in the report is according to the plan or behind or above the plan.

(b) **Achievements of the outcome-level results.** Regarding the outcome level performance of the project, it is reported in a better way (annex 2) incorporating the comments raised in point (a) above. However, the target column is not completed for most of Component 2 result indicators that did not allow comparison of the planned outcome target with the actual performance.

(c) **Unintended results of the project.** In any project intervention, actual results mostly **include** both intended/planned results and unintended/unplanned results. Unintended results can be positive or negative depending on the context of the project environment. The ICR only captures the performance of planned results. Thus, to capture the comprehensive picture of the project contribution, it is commendable to include unintended results of the project, if any.

(d) **Measuring efficiency of the project.** In the ICR, only qualitative assessment is made to measure the efficiency of the project. Both costs/inputs and outputs/benefits of the project have to be measured in quantitative/monetary terms, instead of doing it in qualitative description.

(e) **Conclusion and recommendations:** Next to lessons learned, it is helpful to include a section on the conclusion of the report and recommendations associated with the lessons learned at various stages of the project lifetime.

(f) **Establishment of ENTRO.** In the ICR, the date for the establishment of ENTRO was given as 2001. This is incorrect. ENTRO was established in 2002.

(b) Finland Ministry of Foreign Affairs (MFA

93. The MFA congratulated the task team for completing the CWMP component and practically achieving nearly all the objectives and outcomes. It submitted the following comments:

(g) We find it very positive that the objectives, project design, efficiency of using the resources, as well as the general implementation process have been found relevant, despite some of the challenges the project has faced during its implementation.

Similarly, we are pleased to hear that the overall project performance of this component has been satisfactory.

(h) To ensure long-term relevance and the sustainability of the project, the MFA would like to strongly encourage the Government of Sudan and the MoIWR to study and adopt the lessons learned and particularly the recommendations of the Project Completion Report (PCR). This is utterly important for the long-term sustainability of the project achievements.

(i) The Finnish MFA has only one question related to the Financial Report Table: According to this table, the expenditure for the Finnish MFA contribution of US$9,210,000 for the CWMP component has been 115 percent higher than the actual available funds. Could you kindly clarify these figures?

(j) Related to this, on annex 1 of the ICR the Finnish MFA financing for the CWMP component has been US$13 million (appraisal estimate), and the actual/latest estimate has been US$12.30 million. Could you kindly clarify these figures?

(k) Finally, and related to the previous point (and as pointed out in our earlier communication), the MFA would like to request clarification regarding the actual disbursement rate regarding the Finnish MFA contribution. According to the latest Aid Memoire Financial Management notes there were still US$738,314.79 of undisbursed funds remaining for the Finland grant at the time of the project closing mission. Could you kindly advise us whether the project eventually managed to draw down/disburse 100 percent of the signed grant? In case there are any undisbursed funds remaining we would request the World Bank to return those in a due course.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US$, millions equivalent) (from Client Connection on 06/20/2016)

Components	Appraisal Estimate (US$, millions)	Actual/Latest Estimate (US$, millions)
The Lake Nasser/Nubia Management Component/Project (GEF TF-94530)	2.70	2.70
The Regional Capacity Building Component/Project – RCBP (GEF TF-94531)	2.00	2.00
The Sudan Community Watershed Management Component/Project – CWMP (GEF TF-94532)	4.00	4.00
The Sudan Community Watershed Management Component/Project – CWMP (GoF Co-financing grant TF-97478)	7.55 (equivalent €6.52 million)[a]	7.85
Total Baseline Cost	**16.25**	16.55
Physical Contingencies	0.00	
Price Contingencies	0.00	
Total Project Costs	16.25[b]	16.55

Note: a. Upon request from the Government of Sudan, the cofinancing contribution from GoF was reduced by €0.37 million to augment the TA component financed through a GoF parallel financing to Sudan for ENWMP. The GoF provided an additional €2.3 million in parallel financing to Sudan for TA under the ENWMP.
b. Amount does not include recipient contributions (US$3.88 million from Sudan and US$0.2 million from Egypt).

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (US$, millions)	Actual/Latest Estimate (US$, millions)	Percentage of Appraisal
Borrower		13.70[a]	4.08[b]	
GEF		8.70	8.70	
Single Purpose Trust Fund		0.00	0.00	
GoF		7.55	7.85	

Note: a. This amount includes US$13.5 million from Sudan and US$0.2 million from Egypt. The contribution by Sudan was revised downwards to US$3.88 million during the first Level 2 restructuring that took place under the project.
b. This amount is the sum if actual contributions by Sudan and Egypt (US$3.88 million and US$0.2 million), respectively.

Annex 2. Outputs by Component

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
Component 1: CWMP					
Enhanced institutional and organizational capacity for efficient planning and implementing of CWM	Number of capacity building programs implemented	0	280	146	Target achievement was moderate. Of 146 trainings: • 80 training events and 1,718 person trainings (18 percent) were provided for technical staff from state government institutions as well as project staff; and • 66 training events and 7,714 person trainings (33 percent) were provided for community organizations and farmers.
	Development and publishing of CWM Guidelines	0	1	1	In December 2015, CWMP published a 180-page CWM Guidelines. The formulation of the CWM Guidelines benefited from the 84 CWM Plans[1] that were developed for the 84 villages the project operated in
	Creation of harmony between communities living in the DNP and Park Authorities	Hostility	Co-management/administration	Co-management/administration	A major breakthrough achieved by eliminating hostilities and conflict between 10 communities living in and around the DNP and the Park Authority. Communities are permitted to engage in livelihood activities within a 5 km radius of the village
	Number of relevant institutions actively participating in project implementation	0	42	42	Target was fully achieved (100 percent). The project worked with a total of 42 offices from 16 different local government institutions or agencies

[1] A CWM Plan combined a Participatory Land Use Plan and a Community Action Plan for a community/village. In all, 84 CWMPs were developed.

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
	Community-based organizations that are operational and representative of target population	0	192	173	A total of 84 VDCs in 84 villages, 6 CWTs, 39 SWC Teams, 26 Women's Groups, and 18 Water User Associations were formed and fully operational during the project
Increased land under sustainable grazing and forest systems.	Area of degraded forest/range land rehabilitated	0	21,966 ha	24,008 ha	Target was fully achieved (109 percent). A total area of 24,008 ha of which: 17,828 ha was of open rangeland rehabilitated (mostly using silvo-pastoral approach); and 6,180 ha of community forests and FNC forest land was rehabilitated
	Area of forest/rangeland protected from fire/sand dune hazards	0	98,000 ha	108,290 ha	Target was fully achieved (111 percent). 108,290 ha of DNP was protected against fire by establishing and maintaining 4 firebreaks with a total length of 221 km. About 9 ha of land was protected against sand dune encroachment in Atbara through stabilization with grass and checkerboard methods. Also, 80 ha of forest was protected with the establishment of two windbreaks of total length 4 km
Improved agricultural and livestock systems and practices being adopted	Increased yield of dominant crops per unit area	0	70%	**Sorghum:** Average yield of participating farmers increased to 1,121 kg/ha in Dinder and to 3,069 kg/ha in Atbara **Sesame:** Average yield of participating farmers increased by 350 kg/ha in Dinder **White Beans:**	Target was fully achieved and exceeded. Results present a three-year analysis for the period 2012–2014. Daily milk production increased from 3 L to 6 L

