



NILE BASIN INITIATIVE

EASTERN NILE SUBSIDIARY ACTION PROGRAM (ENSAP)

Annual Report, July 2013-June 2014

August, 2014
Addis Ababa, Ethiopia



Eastern Nile Technical Regional Office (ENTRO)

We Work for the Shared Benefits of Cooperation



Table of Contents

1. Background Information.....	1
1.1. Program Background	1
1.1.1. Program Standard Data	1
i. Program Name: Eastern Nile Subsidiary Action Program (ENSAP)	1
1.1.2. Program Goal and Objectives:	1
1.1.3. Key Milestones in the reporting period:	2
1.2. Report Background:	2
2. Context as it affected Project implementation:	2
2.1 External Context & effects on implementation:	2
2.2 Internal Context & effects on implementation:	2
3. Actual Results:	3
3.1 Results for the period:	3
3.2 Cumulative Results (Results including previous achievements):	22
3.3. Sustainability of Results:	30
4. Project Management:	31
5. Program/Project Expenditures:	31
6. Major Challenges & Constraints and Mitigation strategies applied:	31
7. Lessons Learned and Recommendations:	32

List of Acronyms:

AFD	-	Agence Francaise de Development
AfDB	-	African Development Bank
CRA	-	Cooperative Regional Assessment
DSS	-	Decision Support System
EMG	-	Environmental Management Guidance
ENPM	-	Eastern Nile Planning Model
ENWM	-	Eastern Nile Watershed Management
GBO	-	Global Development Objective
GEF	-	Global Environment Forum
IPoR	-	Independent panel of Reviewers
ISP	-	Institutional Strengthening Project
JMP ID	-	Joint Multipurpose Program Identification
LIU	-	Local Implementation Unit
MOST	-	Ministry of Science and Technology
MSIOA	-	Multi-Sector Investment Analysis
NBTF	-	Nile Basin Trust Fund
NCORE	-	Nile Cooperation for Results
PFMA	-	Potential Failure Mode Analysis
PIPEP	-	Project Implementation Performance Enhancement Plan
RISM	-	Review and Implementation Support Mission
RWH	-	Rain Water Harvesting
SWC	-	Soil and Water Conversation
TBIWSP	-	Tana Beles Integrated Watershed Project

1. Background Information

1.1. Program Background

1.1.1. Program Standard Data

i. Program Name: Eastern Nile Subsidiary Action Program (ENSAP)

ii. Ongoing Projects:

- Eastern Nile Watershed Management,
- Nile Cooperation for Results (NCORE)
- Baro-Akobo-Sobat Multi-Purpose Water Resources Development Study,

iii. Program Partners:

- a) **Owners:** The Governments of Egypt, Ethiopia, South Sudan and Sudan
- b) **Development Partners:** GEF-WB, AFD, SDC, Netherlands, NORAD, NBTF (EU, CIDA, Finland, France, Norway, WB)
- c) **Key Stakeholders:** Communities in the EN Basin, Relevant government agencies, NGOs, Civil society, private sector, universities, media and others.

iv. Duration of the program: Continuous, however individual projects with varying start and closing dates (two to three-years duration on average)

v. Total Program Budget: Estimated preparation cost is USD 49.0 m as per PAD (May 2001) Total current year budget (July 2013 to June 2014) is USD 3.3 million

vi. Program location: ENTRO Headquarters in Addis Ababa, Ethiopia with the individual ENSAP Project activities in the EN Countries: Egypt, Ethiopia, South Sudan and Sudan

1.1.2. Program Goal and Objectives:

Program Goal: To develop the water resources of the Eastern Nile in sustainable and equitable way to contribute to poverty reduction and to ensure prosperity, security and peace for its entire people.

Program Objectives:

- Poverty reduction,
- Reversal of environmental degradation
- Promotion of economic growth,
- Increased regional cooperation and integration
- Enhanced regional peace and security

1.1.3. Key Milestones in the reporting period:

- EN governance resume back and ENCOM 26th meeting was held on 30th January 2014 in Debrezeyit, Ethiopia
- Additional Financing approved by World Bank for Nile Cooperation for Results (NCORE), June 2014
- Baro Akobo Sobat Multipurpose Water Resources Study Project. Entered into implementation

1.2. Report Background:

The annual report covers the progress of ENSAP for the period July 2013-June 2014. It is prepared in line with the Results-Based Reporting System of NBI, focusing on results and on the basis of the annual work plan and budget for July 2013-June 2014. The report consists of background information, internal and external contexts of implementation, program achievements (physical & financial), major challenges & constraints, and lessons learned & recommendations.

2. Context as it affected Project implementation:

2.1 External Context & effects on implementation:

The technical support provided by the World Bank NCORE Implementation Support mission has been immense and invaluable to lead the project in the right track. The mission is visiting ENTRO every six months.

ENTRO was facing a formidable challenge regarding recruitment of regional staff, as staff selection depended on country endorsement. Staff vacancies were not limited to new positions relating to NCORE (Dam Expert, Water Resources Engineer, and Modeller) and the new ENTRO Management Team, but also included existing positions that became vacant upon resignation of incumbents (Environment Management Specialist and Development Communication Officer).

In the context of inability to recruit regional staff, ENTRO adopted two mitigation measures to advance planned NCORE activities: reliance on short-term Individual Consultants and diligence in selection of Interns for the EN Young Professional Program. Two experts (GIS and Geo Database Specialists) were contracted to consolidate the knowledge base established under the ENPM and other ENSAPT projects and to establish the EN central geo-database/ GIS Platform for the EN Multi-sector Investment Opportunities Analysis (MSIOA) planned under NCORE. Likewise a Water Resources Engineer was engaged to advance work on Dam Safety. To assist the Senior Water Resources Planner in supervising the work of Interns, Junior Water Resources Engineer and Junior Modeller were recruited. In addition, Executive Consultant and Advisor (the former ENTRO ED) were contracted to support ENTRO management.

2.2 Internal Context & effects on implementation:

The team work spirit which is well developed at ENTRO results in significant contribution for efficient implementation process.

3. Actual Results:

3.1 Results for the period:

Short-term Outcome 1.1: Enhanced image of ENSAP and NBI in EN countries

Social Development and Communication:

Outreach and Communication: Produced advocacy documentary concept note to target major Nile water users to support NBI, along with preparation of TOR for Sudan EN Watershed Management Project, Part II. Senior Social Development Officer also held interview with Bloomberg TV – Africa Journal – on Nile issues and cooperation in the basin. ENSAP contribution to NBI Corporate can also be included here. Another major activity during this period was participation, representing ENTRO, in ISS-Adelphi-ECA-German Foreign Ministry organized “Climate Diplomacy in Africa” conference which focused on identification and prevention of potential security risks engendered by Climate Change engendered water risks in the Nile Basin.

Communication Materials: During the reporting period Nile Flow, Volume 4 has been prepared, along with Table Calendars and highly appreciated ENSAP calendar-cum-outreach education material. These were distributed to the NBI family, and to participants in Nile Day Celebrations, ENSAP-organized workshop participants. An intern working on the Internship program has been supported to produce a booklet on the program.

NBI article for UNESCO book Free Flow: Co-wrote (with NBI and NELSAP) article on ENSAP projects commemorating 2013 UNESCO Year of Cooperation on Water.

Short-term Outcome 1.2: Increased ENSAP dialogue and partnership with Government, civil society, local communities, private sector and development partners

▪ Nile Cooperation For Results (NCORE):

NCORE 2nd consultation Workshop: Upon the completion of their tasks, the 1st batch young professionals concluded their stay at ENTRO after three and half months by submitting their final report and related deliverables to the respective team leaders. They also presented their work in a workshop organized by ENTRO for dissemination and consultation. This workshop was held in Bahir-Dar from 13th-14th September 2013. A Total of 70 participants drawn from different institutions and Ministries of the EN countries, Development partners, Consultants, ENTRO staff and the young professionals attended the workshop. Several presentations from ENTRO and the young professionals were provided. In addition, a break out session divided in three different groups addressed the EN Universities Special studies, Dam safety and Knowledge base issues and came out with recommendations that ought to help ENTRO achieve its objectives.