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
				Average yield (2012, 2013, 2014) of participating farmers increased by to 2,154 kg/ha in Atbara.	
	Number of HHs adopting new agricultural/livestock techniques/practices in the selected watersheds	0	16,000 HHs	18,133 HHs	Target was fully achieved. 18,133 HHs started using/adopted new agricultural practices. This includes 15,468 for improved crop seeds and crop husbandry, 2,080 for improved fruit tree seedlings and 585 for improved animal production practices. This number, however, includes some double counting since HHs engaged in one or more activities
	Area utilized by improved agriculture practices	0	18,034 ha	19,710 ha	Target was fully achieved (109%). Of the estimated 19,710 ha with various new/improved agricultural practices, 17,374 ha had improved seeds and crop/land husbandry practices, and 2,336 ha had fruit-tree seedling-based agroforestry
Increased use of efficient water harvesting and related SWC technologies	Types of water harvesting structures implemented	0	7	7	Target was fully achieved (100%). Seven different types of water harvesting structures were used. These were: roof-water harvesting, hafirs, mayas, boreholes, hand pumps, shallow wells (matayas), and flood water diversion inlets (sagayats)
	Number of water harvesting structures implemented	0	96	187	Target fully achieved and exceeded (195%). Of the 187 different water harvesting structures constructed or rehabilitated there were: Roof water harvesting 5; hafirs 9; mayas 2; floodwater inlets (sagayat) 2; boreholes 25; shallow wells ('Mataya') 48; and hand pumps 96
	Increased land (ha)	0	170 ha	143 ha	Target was moderately achieved (84%).

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
	under dry season small-scale irrigation by source/type of irrigation				Of the 143 ha under different types of irrigation: 134.5 ha was under surface irrigation pumped from the boreholes or wells; 2.5 ha under surface irrigation pumped from the river; and 6 ha under drip irrigation pumped from the boreholes or river
	Increased land (ha) treated with (water harvesting) SWC practices and techniques	0	10,000 ha	11,468 ha	Target was fully achieved. Of the total 11,468 ha: 10,257 ha had different physical SWC measures; with 477 ha on agricultural land, 9,040 ha on rangeland, and 740 ha on forest land; 1,211 ha had additional agricultural/crop land with deep tillage SWC measures such as chisel or deep disc ploughing.
The 'Sub-Grant' (Village Fund) system is working and supporting investment in improved income-generating opportunities	Number of HHs with income increased from subgrant projects	0	2,074 HHs	2,308 HHs	Target was fully achieved (111%). A total of 2,308 HHs (29%) have so far benefited from subgrants, including 800 (30%) who benefited from funds recycled by the VDCs. It is expected that the majority of beneficiaries have increased their income.
Source of Data	PAD	PAD	PAD	M&E report and PCR	
Subcomponent 2.1: Regional Capacity Building					
Regional and national training	Number of trainings undertaken	0		16 (2 were regional trainings involving participants from Egypt, Ethiopia, Sudan, and South Sudan)	These trainings covered the following thematic areas: integrated watershed management, strategic environmental assessment and environmental impact assessment, gully mapping and rehabilitation, design and construction of drainage control structures, results and process-based M&E for watershed

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
					projects, SWC, design and construction of bench terracing, water harvesting and utilization, nursery management, geographic information system and remote sensing application, social and environmental management conflict transformation. Out of the total participation by 390 only 36 (9.3%) were females and 354 (90.7%) were disproportionately males
Regional and national workshops	Number of regional and national workshops undertaken/no. of participants			5/102	These workshops focused on climate change and watershed management; watershed management and conflict transformation; social safeguard and conflict management; environmental and social sustainability/safeguards; scaling-up best practices and approaches for watershed management; and so on. 102 participants benefitted from the workshops, and 18 of this number were females, representing about 17% of participants
International experience sharing and knowledge exchanges	Number of exchange visits	0		8	These visits were to share experiences in watershed management, SWC, and water harvesting. Countries visited included China (2 times), Ethiopia (3 times), India (1 time), Rwanda (1 time) and Tanzania (1 time). In all, 141 participants took part in the exchanges with only 10 (7%) of them being females
Design of regional sediment and water quality monitoring framework	A framework for regional sediment and water quality monitoring	0	1	2	A basin-wide comprehensive assessment of ongoing sediment and water quality monitoring was carried out as a first step to designing the framework. During the assessment, the existing situation was reviewed, gaps

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
					were identified, and follow-up activities proposed. Guidelines for harmonizing standards and methods of data collection and quality check has been prepared. The framework and guidelines have been consulted upon at a two-day workshop that was attended by participants from ENTRO, Ethiopia, Sudan, and South Sudan, but avoided by Egypt. With the validation workshops done, the reports were deemed completed
Produce documentary film for the Eastern Nile countries	Number of documentary films produced	0	1	2	The first documentary film titled 'Inheritance to our Descendants' focuses on the experience of implementation of watershed management pilot work in Ethiopia, while the second one, 'Window of Hope', captures the experiences in watershed management in Sudan under Component 1 of the ENWMP. The films can be assessed on the ENTRO website
Prepare field guides, manuals, and study visits reports	Number of thematic field manuals prepared	0		17	Field guides and manuals were prepared on several aspects of watershed management to assist professionals and non-professionals in the planning and implementation of watershed management activities (technologies and approaches)
Initiate additional complementary activities	Number of complementary activities undertaken	0	1	2	One regional training in project preparation was organized for 22 participants drawn from Ethiopia, Sudan, and South Sudan. Using its own resources, ENTRO supported the preparation of investment proposals under NCORE

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
Subcomponent 2.2: Lake Nasser/Nubia Management Framework					
Initiate capacity building for domestic institutions	Number of institutions receiving capacity building	0		7	Six in Egypt and one in Sudan. NWS, Nile Research Institute, Higher Aswan Dam Authority, Water Resources Research Institute, Nasser Lake Development Authority, and the Sudanese MoIWR
Thematic training courses offered	Number of training courses offered	0		15	Training included: fundamentals in surveying, hydrographic surveying, sediment study and database management, M&E, English language, report writing, development of modeling techniques for windblown sand, sedimentation modeling, financial management and procurement, application of various monitoring instruments for measurements in the LNN. On a scale of 1–6, with 1 being unsatisfactory and 6 being very satisfactory, 12 out of the 15 trainings received a rating above 5 (satisfactory) from participants
Trainings provided	Number of persons trained	0		183	31% females and 69% males. 65% of participants were at engineers' level and 35% at administrative level. A perception survey carried out revealed that capacity building enhanced the knowledge base of institutions and participants, leading to successful implementation of activities under the subcomponent
Joint scientific missions on the LNN	Number of joint scientific missions on the LNN	0		6	In addition to the six scientific missions carried out, one mission was carried out into the khors of Kalabsha and Alaqi. This was a first time achievement. Measurements during missions included water flow, turbidity, water content and quality analysis, sedimentation, and so

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
					on. A breakthrough when for the first time a sub-bottom profiler was used during the scientific missions, allowing also for the first time a complete map of LNN bottom to be plotted
Development of an integrated data base for LNN	No. of database established	0	1	1	Database for all scientific datasets taken during the six scientific missions installed at NWS, Nile Research Institute, and Higher Aswan Dam Authority. The institutions are interconnected via modem and can share data freely. Datasets have been extremely useful for the development of the framework for integrated and sustainable management of LNN
Studies carried out	Number of studies carried out	0	3	3	1. Socioeconomic survey of communities living close to the LNN was carried out. 750 HHs made up of 450 HHs in urban communities around the Lake and 330 HHs in rural set-ups were sampled. 2. Preliminary studies on ways to extract and utilize sediments from the Lake have also been carried out. The extrapolations from data collected during the various scientific missions revealed the following: (a) the most suitable method would be through dredging with pipeline transport technique using a 450 m^3 hydraulic cutter head; (b) optimum location for dredging would be the area around Wadi Halfa in Sudan, between 335 km and 357 km from the Aswan Dam; (c) no adverse impacts on water quality are expected from the dredging; and (d) extracted sediment could be used

Outcome	Outcome Indicator	Baseline	Target by End of Project	Actual Target Achieved	Comments
					primarily for land reclamation and as natural fertilizer. 3. Environmental studies to assess biophysical characteristics (water quality, fauna and flora, biodiversity) of the LNN environment (on land and in water) were carried out. The revelation of large infestations with crocodiles and large numbers of migratory birds, some of which have become sedentary in Wadi Alaqi, may deserve special attention for tourism
Establishment of a functional inter-ministerial coordinating committee or its equivalent (for Sudan and Egypt)	No. of committees established	0	1	1	This committee was established immediately the ENWMP became effective. It met several times (about seven times) until in 2013 when Sudan froze relations with Egypt with respect to the implementation of subcomponent 2.2
Preparation of a framework for integrated and sustainable management of LNN Sub-basin	Framework report	0	Completed	Completed and adopted	The framework was prepared using data and information gathered during the implementation of the ENWMP. The documents was consulted upon widely in Egypt, but not in Sudan. Apart from the technical issues that the report highlighted, it also recommended the setting up of an LNN Joint Commission and an LNN Technical Advisory Committee. The framework report was endorsed by Egypt, but Sudan declined to endorse not because of quality concerns but because of frostiness of relations at the political level between Egypt and Sudan.

Annex 3. Economic and Financial Analysis

1. The original economic and financial analysis on this project as defined in the PAD only related to the benefits from the CWMP with acknowledgement of the difficulty in quantifying benefits related to ecosystem services. The PAD envisaged benefits related to improved crop yields and incomes from engagement in crops and livestock farming. Site-specific farm models were developed to quantify these benefits and estimate the financial and economic feasibility of the improved agronomic practices.

2. In the absence of the original models and inputs used for example crop prices and production, this qualitative analysis will use (a) two of the original assumptions as proxies, one on anticipated yield improvements (50–200 percent) and the other on the proposed farm models (see tables 3.1 and 3.2) and (b) a qualitative assessment based on reported financial benefits. Increases in crop yields are within the anticipated range at 73–146 percent, assuming all original factors at project inception. In addition, the subgrant and beneficiary assessments indicate significant increases in community incomes. For example, crop and livestock sales shot up because of project activities in all areas apart from the Dinder area, which recorded reduction in livestock sales; however, this may be attributable to a shift to crop farming given that Dinder comprises a large protected area (Dinder National Park).

Table 3.1. Key Project Benefits

Measure	Location	Before	After	% change	Information Source
Income (SDG)	Dinder	2,605	2,861	10	Subgrant assessment
	L Atbara	2,526	6,887	173	Subgrant assessment
Crop sales (SDG)	Dinder	7,523	17,594	134	Beneficiary assessment
	L Atbara	12,461	22,223	78	Beneficiary assessment
Livestock sales (SDG)	Dinder	6,282	5,578	-11	Beneficiary assessment
	L Atbara	10,096	15,484	53	Beneficiary assessment
Crop yield - Sorghum (Kg/ha)	Dinder	519	1,121	116	CWMP PCR
	L Atbara	1249	3,069	146	CWMP PCR
Crop yield - Sesame (Kg/ha)	Dinder	202	350	73	CWMP PCR
	L Atbara	n.a.	n.a.	n.a.	n.a.
Crop yield - white beans (Kg/ha)	Dinder	n.a.	n.a.	n.a.	n.a.
	L Atbara	887	2,154	143	CWMP PCR

Table 3.2. Site-specific Farm models at Project design

Lower Atbara	**Model 1 - Improved irrigated farm:** 5 feddans for each farmer would 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.
	Model 2 - Depression and wadi cultivation: 10 feddans for each farmer would be distributed as follows: 7 feddans sorghum, 3 feddans cowpea, 10 sheep, and 20 goats.
Dinder National Park	**Model 1 (Rahad Locality) - Improved irrigated farm:** 5 feddans for each farmer would 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.
	Model 2 (Magano Village), Improved rainfed farming: 3 feddans for each farmer would be distributed as follows: 2 feddans sorghum, 0.5 feddan, watermelon, 0.5 feddan cucumber

	l onion, 15 sheep, and 20 goats

3. If the farm models were implemented as per PAD provisions, then the envisaged financial and economic efficiency from the project can be taken to hold. The reported community income enhancement and improved standard of living also imply that the project was economically and financially viable. The subgrant assessment recorded 3 and 10 times the nominal return on investment from the subgrant for beans and sorghum production, respectively, in Lower Atbara in addition to improvements in nutrition, access to health services, diversity of income sources, and school enrolment.

4. Some factors appear to indicate that there were constraints on the efficient use of resources. The delays in procurement, particularly at the start of the project, led to delays in implementation and difficulties in synchronization of related activities. The delays in procurement and strategy development at the start meant that staff were not effectively engaged in implementation until later. The difficulty to get reliable monitoring and accounts data quickly was a constraint on effective management and decision making. The suspension of funding for much of 2014 indicates the poor data management and transparency of the accounting system at that time. Although the overall time frame was extended by one year, the project lost almost a year in startup delays and the suspension of funding for much of 2014, slightly affecting administrative efficiency.

5. The above issues notwithstanding, a number of other factors seem to indicate that the project used its resources relatively efficiently. The project achieved almost all of its planned targets within the overall budget. The project was able to employ key TA staff and this greatly helped to maintain continuity and competency. The project managed to prepare progress reports on a regular basis. The project did collect and could generate fairly detailed data on the implementation of activities, although the data management system was cumbersome. The project was generally able to take appropriate corrective action and resolved most of the weaknesses and shortcomings of the project as these were identified.