Flood Forum: The forum was held from 29th September -1st October 2013 in Khartoum, Sudan by the theme "**Awareness Forum: Towards Sustainable Mitigation Measures from Flood Impacts**". The objective of the workshop was to shed some light on what ENTRO has been doing to address flood related issues in the Eastern Nile and also collect feedback from the stakeholders on the way forward. It was also discussing the major floods in Khartoum state and in areas of South Sudan that claimed many lives which reminded everyone flood is still an issue that needs further discussion and action by all. A total of 67 participants from EN countries, Universities, Development partners, and ENTRO staff attended the forum.

NCORE 3rd Consultation Workshop: The workshop was held from 3rd-4th Feb 2014 in Nazareth, Ethiopia. Objectives of the workshop were to: present the progress of NCORE activities and achievements, and obtain feedback from key stakeholders, consult with stakeholders on implementation progress of special studies which would be executed jointly by EN Universities, introduce the Team Leaders of the major studies under NCORE (Multi Sector Investment opportunity Analysis (MSIOA), benefits of Cooperation, Climate Change, etc.) and availing opportunity for Team leaders to touch base with the Interns who carried out upstream work in relation to their respective studies, introduce the second batch young professionals/Interns to EN key stakeholders, and present activities undertaken by the second batch of Interns.



The workshop has achieved the following results: Feedback collected from workshop participants on the progress of NCORE, the team leaders of the major studies under NCORE were introduced with key stakeholders, and the 2nd batch of interns was introduced with the workshop participants thru presenting their activities accomplished so far.



A total of 67 participants attended the training workshop. Of whom, 27 were from Government offices and Universities, 17 Interns, 13 from ENTRO, 2 from Nile SEC, 1 from WB and 7 were consultants. In terms of gender composition, 15% were female participants.

Water Diplomacy Workshop: A very successful, first-ever workshop on Water Diplomacy was organized during this reporting period. A concept note that clearly articulated the outcome expectations, on the part of ENTRO as organizer along with the identification of a cross section of stakeholders that would take part in the workshop preceded all activities, budget and logistics was prepared. A renowned international consultant in the field of Water Diplomacy from Tufts University,



USA was hired to lead and facilitate the workshop and was provided with ample guideline and prior consultation.

The workshop was held from 5th-6th Feb 2014, in Nazareth Ethiopia. A total of 56 participants canvassing scholars/academicians, water resources professionals, government employees, ex and current diplomats, ENSAP governance, the media, from all four EN countries took part in the workshop and rated it highly, in a good number of cases asking for more of the same.



The objectives of the workshop were the following:

a) Introduce workshop participants to the state-of-the-art (theory and practice) in Track II water diplomacy and how Water Diplomacy can help resolve current differences and disagreements in Nile Basin Cooperation, b) Facilitate the establishment of a dedicated core team of Eastern Nile stakeholders that would regularly hold exploratory deliberations, seek new avenues, engaging in joint problem solving , document the results (recommendations, way forward innovative, break-thru/win-win proposals) and work out ways of disseminating them, including to relevant policy makers/negotiators to make a positive difference in negotiated outcomes. The core team is expected to lay the foundation for a strong, epistemic community of Eastern Nile water resource professionals, policy makers, managers, researchers, thinkers etc. dedicated to the promotion of inter-riparian cooperation and sustainability of the common Nile Basin resources.

Donor's Open House Event: ENTRO prepared donors open house event on 7th March 2014 in Addis Ababa, Ethiopia to sustain co-operation in the Easter Nile. The primary objective of the Donors' Open House was to: brief Development Partners on the re-affirmation by the Eastern Nile Council of Ministers (ENCOM) to strengthen Eastern Nile cooperation in an all inclusive manner, convey the decision made to reactivate ENTRO with renewed governance engagement and recruitment of the full senior management team of ENTRO, build on the initiative taken to ensure the sustainability ENTRO after fully paying up country contributions, and, follow-on the admission of the Republic of South Sudan, and the expanding demand that ENTRO revamp its role in supporting this sub-region



A number of existing and future development partners and ENTRO staff attended the event (a total of 17 participants). The program started by introducing the history of ENTRO and where it stands now with what ENTRO accomplished so far and it is financial limitations. Then it followed by poster presentation prepared by the different groups of the previous and the 2nd batches of interns.



The event has achieved the following results: improved understanding of the value addition of ENTRO to Eastern Nile Co-operation, and laying the foundation for furthering the partnership with Development Partners.

• **Baro-Akobo-Sobat Multipurpose Water Resources Study Project (BAS):**

Institutional launch workshop: The workshop was conducted from 27th – 28th February, 2014. The primary objective of the institutional launch workshop was to disseminate information to key stakeholders regarding the status of the BAS Project; specific objectives include the following.

- ✓ Avail information to key stakeholders regarding plans for the preparation of the BAS Project Main Study and its Components
- ✓ Avail a platform for interfaces between, on the one hand, ENTRO and the BAS Regional Project Coordinator and, on the other, the key stakeholders, including the BAS National Project Coordinators.

The workshop has achieved the following results:

- ✓ Improved understanding by key stakeholders of BAS Project, its main study and components,
- ✓ Team building among BAS Regional and National Project Coordinators

A total of 61 participants attended the launch workshop; of whom, 36 are from government offices in the EN Countries of Ethiopia, South Sudan and Sudan, 13 from ENTRO. The Nile SEC, Entebbe Uganda and the NELSAP-CU Kigali, Rwanda were represented by their most senior officials in the workshop. The workshop was also attended by a number of development partners and representatives of the donor community and members of the diplomatic corp from the Nile riparian countries in Ethiopia, women and the media groups also attended the workshop.



Short-term Outcome 2.1: Stronger EN institutional architecture at national level to identify, prepare and implement cooperative developments

▪ **Eastern Nile Watershed Management (ENWM):**

Experience exchange visit to Ethiopia: The main purpose of organizing experience exchange visits was to document experiences of participatory watershed management in the countries to be visited and draw lessons which will be useful and applicable to the development of integrated watershed management interventions in the Eastern Nile context. Experience exchange visits will provide a forum to discuss on project implementation modalities and contribute multi-disciplinary perspectives on approaches and thereby ensure performance of project implementation and sustainability of outputs. Such exchange of knowledge will also serve as a forum for capacity and confidence building by enabling interaction among professionals of the basin. Knowledge and experience exchange tour will enhance the technical capacity of

institutions involved in watershed management to undertake effective planning, monitoring & evaluation of watershed management interventions and thereby strengthen the role and capacity of national institutions in the development of pro-poor investments and services to promote productive and environmentally sound livelihoods with local community participation.

In line with the above general objective, the specific objective of organizing this exchange visit was to contribute and enhance the achievement of the Eastern Watershed Management Project's objective of strengthening the knowledge base and human resources capacity for cooperative action on watershed management in the Eastern Nile Basin. It was expected that the experience sharing tour would provide an excellent opportunity for the members of the delegation through direct exposure and interaction with Ethiopian watershed experts in bureau of Agriculture and the Tana-Belese watershed project and learn from the rich and in-depth experience of Ethiopia in watershed management.

This experience exchange visit to Ethiopia was organized from 1st-10th November 2013. A total of 16 participants (all from Sudan) visited various programs and projects related to watershed management. In addition to visiting different interventions in the field, the group had opportunities to interact with communities as well as administrative and technical staff at different levels. Detailed report on the visit was prepared and a documentary film of the visit was produced. These documents will be distributed with a purpose of disseminating the experience to a wider group.