6. Based on the above factors, it is clear that there were significant shortcomings in efficiency in the first years of the project. However, it is important to note that the project and its staff greatly improved their capacity and competence during implementation over time and were able to eventually resolve most of the issues. Given that almost all project targets were achieved within the budget, the overall efficiency of the project is therefore considered to have been substantial.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team Members

Names	Title	Unit	Responsibility/Specialty
Lending			
Supervision/ICR			
Mohamed Yahia Ahmed Said Abd El Karim	Senior financial management specialist	GGO23	—
Tafesse Freminatos Abrham	Consultant	GGODR	—

Yesmeana N. Butler	Program assistant	GEN01	—
Antonio J. Cittati	Consultant	GEEDR	—
Marie Bernadette Darang	Information assistant	GEN07	—
Edward Felix Dwumfour	Senior environmental specialist	GEN01	—
Akram Abd El-Aziz Hussein El-Shorbagi	Senior financial management specialist	GGO24	—
Wael Ahmed Elshabrawy	Financial management analyst	GGO23	—
Salimata D. Follea	Natural resources management specialist	GEN07	—
Abdelmonem Osman Kardash	Environmental specialist	AFTN1 - HIS	—
Mikael Sehul Mengesha	Senior procurement specialist	MNAPC - HIS	—
Donald Herrings Mphande	Lead financial management specialist	GGO31	—
Etienne NKoa	Senior financial management specialist	AFTME - HIS	—

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of Staff Weeks	US$, thousands (including Travel and Consultant Costs)
Lending		
Total:		0.00
Supervision/ICR		
Total:		0.00

Annex 5. Beneficiary Survey Results

1. The overall objective of the beneficiary assessment is to assess and explain the main impacts of the project on the lasting changes in lives of the targeted beneficiaries, and the extent to which the project has caused or contributed to these changes, positive or negative, and intended or unintended.

2. The assessment was based on a consultative participatory methodology that put the beneficiaries at the center of the analysis process and used methods involving several data. Sampling covered a total of 543 HHs across 30 villages in Dinder and Lower Atbara. In the area of natural resource management, project interventions included rehabilitation of forest and rangelands and capacity building for natural resource management which involved (a) training: establishment, and training of local extension agents at villages level; (b) farm field days: demarcation and rehabilitation of livestock routes; (c) national and regional learning routes intended to provide exposure to successful experiences in natural resource management and community mobilization and organization; (d) training on compost making to reduce utilization of chemical fertilizers; and (d) on-the-job training for counterpart staff and VDCs members and local extension agents.

3. Under the component of sustainable agriculture, a wide range of interventions were implemented, including introduction and application of physical SWC techniques, provision of improved seeds, demonstration farms, provision of subgrants, water harvesting, and rehabilitation and construction of water sources.

4. The project has been associated with a wide range of positive intended and unintended socioeconomic changes as well as behavioral changes. Application of physical SWC has positively increased crops yield. Empirical evidence shows that areas cultivated and production of all crops has increased significantly. This is besides diversification of crops. This has contributed significantly to an enhanced income level, food security and improved nutritional status, increased HH economic assets, and a general revitalization of local economy. The increased engagement in market economy through increased sales of surplus produces was also documented.

5. Plantation of fodder associated with the introduction of SWC was described as an important positive directional change. The impacts of subgrants were particularly useful for women and have resulted in enormous positive changes including transforming women from housewives to economically productive agents, promoting entrepreneurship among women, increasing exposure of women to the outside world, enhancing income for women and therefore their contribution to the HH economy, changing mindsets of women from being purely receptive to initiators of change, improving the nutritional and health status of women, particularly pregnant and lactating women, and contributing to the rise of women's status to leadership of VDCs, therefore contributing to enhancing their voice and their political position at the community level.

6. The enormous investment in social capital development through community organization, training, learning routes, and demonstration farms field days proved to be an important approach to social change. Aspects of enhanced sense of social solidarity, cooperation, and collaboration,

have been established. Entrepreneurship skills established among both women and men who were targeted contributed significantly to feelings of self-respect and self-realization. Women in particular expressed the changes of becoming more independent and active agents in the community.

7. The CWMP approach that made participation of women in the VDC an obligatory exercise has resulted in progressive strengthening of gender relations. Although the targeted communities were very conservative and sensitive about the domain of women being domestic, they started to accept and realize the significance of women participation in public life to the extent that they started to allow women to move to other areas on exchange visits to other VDCs, a pattern of behavior not expected to happen until recently.

8. Project interventions have been associated with a wide range of unintended impacts and social changes including population stability, enhanced exposure of community to the external world, increased economic value of land, enhanced access to land, improved employability, reduced burden on women, strengthened purchasing power at the HH level, and enhanced resilience to fluctuations in food availability.

9. Minimization of resource-based conflicts associated with the comprehensive approach adopted and which involve the two processes of route demarcation and rehabilitation could be described as one of the most remarkable changes instituted by the project.

10. The question of how to sustain such a process of change is a big challenge. Field investigations show that a wide range of opportunities for sustainability have been in place including the capacity-building and social capital development investments, the wide range of social and economic benefits gained by communities, relevance of the intervention to government policies and development frameworks, the increased demand for services created, investment in community organization, and the increasing tendency towards cooperation and collaboration.

11. The project faced enormous challenges to fully lead and sustain the intended process of change. Important among these challenges were: (a) the watershed management approach as a new rural development complex and time demanding approach; (b) the vast operational area with its characteristic poor infrastructure of roads and transport; (c) the non-supportive national- and state-level frameworks for natural resource management; (d) the suspension of the project in 2014; (e) the independence of the Republic of South Sudan in 2011 and the associated range of insecurities and conflict drivers, particularly in Blue Nile State; and (f) the dependency syndrome associated with the long history of humanitarian aid in some locations and inaccessibility to some areas which are cut off for five months during the rainy season, hampering monitoring and delivery of needed services on time.

12. The project however demonstrated certain strengths and weaknesses. Apparent among the strengths is: (a) the introduction of a physical SWC which demonstrates strong and appropriate approach to address land degradation and rural poverty; (b) harmonized interventions with the priorities of the Government of Sudan; (c) investment in social capital development as an important input for implementation of the project as well as an important potential input for sustainability; the support to women and their social and economic empowerment; and (d) the

opportunities availed to a wide range of Government institutions and structures to engage with the project and to gain capacity building or exposure to external cross-learning processes.

13. Major weaknesses of the project involve: (a) the short lifetime of the project considering the level of social and environmental problems to be addressed and the vast geographical expanse of areas to cover; (b) the very limited culture of communication, cross-learning, and knowledge/experience sharing with similar projects dealing with the same issues of land degradation; (c) implementing nearly the same interventions and operating partly in the same locations (the two IFAD -The International Fund for Agricultural Development - projects of supporting smallholders in Sinnar State and integrated rural development in the Butana and Lower Atbara areas); and (d) the very limited input of social sciences in the project, considering the fact that land degradation is necessarily a societal problem and that natural resources are by definition social constructs.

14. The assessment provided a number of recommendations, important among which were focused targeting of pastoralists as a social system suffering a complex web of limiting factors, including very limited social capital development interventions and severely affected by the independence of the Republic of South Sudan and also as active actors in peace and war. Continuation of the project and sources of funding are to be solicited and attracted by the Governments of the relevant states.

15. There is an urgent need for the consolidation and scaling up of the implemented interventions and achieved results; community structures and VDCs remain fragile and therefore need to be further strengthened. There is also a need to concretely and legally link local extension agents to higher levels of governance.

Annex 6. Summary of Borrower's ICR and/or Comments on Draft ICR

1. Three separate PCRs were prepared by each of the project implementing entities in Egypt, Ethiopia (ENTRO), and Sudan. Outlined below are summaries of each of the three PCRs.

The Community Watershed Management Sub-Project In Sudan:

2. The PCR for the Community Watershed Management Project (CWMP) was carried out in Sudan from 2010 to 2015. The CWMP was the Sudan Component (SC) of the ENWMP. The ENWMP was one of the first "fast track" watershed investment projects prepared under the NBI.

3. The **underlying motivation** for the CWMP was to develop, test and demonstrate CWM as an appropriate and effective way to develop and manage the watersheds of the rive Nile basin for the benefit of the communities and the watershed environment and eventually. This was therefore something of a pilot to be scaled up.

4. The specific **development objectives** of the CWMP were to Increase the adoption of, and land area with, sustainable land and water management (SLWM) practices. Thereby increase the productivity of agricultural (crop), livestock and forestry production systems.

5. The CWMP was **financed** through US$3.88 million from the Government of Sudan, US$4 million from the GEF and EUR 9.25 million from the GoF, of which EUR 2.67 million

was for a separate project to provide the TA needed. The Government of Sudan also provided an in-kind contribution estimated at US$13.2 million. The lead "**Executing Agency**" was the World Bank (WB) while the lead "**Implementing Agency**" was the MoIWR.

6. The project worked in two different **agro ecological zones** (originally four but two were dropped) in the lower Atbara area (River Nile State), and the area around the Dinder National Park (Sinnar, Gedarif and Blue Nile States). The project worked in a highly participatory way with **multiple stakeholders** at national, State, Locality and community levels. The project was **implemented and managed** through a National Project Coordination Unit and LIUs for each of the two zones. The project was **supervised at the strategic level** by a national and two LIU Steering Committees with representation from the main stakeholders.

Main Achievements:

Capacity building and planning for CWM:

7. The CWMP developed the approach, methodologies, procedures and tools for CWM, and implemented these in the communities and watersheds in the Dinder and Lower Atbara areas. These were documented and described in a 180 page CWM Guidelines published in December 2015.

8. The project built the technical capacity of the government counterpart staff from collaborating ministries as well as the project and TA staff, such that they achieved satisfactory competence in CWM and related fields that were completely new to them at the start. This involved a total of 1,718 person trainings and probably more importantly, a huge amount of on - the job- learning with mentoring from the international and national TA. This covered a total of 48 counterpart posts from government ministries for agriculture, livestock, forestry, and so on. This greatly improved the capacity of the individuals concerned and through this, their home ministries or organisations. The project worked with a total of 42 different state and local institutions.

9. The project worked in a total of 84 villages with a total population of around 140,000 people (19,200 HHs). The project was successful in helping all these villages to establish a VDC and develop and implement their own CWM plan. The project provided considerable training of community organisations and individual farmers and pastoralists (7,801 person-trainings as well as "learning-by-doing") to build their capacity for implementation.

10. The project supported communities with the implementation of their CWM plans at two levels or scales; (a) at the village / watershed level, and (b) at the level of HHs or smallholder farms.

Forest and range resources management:

11. At the village / watershed scale, the project supported rehabilitation and improved management of large areas of open range and forest land. This included the communal grazing and forest land within the village boundaries as well as the large open range areas beyond villages that are used by the nomadic and seminomadic pastoralists. This also included the DNP

area which is a special case of forest / wildlife grazing land that is a crucial component of the larger watershed.

12. The underlying strategy was to improve the health of the forest and range land and its vegetation cover, in order to reduce land degradation, water loss and sedimentation, and thereby improve the productivity of the forest and range land, and the livelihoods of local communities.

13. A total of **6,189 ha of community forest and reserved FNC forest land** was rehabilitated. Trees were also used to support riverbank erosion protection (a 3 ha pilot), sand dune fixation (9 ha) and shelterbelts (4 km).

14. A total of **17,828 ha of rangeland** was rehabilitated. This included over 12,000 ha of mostly open rangeland rehabilitated as part of a complete intervention package to establish "**livestock routes"** for the safe passage of nomadic livestock herds. The work on Livestock routes included negotiated approval, demarcation, mapping, and rehabilitation of the range and construction or rehabilitation of water points (hafirs and boreholes). This has been of considerable benefit for livestock herders, as well as the DNP and local communities (much reduced encroachment and conflict).

15. The rehabilitated rangeland also included over 3,000 ha of **open rangeland** in Atbara and over 2,000 ha of **communal village grazing land**. Rehabilitation of rangeland included reseeding with fodder species and trees in a silvo-pastoral approach, as well as physical SWC measures for water harvesting.

16. The work to improve **watershed management in the DNP** focused on improving dialogue and collaboration between the park and communities, and in particular, on the realisation of a previously proposed "buffer zone" to accommodate the 10 villages with the park boundaries. The project also supported protection of the natural park vegetation through firebreaks (221 km in length and protecting 108,290 ha) and lookout towers, and the restoration of two wetland "mayas". The combined effect of these various interventions has been to transform the relationship between the park authorities and local communities and bring about a win - win situation based on trust and collaboration.

Improved agricultural and livestock systems and practice:

17. The community and watershed level work was complemented by a number of interventions aimed at adoption of improved SLWM practices by individual or small groups of HHs / farmers / pastoralists, in order to improve the sustainable use of natural resources and productivity (and livelihoods). This involved strengthening the capacity of extension services and development and promotion of a number of improved agricultural, livestock and farm forestry technologies.

18. **Extension services** were strengthened through the development of extension packages and supporting leaflets, building the capacity of extensions staff of the collaborating departments, and initiating a system of voluntary "Village Extension Workers" or VEWs (on limited scale) that worked in liaison with the VDCs. While the capacity of government staff increased considerably, the departments themselves remain seriously resource constrained. The VEWs proved useful but need a stronger institutional framework for long term sustainability.

19. The main **agricultural technology / intervention packages** promoted included; (a) development and demonstration of an improved crop and land husbandry package that included improved seed, planting rate, deep chisel, and so on, ploughing, and physical SWC; (b) wide distribution and promotion of improved crop seeds with the crop / land husbandry package; (c) village "seed banks"; (d) SWC promotion through Sub-Grants; (e) irrigated intensive crop and horticulture production (with some Sub-Grant support) and (f) wide distribution of fruit tree seedlings.

20. The main **animal husbandry and livestock productivity intervention packages** promoted included; (a) improved fodder production: demos (with some Sub-Grant support); (b) sheep production through Sub-Grants; (c) honey production through Sub-Grants; and (d) general extension campaigns and follow-up visits for livestock productivity.

21. The project found that farmers who adopted the recommended packages had **increased the yield of their main corps** beyond the targets. Sorghum yield increased by 116 percent and 146 percent in Dinder and Atbara respectively, while Sesame yield (Dinder) increased by 73 percent and white beans (Atbara) by 143 percent.

22. A total of 18,133 HHs (113 percent of target) were estimated to have started **using or adopted new agricultural practices**, including 15,468 for improved crop seeds and crop / land husbandry, 2,080 for improved fruit tree seedlings and 585 for improved animal production practices. The area covered was estimated at 19,710 ha (109 percent of target).

Water harvesting:

23. The SLWM measures implemented on the rehabilitated range, forest and agricultural land as described above included physical conservation measures for water harvesting (different types of bunds or ditches, and so on) on a total of 10,257 ha (113 percent of target), with 477 ha on agricultural land, 9,040 ha on range land, and 740 ha on forest land.