Implementation review and support mission: A review and implementation support mission (RIMS) comprising of funding agencies (World bank and Government of Finland) and implementation agencies (Ministries of irrigation and water resources of Egypt, Ministry of Irrigation and water resources of Sudan, and ENTRO) was carried out during the reporting period (February, 2014). The RISM is a routine activity undertaken biannually with the objective to review the Project's overall implementation progress with particular emphasis on the following aspects of the project:

- the degree to which outputs are being obtained and how these contribute towards the achievement of the projects objectives
- the degree to which actions agreed upon in the previous missions have been carried out
- operational effectiveness of institutional and implementation arrangements
- assessment of performance of financial management and procurement system as well as progress in the procurement of goods and services
- assess the status of potential project risks outlined in the Project Appraisal Document (PAD)

One similar mission (May, 2014) was also carried out to the Ethiopian fast track watershed projects which is implemented as a component of the Tana-Belese Integrated Water Resource Development Project. The overall assessment of the review mission indicates that progress was satisfactory. At the end of each mission, the team prepares an Aide Memoire that summarized the findings, recommendations and next steps for consideration of all parties at a formal wrap-up meeting. The series of missions conducted have helped to expedite execution of projects components and activities to be on track and enabled projects to significant outputs and outcomes since the various components became effective.

Training workshop on Nursery management & Agro forestry: A five days training workshop on Nursery Management & Agro forestry was organized and conducted in Debre-Tabor town, Ethiopia from 18th-21st November 2013. The general objective was to contribute to sustainable

land management efforts of the region and beyond. The specific objectives include equipping forestry experts from region to woreda level on: Proper nursery management and seedling production techniques; planning and implementation of tree planting operation for different objectives in different land uses/land cover of the various agro-ecologies; and the principles and planning of the different agro forestry systems and practices.

The training program was divided into two major parts: Theoretical (3 days) and practical (5 days) sessions. The main topics covered during this theoretical session include:

a) Choice of species (considering objective, availability of species that can meet the objective and matching these selected species with specific site condition); b) Nursery site selection and design and layout (determining the number of seedlings, size of the nursery and make a concrete design to accommodate the annual plan); c) Seed supply system (seed collection and storage, making germination and purity test, calculating the volume of seed required, treatment of seeds to improve germination); d) Seedling production techniques (obtaining soil mix, determining the volume of soil, compost making, soil mixing and pot filling, seed sowing methods); e) Tending operation (Mulching and shading, watering, pricking out, weeding, thinning, root pruning, hardening off and protection from pests and diseases); f) Quality check and grading; g) Vegetative propagation methods; h) Planning the nursery operation (proper documentation of nursery operations, concrete annual plan and an action plan divided into months).

A resource person with extensive experience was recruited to facilitate the training. A field guide manual was also prepared and distributed to the participants.

A total of 29 participants from Ethiopia attended the training workshop. The composition of trainees include: 10 forestry experts from the 5 Tana-Beles integrated water resource project woreda, 14 experts from 10 zones of the region and 5 regional experts.

Training workshop on Soil & Water Conservation: The training workshop was organized and conducted in Debre-Tabor town, Ethiopia from 19th-26th December 2013. The general objective of the training was to improve technical capacity of experts working at different levels by providing effective technical training on the planning, design, construction and monitoring of soil and water conservation practices and systems. Particularly, specific objectives of the training were the following:

- Enhance the competence (skill, knowledge and attitude) of the participants in the area of watershed management in general and soil and water conservation in particular – equip the trainees with all practical aspects of the design, layout, construction, and management of the various SWC measures,
- Use this training as a TOT and enable participants to deliver/cascade down similar trainings to the Woreda level experts, development agents and the community at large, and
- Strengthen the capacity of participants to undertake field level backstopping and technical support.

A total of 30 participants from Ethiopia attended the training workshop. The participants were primarily soil and water conservation experts drawn from the regional, zonal and Woreda levels.

The training program was divided into two major parts: Theoretical (3 days) and practical (5 days) sessions. The theoretical session was started by a round of introduction after the official opening by the Process Owner of the Natural Resources, BoA, Amhara national Regional State. Participants also reflected on their expectations of the training. The three days theoretical

training was enriched with power point presentation, displaying of pictures and diagrams, facilitating interactive discussions, experience sharing and daily recap while the practical session was carried out via direct field exercise in a selected watershed. A resource person with extensive experience was recruited to facilitate the training. A field guide manual was also prepared and distributed to the participants.

- *Strategies to Scale up Best Practices in Watershed Management:* A regional training on strategy to scale up best practices in watershed management was conducted from 7th-10th February 2014 in Nazareth, Ethiopia. The main objective of the training was to build the capacity of the participants to devise and implement strategies for scaling up watershed management projects in national and regional settings. The four-days program was grouped around the following four themes:



Visioning: Understanding what the ideal of watershed management at the community level and in any given administrative region, and thereafter, to understand the constraints to achieving the vision, and also the resources available to achieve it.

Direct and supporting interventions: Understanding the direct and supporting interventions necessary for supporting watershed management and reviewing the findings of the CRA in watershed management

Best practices: Understanding that best practices are (1) context-specific and not easily transferred from one success case to other sites; (2) driven by visionary and committed individuals; and (3) not just at field-level but include government policies and programs.

Strategies for scaling up best practices: Appreciating that (1) scaling up has to be done through government institutions, policies and programs, (2) there are special constraints, including less ‘control’ over outcomes and processes, when working with government (3) knowledge gaps need to be identified and filled by special studies while operating ‘at scale’ and (4) an integrated and long-term strategy is necessary, involving multiple organizations (including donors, banks, firms and government departments) and using partnerships, coordinated by regional/national government institutions, programs and policies.



The participants attended the training workshop on theoretical and practical aspects of scaling up of best practices. Their theoretical understanding and analytical skill on strategy to scale up innovative and best practices in watershed management during preparation of watershed investment projects enhanced.

The training targeted project staff at national level, government counterparts and other relevant staff from concerned ministries that would be involved in the preparation of detailed projects. A

total of 19 national staff selected by National project coordinators for watershed in each of three member countries, Ethiopia, South Sudan and Sudan participated in the training, along with 8 interns from ENTRO.

Training workshop on Integrated Watershed Management and Nursery Establishment: An eight day training workshop on Integrated Watershed Management was organized and conducted in Sinja town, Sudan from June 06 – 13, 2014. In line with the overall goal of the Eastern Nile Watershed Management Project and cognizant of the critical gaps in capacity, the training workshop on Integrated Watershed Management (IWM) and Nursery Establishment is intended to enhance the technical capacity of project staff as well as partner institutions involved in watershed management to undertake effective planning, monitoring & evaluation of watershed development interventions.

The overall training was given with the intension of fulfilling the following specific objectives:

- Participants are familiarized with the principles and concepts of IWM, the necessary preparation and procedures to be followed during planning of IWM activities and the practices to be implemented in establishing and managing nurseries,
- Enabled participants to have the required competence (skill, knowledge and attitude/confidence) to undertake backstopping and technical support to farmers and the community at large during actual implementation of those interventions,
- Serves as a Training of Trainers (TOT) and enables participants/trainees to deliver/cascade down similar trainings to the community. It is expected that the trained experts will eventually train others and guide and supervise the watershed management endeavor of the country.
- The training workshop was an opportunity to exchange ideas and experiences (for networking) among participants with regard to integrated watershed management and other related issues.

The training targeted professionals involved in the implementation of the community watershed components of the Eastern Nile Watershed Project in Sudan. A total of 24 participants selected from the community watershed management project in Sudan and experts working in government ministries have attended the eight days training.