24. In order to reinforce the improved watershed health and gain community benefit from this, the project supported the construction or rehabilitation of a seven different **types of water harvesting structures** (100 percent of target), being roof-water harvesting, hafirs, mayas, boreholes, hand pumps, shallow wells (matayas), and flood water diversion inlets (sagayats). A total of 187 different water harvesting structures were constructed or rehabilitated (195 percent of target).

25. To gain further benefit from the watershed water resources, an additional 143 ha of land was put under different types of irrigation.

"Sub-Grant" support:

26. A modest amount of credit and grant funding was provided to small groups or individual HHs to promote and speed up adoption of improved land and water management practices, and improve the productivity, livelihoods and income of community members and smallholder farmers. This was done through a system of Sub-Grants provided to communities for management through the VDCs.

27. A total of 1,508 HHs (28 percent F) were supported directly by the project with start-up investment for different packages for crop, livestock or honey production. Around one quarter of the VDCs managed to collect repayments from the first round of funding and recycled this to an additional 800 HHs (30 percent F). The interventions supported are as described above.

Cross cutting issues:

28. The CWMP mainstreamed **gender equality** into all aspects of planning, implementation, decision making and assessment. The imposition of this approach as a requirement for participation, in combination with Sub-Grant funding that targeted women's groups, had a very strong impact on the participation and status of women, particularly in some very conservative communities in lower Atbara.

29. Although the project did not have an explicit focus on climate change, it's potential for impacting on climate change through mitigation and adaptation was recognised and appreciated.

Project Performance:

30. **Relevance**: The project was considered to have been **highly relevant** in its objectives, design, and in the very participatory way in which it was implemented. The **design** at project start-up however tended to overestimate the transferability of approaches and technologies from elsewhere as well as the capacity and experience available, and to underestimate the difficulties of implementation in the widely dispersed and difficult-to-access project areas selected. A number of concepts and approaches (such as community participation, watershed management, SWC, multi-disciplinary teams, and so on) were almost completely new at the start and it took time for the project to get moving.

31. **Efficiency**: There were therefore significant shortcomings in **efficiency** (economy in use of resources) during the first years of the project. The project and its staff greatly improved their capacity and competence during implementation however and were able eventually to resolve most of the issues. The project achieved almost all its targets within the budget, and overall efficiency of the project was considered to have been substantial.

32. **Effectiveness**: The project fully achieved its targets for the PDO and most of the targets for other outcomes. The project was also largely successful in its objective to pilot test, develop and demonstrate appropriate approaches and methodologies for community-based watershed management in Sudan. Some of the project methodologies were not optimal for replication however and further work is needed. The overall conclusion is therefore that the project substantially achieved its PDO and related objectives.

33. **Sustainability**: Most of the developmental changes related to people / HHs and small groups (for example, farmers, pastoralists, horticulture groups, and so on) have a good chance of being sustainable. There are significant risks for the sustainability of the institutional or public services system change (for example, VDCs, government support services, and so on) however, due mainly to the very weak institutional foundation for VDCs, the poor linkage to government structures and support systems and the lack of resources of the supporting government ministries. Further work is needed to refine the approach and methodologies, and institute the necessary policy, structural and resource allocation changes.

34. **Follow-on project**: The project has learnt a great deal and developed an appropriate overall approach, most of the required strategies and most of the technologies and tools and so on needed, but has not yet developed a complete package / model that is tested, proved, documented and ready to roll out. A follow-on project is therefore needed to take this pilot project forwards to the next stage. If this is not done, much of the value of the current project will be lost.

Main Lessons Learned and Recommendations:

35. **Lessons learned**: While the project learnt a great deal that was used to improve the project, a number of very important lessons were learned that are of importance beyond the project.

(a) The CWM approach and methodologies can simultaneously improve the health of watersheds and the lives and livelihoods of people, and are appropriate for the development and management of watershed areas in Sudan.

(b) A huge lesson learned from the cumulative experience of the project was how to implement CWM in Sudan. This is relatively new area of learning and highly relevant for scaling up.

(c) Policy, institutional and resource allocation changes are needed at village and government agency levels to build appropriate structures and systems to provide an enabling environment for effective CWM.

(d) The focus for implementation of CWM on the ground should be at State level.

(e) Start as you mean to continue. It is almost always better to implement sub-project from the start, in the same way as they will be continued; rather than have the project set them up and hand over later.

(f) Projects that are intended to have a pilot project role should be explicitly designed to do this.

(g) Project design should be based on a realistic assessment of the available knowledge base and capacity, in relation to the challenges of the project.

Recommendations:

36. The government should establish a high-level national "Permanent Committee on Watershed Management" (PCWM) with earmarked funding for CWM.

37. The government, with support from the WB, MFA and other development partners should develop, secure finance for, and implement a follow-on project to the CWMP.

38. If it really proves to be impossible to establish a proper follow-on project to the CWMP, then the human resources, best practices and learning from the CWMP should be used by other projects and initiatives related to CWM in Sudan.

The Regional Capacity Building Sub-component implemented by the ENTRO

39. Under the umbrella of the NBI, the Eastern Nile countries of Egypt, Ethiopia, South Sudan and Sudan are pursuing cooperative development at the sub-basin level through the investment oriented ENSAP. Towards this end, the EN countries have identified their first joint project, the Integrated Development of the Eastern Nile, which consists of seven sub-projects addressing issues related to flood preparedness and early warning, power development and interconnection, irrigation and drainage, watershed management, multi-purpose water resources development, and modelling in the Eastern Nile. The ENTRO is an institution established by the three EN countries to advance the implementation of ENSAP projects.

40. **The Eastern Nile Watershed Project** is one of the seven projects agreed under the Integrated Development of the Eastern Nile. Its immediate objective is to establish a sustainable framework for the management of selected watersheds in the sub-basin in order to improve the living conditions of the people, enhance agricultural productivity, protect the environment, and reduce sediment transport and siltation.

41. Towards meeting its objective, the Watershed project undertook two sets of activities in parallel between 2004 -2008: preparation of investment ready projects for national implementation (fast track projects) and a Regional Cooperative Assessment (CRA) study for watershed. Both sets of activities were successfully completed.

42. Since July 2009, the ENWMP (financed through grant fund provided by GEF and the GoF as well as counterpart funds from Governments of Sudan and Egypt) supported implementation of watershed investment project in Sudan and Egypt as well as a regional capacity building activity implemented by ENTRO. This report is prepared to highlight achievement of the Regional Capacity Building sub-component coordinated through ENTRO covering the period July 1, 2009 to December 31, 2015.

Project Information:

Project Name and No.: Eastern Nile Watershed Management Project
Project Partner: GEF/World Bank
Project Stakeholders: Egypt, Ethiopia, South Sudan, and Sudan

Project Duration: 2009 - 2015

Component Name and No: Regional Capacity Building **(P111330-TF09531)**
Component: US$2 million
Component Location: Addis Ababa, Ethiopia

43. **Component objective** was to strengthen the knowledge base and human resource capacity for cooperative action on watershed management in the Eastern Nile Basin.