The training program was divided into two major parts: Theoretical (4 days) and practical (4 days) sessions. The theoretical deliberation was mainly focusing on four major issues, namely: Integrated Watershed Management, Nursery Establishment, Physical soil and water conservation and Biological soil and water conservation measures. The core points covered and discussed under each of the topics are described below

a) *Integrated watershed management:* The theoretical training on integrated watershed management has covered contents related to principles/concepts and practices of IWM and planning steps and procedures to be followed. In this case, the experience of Ethiopia in the area of IWM has been taken as a good example and presented for discussion and knowledge sharing. The possibility of adapting the watershed management planning procedures of Ethiopia to Sudan with very little modifications has been also seen and consensus reached among the participants.

b) *Nursery establishment:* The currently existing situation in many countries including Sudan necessitates the planting of trees, shrubs and grasses. For this to happen the preparation of planting materials (seedlings, cuttings and seeds) need to get a due attention. In view of that, this particular training has given thought and allocated time for covering contents related to nursery establishment and management. The major topics covered during this session are: Basics of nursery establishment and management, nursery layout and design, preparation of nursery soil, equipments and materials required to run a nursery, seed collection, treatment and storage, tending operations in a nursery,

planting pit preparation and planting-out and planning and recording of nursery activities. It is expected that the topics covered will enable the participants to have a comprehensive knowledge about nursery management and will use this understanding for regular supervision and cascading of similar trainings to other colleagues and the community at large.

c) Physical soil and water conservation measures: This topic was not included in the original training schedule. Even so, it has been given some time and dealt about it because of the demand from the watershed project in Sudan to introduce participants about some of the physical soil and water conservation measures which can be implemented in different land uses and agro-ecologies. Accordingly, the facilitator has elaborated about gully rehabilitation techniques, moisture harvesting structures and other multitude of options that can be constructed to treat farmlands and grazing areas.

d) Biological soil and water conservation measures: Once the trainees are introduced about planting material production it was found complementary to include biological soil and water conservation techniques. This session has been dealt with a focus to agronomic measures, soil fertility management practices, vegetative soil and water conservation measures and agroforestry practices which are relevant to moisture prone areas.

The practical exercise was prepared following the theoretical deliberation. Consequently, the practical training has been undertaken with two separate sessions: session one on IWM planning procedures (assignment one) and session two on nursery operations.

The intension of this particular training was to give participants the opportunity to learn by doing and to share his/her views and experiences on the critical issues of the different watershed development planning steps and nursery management techniques. Group work and presentation of group work results were the other key approaches employed to monitor and enhance the level of understanding of the trainees. During the practical exercise the trainees were divided into 4 groups each containing 6 trainees comprised of participants representing different states and levels of responsibilities. The groups have been given assignments (by the consultant) to exercise on watershed planning procedures and to properly identify and analyze various nursery operations.

- **Nile Cooperation For Results (NCORE):**

Seasonal Flood Forecasting: Under the guidance and supervision of the Senior Water Resources Planner, and support from ENTRO GIS Specialist and IT Officer, a multi-country team of five young professionals were tasked with activities relating to the EN Flood Season Monitoring Program. The team also carried out the following activities under the two flood season in 2013 and 2014.

During 2013 flood season the achievements include;

- Enhancing the Gambella flood forecasting system and pilot the operationalization of the forecast system as part of 2013 Flood Season Monitoring Program. The Gambella flood forecasting system capability includes ETA Weather Forecast Model, HEC-HMS Hydrological Model and HEC_RAS hydrodynamic approach to estimate flood depth at different stations. The results from HEC_RAS are then exported into HEC-Geo-RAS for the purpose of producing flood inundation maps. Coordination with local authority in Gambella was attempted.
- A flood forecast bulletin was issued every week for the Gambella flood plains.
- Hydrological forecasting predication system for the entire BAS sub-basin has been initiated with the objective of integrating flood prone communities in the Sobat sub-basin

of South Sudan as part of the EN Flood Season Monitoring Program. This activity includes the engagement of one intern from South Sudan together with the support of senior intern from BAS region in configuring the HEC-HMS Model to the BAS sub-basin. Coordination with the South Sudan Ministry of Water Resources was initiated and is ongoing to provide observed data for the purpose of model validation. The intent is to have pilot model validation during this flood season whenever observed data become available.

- Lake Tana Model Forecast was operationalized by senior intern from Ministry of Energy and Water Resources (Ethiopia) tasked with producing daily forecast for Lake Tana floodplains and undertaking daily dissemination of forecasting message to the relevant agency in Ethiopia.
- Sudan FEWS is operationalized during this season with senior Intern from Ministry of Water Resources and Electricity of Sudan tasked with producing daily forecast report and dissemination of forecast message to relevant authority in Sudan.
- Weekly flood bulletin were produced up to date and disseminated through both E-mail list and ENTRO Web-Portal.

During 2014 flood season the achievements include;

EN flood web-based forum was initiated where by key relevant stakeholders in the EN countries to discuss and communicate issues pertaining to flooding in the EN that can raise awareness and mitigate flooding. In 2014 flood season besides the flood forecasting, the team was also engaged in developing web based and mobile app flood forecasting tool. The main accomplishments include;

- Produced daily and weekly forecast report for Lake Tana floodplain and Support the web base flood app
- Produced daily and weekly forecast report for Blue and Main Nile System in Sudan
- Produced daily and weekly forecast report for Gambela floodplain
- Developed flood forecasting **web application** for Lake Tana, Blue Nile, Main Nile and Gambela floodplains.
- Developed flood forecasting **mobile application** for Lake Tana, Blue Nile, Main Nile and Gambela floodplains.

Capacity building and internship program:

Two batches of intern were on board during this period, the 2nd and 3rd Batches of NCORE interns.

2nd Batch of Internship Program

The 2nd batch of internship program started in December 2013. A total of 17 interns were selected from the four EN countries (five were female) which was a real improvement in balancing the gender composition. The interns were divided into four groups:

This internship program was successfully delivered the following tasks

- a. GIS, IT and Communication Group:*

Updated the Geodatabase of Eastern Nile Atlas and create Eastern Nile Atlas as Interactive Portfolio pdf document which have animate temporal data and indicators from the world bank database; development of Web based Information Management System; prepared Internship booklet which synthesise the background, objective and history of the previous internship program with some recommendation and suggestion on what more can be done to improve the internship program; updated some of the factsheets were according to the progress of the project; and uploaded reports of ENTRO's previous projects on the web portal.

b. Dam Safely Group:

Enhanced and revised previous dam safety toolkit (additional capability and including additional type of dams); created a dam safety software by converting the excel version to VB.net Programming Language; and created dam safety public domain document.

c. Watershed Management Group:

Enhanced the pervious Watershed Management Toolkit; developed Watershed Management Software using VB.Net Programming Language; and prepared Watershed Management field guide for technicians of soil and water conservation in Eastern Nile.

d. Analytical Group (Agricultural and Trade Models and ENMOS group):

Updated Eastern Nile Multi Commodity Trade Model and change the existing Excel based to a standalone application in Visual Basic.net; Developing Agricultural model for Sudan Using VB.net Programming Language; This model is used in assessing different development scenarios by trying to see the impact and benefit of these Scenarios of Agriculture in Sudan and try to optimize using a GAMS optimization language; initiated the development of Agricultural model for Egypt, Ethiopia and South Sudan Using Excel and GAMS; and enhanced ENMOS" Model which is Eastern Nile Multipurpose Options Scoping Model as a Water Resources Optimization Model for the Eastern Nile Basins using the Excel as a database presentation tool and GAMS Language as equation Solver. ENMOS model capability has been enhanced and different scenarios considered. Documentation and user manual prepared. Developing an Excel based interface (Dashboard) for better visualization of results and comparing the results for consistency purposes.

3rd Batch of Internship Program;

The 3rd batch of internship program is still ongoing which was started in the mid of June 2014. In this batch a total of 16 interns were divided in to five groups and accomplished the following under each group.

a. Web portal and IT group:

Web-based information management system was started that include database administration and web applications; developing central database that contribute for the web-portal and mobile application development; uploading of data was also part of this group on which different data

sets which was collected by ENTRO during the previous studies have been uploaded into a central database. What is missing now is to do data quality assurance for the uploaded dates.

b. Analytical Tools group:

Supporting the consultants of Multi Sectorial investment opportunity analysis by facilitating the support from ENTRO side to the consultant in providing data; and this group also supported the web portal enhancement component by reviewing the existing ENTRO portal and suggesting any update necessary on the portal from the point of view of the user side. It is also initiated to restructure the portal and prepare the writing contents by consulting the different specialist at ENTRO.

c. Dam Safety group:

Revisited dam safety toolkit and enhanced and added functionality to the toolkit; enhanced the user manual of the toolkit and supported the enhancement; and dam safety guideline enhancement and include the analysis of seismic activity and zoning.

d. Water Diplomacy group:

A concept note was prepared on “New Nile Opportunities: Scientific advances towards Prosperity in the Eastern Nile Basin” for the Second Scientific Summit on New Nile Opportunities; initiated to include a public opinion on the portal; and a concept note was also prepared to facilitate training to the EN media to raise awareness and increase the visibility of ENTRO and its projects.

e. Flood Forecasting and Early Warning group:

Produced daily and weekly forecast report for Lake Tana floodplain and Supportd the web base flood app; produced daily and weekly forecast report for Blue and Main Nile System in Sudan; produced daily and weekly forecast report for Gambela floodplain; developed flood forecasting web application for Lake Tana, Blue Nile, Main Nile and Gamabela floodplains; and developed flood forecasting mobile application for Lake Tana, Blue Nile, Main Nile and Gamabela floodplains.

Dam Safety:

- *Dam Safety Training Workshop:* The training workshop on Dam safety management principle, Social and Environmental issues in dam safety management was held from 07-09 October 2013 in Nazareth, Ethiopia. The objectives of the training workshop were to: review the draft Dam safety Guideline Inception Report and EN Dam safety Practice Assessment Report and obtain feedback from stakeholders; develop the necessary practical skill and knowledge to understand the complex issues involved in dam safety management and, enhance capability and competence to evaluate dam safety performance at different levels in the EN countries.



The training workshop has achieved the following results: The draft Dam safety Guideline Inception Report and EN Dam safety Practice Assessment Report reviewed; enhanced knowledge and skill of participants on Dam Safety management and ESIA; awareness created and capability improved on the evaluation of Dam Safety performances; international and EN countries' experiences shared, and networking established among Dam Engineers and environmental experts in the EN countries.

A total of 25 participants attended the training workshop. Of whom, 12 were from Government offices, 3 from Academia/ Research institutions, 6 from ENTRO, 1 from ETCOLD and 3 were consultants. In terms of gender composition, 12% were female participants.



Dam Safety Training Workshop #2 27January-01 Feb 2014, Bahir Dar: Developments of large scale water infrastructure on trans-boundary rivers require careful coordination of dam safety-related planning and management. Proper operations and maintenance of these large water infrastructure coupled with recognition of impacts of climate change (intensive rainfall and flooding), is vital to minimize the risks of a catastrophic disaster affecting populations residing downstream of the dams.



Despite the growing number of water resource infrastructures in the EN countries, there is no regional framework or institute responsible for dam safety management. Hence, dam construction and operational safety management has become an emerging issue of the EN region. The aim is to increase the functionality and safety of the structures, the service they provide, and protect downstream communities who may be at risk if dam safety is compromised. This could be achieved through coordinated regional regulatory dam safety framework, which encompasses the technical, institutional and legal framework, and capacitated human resources, or by other measures requested by the Eastern Nile countries.

Therefore, to address these needs and reduce the risk of dam failure and accidents caused by uncoordinated operations and varying dam



safety criteria and operational strategy across the EN sub basin ENTRO has initiated development of dam safety guideline and a Road map for the preparation of EN dam safety regulation framework. In addition to these, a capacity building program to enhance the technical capacity of EN planners, policy makers, designers and experts was formulated.

This second training program emphasized on potential failure mode Analysis, particularly on best practice for Key Issues in Dam Safety. The Koga dam, located in the Tan Beles sub basin was selected to exercise the PFMA.

The objectives of the Training Workshop are the following: Hands on training on concept and application of Potential failure mode Analysis (PFMA) and Risk informed decision management (RIDM); to develop the necessary practical skill and knowledge to understand the complex issues involved in dam safety management; to enhance capability and competence to assess dam safety at national level; to practice the first PFMA on the sample dam, Koga; train national teams to be able to do PFMA on other dams; and provide training on best practices of dam safety management.

The training workshop has achieved the following results: Enhanced knowledge and skill of participants on PFMA, awareness created and capability improved on Dam Safety management that enables the participants to practice the skills gained on the other dams in their countries, International and EN countries' experiences shared, and networking established among Dam Engineers in the EN countries.

A total of 29 participants attended the training workshop. They were drawn from Government offices, Academia/Interns, ENTRO, WB and consultants. In terms of gender composition, 14% were female participants.

Site visit to Koga Dam: The dam safety training workshop participants visited the Koga dam on 29th January 2014. The purpose of the visit was to complement the theoretical training through conducting Potential Failure Mode Analysis (PFMA) on the dam.



Koga irrigation project is located in Amhara region near Merawi town 35 km south west of Bahir Dar. The dam is constructed on the Koga River, Lake Tana sub basin. Its purpose is to irrigate 7,000ha of land. The Koga Main Dam and the Saddle Dam are semi-homogeneous earth fill dams with comprehensive filter and drainage systems.



DAM SAFETY WORKSHOP #3 30th June-01 July 2014, Khartoum:

The first dam safety workshop emphasized on training of basic dam safety concept and social and environmental issues related to dam safety, back to back within inception report review, was successfully conducted during 7-9 October, 2013 in Adama, Ethiopia. The second dam safety workshop emphasized on potential failure mode Analysis training was conducted during 27th January-1st February 2014 in Bahr-Dar, Ethiopia.

Dam Safety Training Workshop: During the 3rd dam safety Workshop, participants from the four countries were trained on PFMA (Potential Failure Mode Analysis) on Koga dam. The training was aimed at assessing the safety of an existing dam. These trainees were back to their home countries and practiced the training on selected dams (four in Ethiopia and two in Sudan) and submitted their reports to ENTRO. The reports have been reviewed by the trainers (international consultants).



The international consultants have provided valuable feedback on the reports which needs to be improved in future similar assignments.

A total of 30 participants attended this report review workshop. They were drawn from EN Government offices, Universities, NBD, ENTRO and consultants. In terms of gender composition, 7% were female participants.

Short-term Outcome 2.2: Stronger EN institutional architecture at regional level to identify, prepare and implement cooperative developments

▪ **Nile Cooperation For Results (NCORE):**

Web Portal Enhancement:

ENTRO has accumulated a considerable volume of data, information and knowledge. These knowledge resources are stored in different systems responsive to the specific needs and scope of the prepared projects. There is also quite substantial volume of knowledge resources that is not captured in these systems and available in formats that are easily accessible. These knowledge resources need to be properly captured, managed, and made available to a wider group of users. ENTRO thus initiated an effort for the enhancement of ENTRO web-portal capabilities through consultancy. The objective of the web portal enhancement includes;

- Compilation of a Roadmap for the development, management and dissemination of all types of Knowledge Products of ENTRO.
- Strengthen the institutional capacity of ENTRO in enhancing the content of the web portal and provide support related to the establishment of a comprehensive Knowledge-Management Unit within ENTRO to disseminate knowledge base products to be engaged by EN countries and other organizations
- Develop additional functionalities to ENTRO portal like publication of data through API(Application Program Interface) exposing the data to be consumed by internal and external services. Consideration of multiple device compatibility including mobile device, tablets and desktop browsers.