Component Achievements:

Capacity Building and Coordination

Design considerations:

44. The Regional capacity building intervention was designed to improve the planning and implementation of watershed projects with in the sub-basin through helping practitioners in acquiring the basic conceptual understanding and enhancing their skills. To this end ENTRO developed a road map (capacity building module) that led towards attaining the intended objectives. The planning of the capacity building interventions and the thematic areas addressed were in response to interlinked factors: the conceptual approach pursued by the ENWSP project and the limited capacity that exists in the sub-basin:

45. Livelihood approach to watershed management: The Watershed Management approach strives to plan holistic interventions that address not only the symptoms of the problems, viz. land degradation, soil erosion, sedimentation, deforestation, and so on but also the root causes and drivers of the problem, that is, threatened and unsustainable livelihoods. The livelihood approach strives to reorient the perspectives of development practitioners and professional staff from considering watershed management as problems requiring primarily technical fixes (for example, soil conservation, afforestation, and so on) toward reappraising the problems as socio-economic challenges (for example, access to credit, financial and other resource inputs, capital and markets; access to support and networks - inclusion and social capital; access to power and influencing decision making processes - participation; access to technology and know-how; and so on). Thus, the WS management approach of necessity needs to be holistic, inter/multi-disciplinary. It thus becomes essential first to acquire basic conceptual understanding in designing and managing sustainable development projects. Following the conceptual understanding there is a need to acquire the necessary skills through short term trainings and draw practical lessons of experience from watershed projects within the Nile Basin countries and outside to learn about what worked, what did not work and why.

46. Capacity gaps: Translation of conceptual understanding in to action on the ground requires that the necessary skills are acquired to design and manage watershed projects for holistic interventions. The capacity need assessment made by the Cooperative Regional Assessment (CRA) study for watershed as well as formal and informal consultations made at national level indicate that there is inadequate capacity across a wide range of disciplines and subjects at all levels and that addressing the capacity gaps is a key pre-requisite for effective trans-boundary watershed management data collection, multi-disciplinary watershed management research, and M&E of watershed management activities.

47. The capacity building activities thus are designed to ensure that there is adequate conceptual understanding by watershed managers and practitioners and have acquired the necessary skills in the design and management of watershed development projects and thereby enhance national capacity in managing watershed development activities effectively and efficiently.

48. As mentioned above, the focus of the capacity building activity were determined based on the new approach to sustainable watershed management and the capacity gaps identified. While the needs are enormous and country specific needs are apparent, this particular

intervention in capacity building has focused on thematic areas that meet the immediate practical needs and those that will facilitate effective and efficient transboundary watershed management. Moreover the thematic areas are selected with the intent of introducing new wisdom, innovative approaches and best practices in the planning, management and implementation of watershed projects and impart transboundary perspectives and solutions to national problems. The selection of thematic areas is expected to reorient the perspectives of watershed professionals towards reappraising the problems of watershed degradation from socio-economic challenges as well. In order to address as many of the essential topics as possible but also depending on the depth of knowledge required, the regional capacity building intervention used three main mechanisms to achieve its objective: short trainings; facilitating workshops; and knowledge and experience exchange visits.

Performance of Donor Agency

49. The World Bank was the institution directly involved in supporting the project. The GEF, is the financer of the watershed project channelled through the World Bank. The World Bank through its TTL provided much appreciated back-stopping. The team has been instrumental in the successful accomplishment of the project. Key among the support is facilitation in procurement and timely approval of requests, reviewing documents (TORs, draft reports), timely disbursement of fund and providing technical guidance, via the Implementation and Support Mission fielded twice a year, throughout the project life.

List of Documents Produced Under ENWSP

50. A number of reports and documents related to the capacity building activity were produced. Below is the list of documents published for wider dissemination:

- Technical reports:
    - *Integrated watershed management: concepts and practice*
    - *A field manual on Gully Mapping and Rehabilitation*
    - *A field guide on Design and construction of drainage control structures*
    - *A training manual on Results and Process based monitoring and evaluation of watershed projects*
    - *A training manual on Soil and Water Conservation*
    - *A field manual on Rain water Harvesting & Utilization*
    - *A training manual on Nursery management & Agro forestry*
    - *A training manual on Integrated Watershed Management and Nursery Establishment*

- *A training manual on Application of GIS & RS tools for watershed planning and management*
- *A field guide on design and construction of bench terracing*
- *A training manual on Results and Process Based Monitoring and Evaluation for Watershed Projects*
- *A field Guide on Integrated watershed management in the Eastern Nile*

- Study tour reports:
  - *What have we brought back from China: a study tour report to loes plateau, China*
  - *Study tour report to India*
  - *Study tour report to Rwanda*
  - *Study tour report to Tanzania*
  - *Study tour report to Ethiopia*
- Documentary films:
  - *Inheritance to our Descendants*
  - *Window of Hope*

Lessons Learned:

Effective communication with national offices

51. Over the last five years the watershed project has enjoyed a very close working relationship with the national offices (National coordinators for watershed) in aspects related to watershed management by way of consultation, information and experience sharing and liaison between countries of activities being carried at regional and national level. This good and effective communication has helped the project implementation to progress relatively smoothly even during this difficult time, when the governance decided to freeze regional activities. This need to be sustained and even applied to other ENTRO projects.

Training on national needs

52. Due to the freezing of regional activities, the project opted for an interim solution, support national institutions through organizing capacity building activities based on national needs and priorities to expedite implementation of national activities. This approach was introduced to expedite implementation of national activities in an effective manner. Accordingly action plans based on national needs were drawn. The various training workshops described above were organized and conducted as per the agreed plan. Feedback from the participants and

project offices substantiate the positive contribution of this approach in expediting effective and efficient execution of project activities. This was also confirmed during the mid-term review.

LNNMF Sub-component implemented by Egypt

Basic Information

Project Name:	**Eastern Nile Watershed Management Project: Lake Nasser/ Nubia Management Framework**
Project ID:	P111330
GEF Grant No:	TF 094530
Project Partners:	GEF/World Bank
Project Stakeholders:	Egypt, Sudan
Project Duration:	July 2009 – December 2014
Project Budget:	US$2.7 million
Date of Effectiveness:	21-Jul-09
Project Location:	Lake Nasser/Nubia, Egypt/Sudan

53. **Development Objectives (PDO):** The Lake Nasser/ Nubia PDOs GEO are twofold: to increase the adoption of sustainable land and water management practices in selected micro-watersheds in the eastern Nile sub-basin; and to develop a framework for integrated and sustainable management of Lake Nasser/ Nubia Sub-basin.

Original Components (as approved):

54. The LNNMF PDO was to be achieved through two components:

55. Project Management (National-level implementation in Egypt would be led by the Ministry of Water Resources and Irrigation, .and in Sudan by the Ministry of Irrigation and Water).

56. Sustainable Management of Lake Nasser/Nubia throughout the environmental quality monitoring and management guidelines

57. Project Management Capacity Building: This component supported (a) developing a modern management style through training of policy planners, managers, and administrators from the central and participating local governments; (b) conducting studies at the local and national levels, the findings of which would be used to improve policy and decision-making processes, (c) enhancing performance, quality and efficiency of audits of institutions; and (d) procurement, training, and installation of equipment necessary for program management and implementation at the central and local levels.

58. Framework Guideline for Sustainable Management of Lake Nasser/Nubia: This component was comprised of two main segments (a) providing TA, 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 modelling tools and procedures, and database system protocols, conduct of Socio-economic and Joint Egyptian/Sudanese environmental surveys; (b) to use the scientific data collected to develop a framework for an integrated and sustainable management of Lake Nasser/Nubia Sub-basin, which would serve as the basis for the formulation of a joint Sudanese/Egyptian policy for managing the lake.