Key Achievements

After the development of the web portal has been finalized, ENTRO faced the challenge of adding additional features as well as populating the portal with relevant information. These continuous processes include several activities such as:

- Individual consultant is hired to enhance the web portal
- Situation assessment and preliminary inventory have been done for the web portal enhancement
- Gap summary and preliminary solution methodology is reported for the web portal and information management system (IMS)
- The Web based information management system development started.
- Development and enhancement of database administration tool .The aadministration tool is used to validate, manipulate and organize the centralized database.
- First version mobile application developed that includes flood forecasting mobile app this mobile application with similar functionalities as the flood web application and the first release will be available in this flood season
- Nile Mobile App and Nile Flood App developed
- The Web base flood forecasting application development started
- Flood forecasting Admin Tool development started. Flood forecasting system providing three days forecasting maps and reporting bulletins

Social Development and Communication:

Support to Management: The Senior Social Development Officer rendered support to management: including delegation of OIC responsibilities in his absence; chairing selection of consultants for the MSIOA, JMP Dam Safety, and Watershed Projects.

Short term Outcome 3.1: Increased Integration of gender, social development and environmental dimensions in ENSAP

▪ **Nile Cooperation For Results (NCORE):**

Eastern Nile Climate Risk Assessment

The overall objective of the study is to develop and operationalize an analytical framework for integrating climate risks into the process of investment planning and management of the EN water resources. Such analytical framework for Climate Risk Assessment (CRA) could be used to guide water related investment in the EN and form the basis for climate screening for investment project and provide guidance to the development of climate smart strategies

Key Achievements

- A consultant is hired to undertake the assessment
- Consultation and awareness raining was conducted as part of NCORE 3rd consultation workshop.
- The inception report has been submitted, it clearly gives the proposed methodology and approach. The Blue Nile River System is selected as a pilot show-casing, which ENTRO approved

Short-term Outcome 3.2: Increased ENSAP cooperative investment projects identified and prepared for implementation

▪ **Eastern Nile Watershed Management (ENWM):**

Preparation of Watershed investment projects (NCORE)

The overall aim is to conduct studies leading to the preparation and design of investment projects for four watersheds (Chemoga, Fincha, Upper Atbara, & Tulkuk) in Ethiopia and Sudan. The goal of these investment projects is to promote sustainable livelihoods among the communities within the watersheds by employing various development interventions. Another critical impact anticipated from the projects would be contribution to the reduction of sedimentation of downstream facilities. The preparation task is divided in to three phases: inception, intrim phase

and final phase. The inception phase of the project preparation is conducted between March and April, 2014.

The following activities were conducted during the reporting period:

- TOR reference for consultants to provide technical assistance to countries for the preparation of watershed investment projects has been finalized and cleared by WB.
- A team of consultants to support the preparation of the investment project were recruited
- The joint team (consultants, ENTRO staff and national team members) undertook field visits to the watershed areas, held initial consultations in the four watersheds
- Inception phase report was finalized
- A second round of field visit for the interim phase was conducted
- Write up of interim report has started and expected to be finalized by end of August 2014.

▪ **Nile Cooperation For Results (NCORE):**

EN Multi-Sector Investment Opportunity Analysis study

The Eastern Nile Multi-Sector Investment Opportunity Analysis (ENMSIOA) study is aimed at identifying and prioritizing the next set of investment projects by integrating all sector based projects previously identified by ENTRO or by the countries themselves and studying the cumulative effects.

Key Achievements

- The individual consultants were recruited (Team Leader, Water Resources Modeller, Social development expert, Environmental expert, Irrigation specialist and Hydropower expert)
- Available documents distributed to the consultants for document review and to initiate inception phase
- Country Consultation was organized for the consultants to visit the EN countries. The team was engaged in consulting stockholders in project identification, assessing socio-economic and environmental impacts of the potential interventions. The country consultation was conducted from May 26th to June 7th 2014.
- Draft Inception was submitted on July 2014 and review committee was established to comment on the inception report. The comment was sent to the consultants to incorporate in their report.
- A multi-country team of four Interns led by the ENTRO Junior Water Resources Modeler has been tasked with the development of analytical Framework for the EN Multi-Sector Opportunity Analysis. Significant progress was made by this team.

- Consolidation of the results of different water resources simulation and comparative analysis for a set of exogenous and endogenous water resources development scenarios in the EN. The activities performed include the following.
 - Running different models configured under the ENPM projects (Riverware, RIBASIM, Hec-ResSim, Mike-Basin/DSS, SWAT .etc) for different scenarios of interventions such as cascade of reservoirs on the Abbay/Blue Nile and study of downstream impacts of intervention (including implications of different filling scenarios);
 - Developing an Excel based interface (Dashboard) for better visualization of results and comparing the results for consistency purposes.
 - Summarizing the findings of the simulation analysis to support the profiling and multi-criteria analysis to be undertaken under the MSIOA.
- One of the contribution to the MSIOA was done by in-house capacity in enhancing ENMOS "Model which is Eastern Nile Multipurpose Options Scoping Model as a Water Resources Optimization Model for the Eastern Nile Basins" using the Excel as a database presentation tool and GAMS Language as equation Solver.
 - Further enhancement to ENMOS including refining system schematics and disaggregation to include all potential irrigation projects, diversion nodes, water supply nodes, reservoir nodes and new realities on ground (GERD, Merowe Dam, Rossaries Heightening etc.)
 - Updating water demand data, supply and demand ratings, costing data to reflect recent studies and outputs from Site-Specific-Studies (Mendaya and Beko-Abo), JMP1, ENIDS and other sources.
 - A simplified economic analysis for the EN proposed dams using an excel interface has been developed.

EN Universities Special Study:

Contracts have been given to the EN universities for the special studies with the topics listed below;

- Assessing ground water dynamics in the Blue Nile and Main Nile in Sudan (Khartoum University)
- Climate Change and Hydrological Implications in the Eastern Nile Basin (Cairo University)
- Implications of Watershed Investment Scenarios on Erosion and Sediment in the Blue Nile Basin (Addis Ababa University).

An Inception report was also submitted for the above special studies and ENTRO established a reviewing committee to comments on the report. These comments were compiled and send back to the universities for their updates.

▪ Dam Safety:

Dam Safety Guideline Final Inception Report: ENTRO Dam Safety activities include an assessment of regional dam safety practices, national level-capacity building and on-the-job training of those involved in dam safety issues, development of EN dam safety guideline and a

road map for regional dam safety framework. The focus of the dam safety activities will address both large and small dams. During the reporting period, the dam safety Guideline Final Inception Report was submitted by the consultant.

A concept not for the review workshop was submitted and approved. All the draft reports have been submitted and reviewed at regional consultation workshop held 30 June-1 August, 2014 in Khartoum, Sudan

Project proposal for second phase dam safety program was prepared, presented during donor open house meeting and sent to representative of American Embassy and other financiers.

- **Social Development and Communication:**

Input to project design: This entailed social development input (review of draft and feedback to consultants) to the preparation and conclusion of the two *JMP-1 ID workers* (including formulation and write up of the ENTRO statement on the closure of the study; comments on consultant statements that needed rewriting or buttressing with more data). Further work included development of Terms of Reference for the EN Multi Sector Investment Analysis Study for the Social Development expert and the Environment expert, including consultant selection. Another work here was review, from social development and poverty vulnerability perspective, of UNEP Workshop Report on “Adapting to Climate Change Induced Water Stress in the Nile Basin” a UNEP-NBI collaborative study.

Organization of projects: Led a discussion on the development of a concept map for the MSIOA study and provided proposals for the formulation of an approach to the task. This also included support to the preparation of TOR for the new watershed investment program; TOR for the BAS Multipurpose Study Project; presentation on ENSAP social and environmental safeguards for a Juba-World Bank organized awareness program, as illustrated by the EN Watershed Management Project. Another social development –cum-communication work done during this period was the successful conclusion of a visit – with briefings, site visits and direct engagement with communities - to Eastern Nile Watershed Management program by Permanent Secretaries of Nile Basin Ministries, which was both an outreach and stakeholder involvement undertaking.

Upstream work: ENTRO Senior Social development Officer led the preparation (methodology, write-up, and finalization) and write up of the NBI Stakeholder Involvement and Communication strategy, which has been adopted by the governance to guide NBI activities in these domains for the strategic plan period 2012-2016.

1.2 Cumulative Results (Results including achievements in the previous reporting periods):

Short-term outcome 1.2: Increased dialogue among EN governments

Eastern Nile Watershed Management Project:

Establishment and meeting of Regional Consultative Group for Watershed: A regional consultative group was established at the end of June 2009 with the objective to review the annual work plan and budget before formally submitted to ENTRO management, deliberate on capacity needs and agree upon thematic areas including time and venue. Since its establishment, the group met twice (July 2009 and January 2010 in Ethiopia & Egypt respectively). It enabled

to establish common understanding of project activities, helped in improving information exchange and communication among the various projects implemented nationally, contributed in trust and confidence building and enhanced regional coordination and integration.

Short-term outcome 1.3: Increased ENSAP dialogue and partnership with civil society, local communities, private sector and development partners

Eastern Nile Watershed Management:

Launch workshop for the Eastern Nile Watershed Project: A launch workshop for the project was conducted from 6-7 January 2010 in Khartoum, Sudan. The workshop was jointly organized by the World Bank, Ministry of Irrigation and Water resources, Sudan and ENTRO. Participants were drawn from the government and civil organizations from Sudan, World Bank staff, ENTRO, and national coordinators for watershed from Egypt and Ethiopia. ENTRO was represented by the Executive Director and the Regional Coordinator for Watershed. The Regional Coordinator made presentation on the progress of the project so far and the planned activities until the end of June, 2010.

Social Development and Communication Office (SDCU):

Stakeholder consultation: Due to the very nature of ENSAP project preparation, engagement is limited to critical secondary stakeholders. SDCU has provided critical input to IDEN project stakeholder consultation particularly to the JMP, both during the launch and JMP-1 ID stages. SDCU articulated the first stakeholder consultation and communication strategy for the JMP launch phase, on the basis of which the web-based DaNSS database was designed (the template of which was adopted for the entire NBI), all consultations of the launch phase were properly documented (over 35 of them) and a JMP-launch phase study-tour visit to the Senegal basin documented. For the JMP-1 ID Studies, SDCU formulated a detailed strategy document (SICAS), whose implementation plan was also prepared by JMP1 ID consultant. SDCU facilitated the kick off meeting of the JMP-1 ID studies, in which a range of secondary stakeholders have been consulted.

Networking with regional/international research and academic institutions: SDCU has supported M.Sc. and Ph.D. level researches [from the NB region and beyond] in the economic, institutional, hydrology, water resources management, watershed management, social, international relations, etc. As much as possible, effort has been made to make ENSAP beneficiary of these ongoing research outputs. The collaboration with IWMI and UNESCO-ICHE were cases in point.

Engaging Civil Society: By way of sustaining the gains made by SVP-CBSI, SDCU has maintained working relationship with the Nile Basin Discourse Forum (NBDF), and through its affiliated organizations at national levels such as environmental and women's groups. SDCU has been engaged in a series of workshops with civil societies that include media, bar association, academia and others, and tried to enlighten participants on Nile cooperation and challenges. This has significantly helped in creating awareness on the state of affairs around cooperation and civil society's role.

Networking with media: With the Nile Media Network, working relationship has been maintained, since the media provided important channels to conduct external and advocacy communications targeting the broader EN stakeholders.

Development communication- In order to enhance critical stakeholder understanding of the ENSAP mission and objectives in particular and that of NBI in general, a robust development communication is a must. Increasing ENSAP visibility in the global water resources planning, development and management landscape is also critical. Towards this end, to a varying degree of success, effort has been made to produce development communication materials, press releases, displays and other communication products.

Social Development and Communication: During the reporting period Nile Flow, Volume 4 has been prepared, along with Table Calendars and highly appreciated ENSAP calendar-cum-outreach education material. These were distributed to the NBI family, and to participants in Nile Day Celebrations, ENSAP-organized workshop participants. During the reporting period, support extended to the Ministry of Water and Energy of Ethiopia in the planning and implementation of the 2014 Nile Day Celebrations. Communication support also provided to the 27th ENSAPT/26th ENCOM Meetings. The Permanent Secretaries of Nile Basin Ministries visit in Ethiopia was successfully concluded – with briefings, site visits and direct engagement with communities - to Eastern Nile Watershed Management program which was both an outreach and stakeholder involvement undertaking.

Short-term outcome 2.1: Stronger EN institutional architecture at National level to identify, prepare and implement cooperative developments

Eastern Nile Watershed Management Project:

Experience exchange visit: Five international experience visits were organized and conducted (India from 8-17 March 2010; Ethiopia from 26 March-4 April 2011; Ruanda from 1-9 July 2011; Tanzania from 13-22 May 2012), China from 15 June to 04 July 2013. The exposure visits have provided insight into the different approaches and tools used in planning and monitoring of watershed projects, exposed participants to the different types of interventions/technologies applied for sustainable watershed management, and to the various enabling environments (policies and strategies, legal aspects, institutions arrangements). By and large, it enabled participants to draw lessons on best practices and adopt in their own project area.

Implementation review and support mission: Six Review and Implementation Support Missions (RISM), comprising of funding and implementing agencies, were carried out in 2010, 2011 and 2012(four in 2010 and one each in 2011 and 2012). The RISM is undertaken biannually with the objective to review the Project's overall implementation progress. At the end of each mission, the team prepares Aide Memoire that summarizes the findings, recommendations and next steps through a formal wrap-up meeting. The series of missions were instrumental to expedite execution of projects' components and activities and also enabled projects to achieve significant outputs and outcomes.

Mid-Term Review: A Joint team of experts comprised World Bank, Govt. of Finland (GoF), the project staff of the Federal and Regional governments as well as representatives from ENTRO conducted Mid-Term Review (MTR) of the Tana-Beles Integrated Water Resource Development

Project from 25 April-06 May 2011. The Fast track watershed is a major component of this project.

Training workshop on IWSM: A week long training workshop on Integrated Watershed Management was organized in Bahir dar, Ethiopia from 09-15 November 2009. Its objective was to enhance the technical capacity of institutions involved in watershed management so that they can undertake effective planning, monitoring & evaluation of watershed management interventions. A total of 26 participants drawn from Egypt, Ethiopia, and Sudan attended the training workshop. The training enabled participants to have adequate conceptual understanding and acquire the necessary skills in the design and management of watershed development projects and also enhanced their capacity in managing watershed development activities efficiently and effectively. This has been, practically, reflected in the satisfactory implementation performance of fast track projects at national level. Two consultation workshops conducted in 2012 and 2013 (Social Safeguards and conflict management workshop and Environmental and social management workshop. Four capacity building trainings conducted in 2012 and 2013 (Training workshop on design and construction of drainage control structures, Training workshop on Results and Process Based Monitoring and Evaluation of watershed projects, On the Job training on Soil and Water Conservation, and training on Rain water Harvesting & Utilization.

Road map prepared for regional capacity building: The capacity building module was prepared that will serve as a road map to guide the regional capacity building activities over the life time of the project. The module focuses on three main activities: training workshop with duration of 8-10 days; a workshop with duration of 2-4 days and an exposure visit of up to 15 days. Under each main activity, thematic areas and their content are defined and a guide developed to selecting participants (target groups) for each of the main activity.