59. No revision of components took place during Project life.

Assessment of Outcomes:

Relevance of Objectives, Design and Implementation

60. The Project was highly relevant. The Project design supported the establishment of sound and scientific baseline for the Sustainable Management of Lake Nasser/Nubia.

Achievement of Project Development Objectives

61. The Project performed satisfactorily in the achievement of its overall PDO which was (a) Develop Knowledge for Cooperative Action to improve the quality of environmental monitoring data necessary to predict sedimentation processes and water quality in Lake Nasser/Nubia for possible mitigation and other management measures. (b) Develop a framework to guide sustainable management of Lake Nasser/ Nubia. All outcomes of the LNNMF project were met within the time frame and budget set for the project. The only shortcoming --which became evident to the ISM as early as January 2014-- was the lack of cooperation and response from the Sudanese MoIWR to any progress of the project since the Joint Technical Steering Committee of November 2013, held in Alexandria, Egypt.

62. Whereas it fell short of accomplishing the second half of the second objective "Adoption by the Ministry of Water Resources and Irrigation, Egypt and the MoIWR, Sudan of a framework for integrated and sustainable management of Lake Nasser/Nubia Sub-basin", because of the Sudanese position of non-cooperation with this objective as of 2013. So we have the management guideline and its scientific framework ready for implementation, but we do not have the endorsement of the Sudanese government - A very unfortunate situation. On the upside whenever political will decides to resume collaboration we have the document with which to proceed.

Achievement of PDO: KPIs and Intermediate Outcomes:

63. PDO 1: "to develop knowledge for cooperative action to improve the quality of environmental monitoring data necessary to predict sedimentation processes and water quality in Lake Nasser/Nubia for possible mitigation and other management measures", and to design a "Framework Guideline for Sustainable Management of Lake Nasser/Nubia." By the end of the project there was a substantial corpus of knowledge about lake Nasser/Nubia which did not exist before as a result of the 7 scientific expeditions which were undertaken on the Lake and the development of a sand blown study relying on actual field data for the first time. Sedimentation

measurements collected are now more accurate and complete than before and a socio economic and environmental data base furnishing a baseline for further such studies exits.

64. We have exemplary annual joint missions on lake Nasser/Nubia sharing data and experience among scientists of both countries, strengthening the bonds between their respective institutions. The project also has yielded another valuable scientific addition for the first time that of an integrated data base model for all tasks performed on Lake Nasser/Nubia.

65. PDO 2: the second PDO was composed of two components, one relating to the framing of all the science generated pertaining to lake Nasser/Nubia, its environment, and population into guidelines of sustainable management for generations to come. The second required ""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", which requires an act of political will not science. The Egyptian government is willing to implement the framework it worked so hard to accomplish and it awaits a similar response from its Sudanese counterpart, confident that whenever circumstances change adoption by the Sudanese counterpart will be forthcoming.

Achievement of Outputs by Components:

66. Component One "Project Management" was achieved by (a) successful procurement of the necessary equipment and tools to undertake the various studies required on Lake Nasser/ Nubia. (b) Training the beneficiaries on the use of the new equipment and tools, while also building the capacity of young engineers and staff in the various functions of the project; such as financial audits, English courses, and procurement procedures. Fifteen training courses were administered during the project to 111 beneficiaries of 6 different institutions in both Egypt and Sudan. (c) Sedimentation studies [extraction and utilization], were performed in a detailed and comprehensive fashion in trans-boundary expeditions, thus mapping the bottom of Lake Nasser/ Nubia in a more complete way, and shedding information on potential sediment extraction and use. (d) A joint comprehensive survey was made of the environment of Lake Nasser/ Nubia providing a baseline for future studies. (e) Development of an integrated data base for all measurements collected about Lake Nasser/ Nubia. (f) The establishment of mathematical models for sedimentation in the lake bottom. (g) Development of a study for Wind Sand Blown from actual field data around the Lake. (h) Facilitating and funding a total of 7 scientific expeditions (missions) on Lake Nasser/ Nubia during the project in addition to a mission in the Khors of Calabsha and Alaqi which was a breakthrough a first. (i) Holding a total of six workshops [3 in Egypt and 3 in Sudan] for stakeholders and beneficiaries of the project.

67. Component Two Framework Guideline for Sustainable Management of Lake Nasser/Nubia is a solid scientific endeavour which sought to collect all issues pertaining to the welfare and sustainability of Lake Nasser/Nubia and its inhabitants in both Egypt and Sudan in two volumes. One organizing all the data collected from the studies and measurements performed on and in lake Nasser/Nubia, the second presenting an administrative management construct centred on the development of a joint body to oversee all activities in the lake Nasser/Nubia basin to the benefit of its inhabitants, and preventing its future deterioration.

Efficiency:

68. The Project supported 6 research institutions in Egypt and Sudan to improve both their internal and external technical and administrative efficiency without any prejudice to gender, as we notice that a contribution of about 40 percent of all capacity building effort was received by females.

Justification of Overall Outcome Rating:

69. Rating: Satisfactory. The Satisfactory rating is justified given successful achievement or over-achievement of most outcomes. The outcomes have resulted from completion of all investment activities and good utilization of investments, improvement in beneficiaries' performance, improvement in the research and development productivity of institutions, networking among institutions, and services to community and economy at large.

Lessons Learned:

70. Strong ownership of the central government and lower governments is essential for successful project implementation, especially if the project is designed to do the right things at the right time, which has been the case with LNNMF.

71. Some key engineers and senior staff underwent training on new equipment and data base models, but a better long-term vision planning could have further strengthened organizational change in the research institutions which benefitted from this capacity building.

72. Any future project of the World Bank in Egypt or Sudan should involve large capacity building efforts in the administrative as well as the technical domains. Trainings and courses offered by the World Bank and GEF in the LNNMF project could be said having had the greatest return on investment judging by the extremely positive enthusiasm and commitment by the beneficiaries who indeed admitted to having greatly benefitted from their learning experiences, both at work and in their private lives. Some went on to other jobs spreading with them the benefits accrued by this project.

Annex 7. List of Supporting Documents

a. Eastern Nile Watershed Management Project - Project Appraisal Document. World Bank 2009.

b. Grant Agreements for Eastern Nile Watershed Management Project.

c. Project supervision documents. Aide memoires, and ISRs.

d. Borrower's Draft Completion Reports.

e. Borrower's Beneficiary Survey Reports.

f. Eastern Nile Watershed Management Project - Restructuring Paper. World Bank 2013.

g. Eastern Nile Watershed Management Project - Restructuring Paper. World Bank 2014.

h. Eastern Nile Watershed Management Project - Annual Progress Reports.

MAP

I N S E R T

M A P

H E R E

AFTER APPROVAL BY SENIOR GLOBAL PRACTICE DIRECTOR

AN ORIGINAL MAP OBTAINED FROM GSD MAP DESIGN UNIT

SHOULD BE INSERTED

MANUALLY IN HARD COPY

BEFORE SENDING A FINAL ICR TO THE PRINT SHOP.

NOTE: To obtain a map, please contact

the GSD Map Design Unit (Ext. 31482)

A minimum of a one week turnaround is required