Nile Cooperation For Results (NCORE):

Internship program: ENTRO internship program is envisaged to be useful to the interns by providing them an exposure to working in a regional institution, develop a regional perspective for their work, learn new tools, techniques, and methodologies, interactive with other regional and international staff/consultants/interns. It also contributes to the work of ENTRO in fostering improved cooperation on water resources development and management in the Eastern Nile, including work on information/analysis, institutional capacity-building, and investment facilitation. The internship program successfully delivered the following tasks: Updated the Geo-database of EN Atlas and created EN Atlas, developed Web based Information Management System, updated some of the factsheets according to the progress of the projects; and uploaded reports of ENTRO's previous projects on the web portal, enhanced and revised previous dam safety toolkit, enhanced the pervious Watershed Management Toolkit; and Prepared Watershed Management field guide for technicians of soil and water conservation in Eastern Nile, and developed agricultural model for Sudan.

Dam Safety: Three national capacity building trainings workshops were facilitated so far by ENTRO. The first training workshop on Dam safety management principle, Social and Environmental issues in dam safety management were held from 07-09 October 2013 in Nazareth, Ethiopia. Its objective was to review the draft Dam safety Guideline Inception Report and EN Dam safety Practice Assessment Report and collect feedback from stakeholders; develop

the necessary practical skill and knowledge to understand the complex issues involved in dam safety management and, enhance capability and competence to evaluate dam safety performance at different levels in the EN countries.

The training workshop has achieved the following results: The draft Dam safety Guideline Inception Report and EN Dam safety Practice Assessment Report reviewed; enhanced knowledge and skill of participants on Dam Safety management and ESIA; awareness created and capability improved on the evaluation of Dam Safety performances; international and EN countries' experiences shared, and networking established among Dam Engineers and environmental experts in the EN countries.

This second training program emphasized on potential failure mode Analysis, particularly on best practice for Key Issues in Dam Safety. The Koga dam, located in the Tan Beles sub basin was selected to exercise the PFMA.

The objectives of the Training Workshop are the following: Hands on training on concept and application of Potential failure mode Analysis (PFMA) and Risk informed decision management (RIDM); to develop the necessary practical skill and knowledge to understand the complex issues involved in dam safety management; to enhance capability and competence to assess dam safety at national level; to practice the first PFMA on the sample dam, Koga; train national teams to be able to do PFMA on other dams; and provide training on best practices of dam safety management.

The training workshop has achieved the following results: Enhanced knowledge and skill of participants on PFMA, awareness created and capability improved on Dam Safety management that enables the participants to practice the skills gained on the other dams in their countries, International and EN countries' experiences shared, and networking established among Dam Engineers in the EN countries.

The objectives of the third dam safety workshop were to: present the PFMA analysis done at national level (2 dams in Ethiopia and 2 dams in Sudan); review updated report on dam safety practices and baseline assessment on existing large dams in EN countries; to review the draft EN large and small dams safety guideline and obtain feedback; and review the proposed road map for dam safety framework preparation

Short-term Outcome 2.2: Stronger EN institutional architecture at regional level to identify, prepare and implement cooperative developments

ENTRO Web Portal Enhancement: Through its project preparation activities, ENTRO has accumulated a considerable volume of data, information and knowledge. These knowledge resources need to be properly captured, managed and made available to a wider group of users. After finalizing the development of the web portal, ENTRO faced the challenge of adding additional features as well as populating the portal with relevant information. Thus, ENTRO has planned the enhancement of ENTRO web-portal. The enhancement helps ENTRO to improve its online public information dissemination, communication, and outreach. Accordingly, the

enhancement was started during the reporting period by a consultant, who has been working jointly with ENTRO in-house staff.

Short-term outcome 3.1: Increased Integration of gender, social development and environmental dimensions in ENSAP

Eastern Nile Watershed Management:

Workshop on Watershed and Climate Change: The workshop was organized from 24-26 January 2010 in El-Sukhni, Egypt and attended by 26 participants from the three EN countries and ENTRO. It focused on the critical role that watershed management shall play in climate adaptation strategy at national, regional and even global levels.

National workshop on Watershed Management & Conflict Transformation: This workshop was organized from 01-04 October 2011 in Khartoum, Sudan and attended by 21 participants drawn from the three Local Implementation Units (Lower Atbara, Dindir and Ingasena LIUs) and National Project Coordination Unit (Khartoum office). The workshop focused on providing conceptual background to natural resources based conflict; reviewing experiences within and outside the Eastern Nile basin through presentation of case studies and assesses their implication for the design of watershed projects in the Eastern Nile basin. The discussion was also enriched by participants from the three LIUs.

The two workshops contributed in creating awareness, enhancing knowledge and experience, and increased the technical capacity of participating institutions in developing strategies and plans to mitigate impacts of climate change.

Social Development and Communication Unit:

Overall cumulative result is the continued institutionalization and mainstreaming of social development in ENSAP strategies, plans and project preparation. SDCU organized regional social development capacity building workshops which have enabled ENTRO technical staff, particularly the IDEN project regional coordinators, appreciate and actively seek social development input into their projects to ensure their social sustainability.

Short-term outcome 3.2: Increased ENSAP cooperative investment projects prepared for implementation with finance and implementation arrangements in place; fast track projects implemented and new projects identified

Eastern Nile Watershed Management:

Since 2004, the ENWSM Project has been undertaking two parallel activities which have delivered two key results:

(a) *A Cooperative Regional Assessment (CRA)* – An agreed process and tool of the three riparian – which through a “without-borders” transboundary analysis of the entire EN and sub-basins established the baseline and characterized the watershed system. Through a distributive analysis, worked out the environmental, social and economic distribution among the three EN countries of the positive and negative effects that will impact upon watershed management interventions and finally through the cooperative mechanism analysis identified the institutional requirements and implications for a basin wide watershed intervention. The CRA process, apart from providing a technical deliberation consultation platform for the three countries, has also been a confidence building-cum-capacity/knowledge building mechanism which has imprinted a “watershed perspective” in the three countries.

(b) *Fast Track Projects* – A key outcome of the CRA has been the design of long term watershed program for the Eastern Nile, which identified critical hotspots and 13 investment projects for national implementation, which are of special value when viewed in the context of large scale projects such as the Joint Multipurpose Program. Currently, the following watershed management projects are under implementation in the three countries: Upper Rib, Upper Gumera, and Jemma (Ethiopia); Dindir, Ingasena, Lower Atbara, Lau (Sudan) and Lake Nasser-Nubia (Egypt).

Establishment of Basin wide sediment and water quality monitoring: The basin-wide erosion, sediment & water quality monitoring framework is envisaged to establish a system within ENTRO to systematically collate and store relevant data and information for effective watershed management planning, monitoring, evaluation and undertaking environmental, social and economic impact studies. The monitoring system will establish a long-term coordinated system for monitoring of erosion and erosion control; sediment loads and land cover change at various catchment scales as well as assessment of water quality parameters at key locations.

This activity was planned to be carried out in two phases:

Phase I: Review of existing situation: The phase I study (review of existing situation) was completed in January 2011. In this phase, a basin-wide comprehensive assessment of on-going sediment & water quality monitoring has been carried out, where the existing situation has been reviewed; gaps and follow-up activities were identified.

Phase II: Design of basin-wide sediment and water quality monitoring system framework: It was finalized during the reporting period. This activity produced a framework for design of long term sediment and water quality monitoring system and prepared a guideline for harmonization of standards and methods of data collection and quality check.

Delineation and prioritization of watershed investment projects: This activity was conducted with financial input of ISP project. The task was done in two steps: delineation and prioritization. Delineation of sub-watersheds was done through document review and field assessment. A list of 10 projects (hotspots identified during the CRA study) was provided to the consultant. A delineation of each project was made into Watersheds of manageable size (i.e. 1,000 – 2,000 km²). Key issues, challenges and potentials for each of the ten micro-watersheds were identified through document review, field assessment (to collect additional data to augment the information available from document review), and stakeholders’ consultation.

Main outputs of this task include:

- main report summarizing the approach and methodology; review of project profiles and result of delineation of investment projects; and ranking and prioritizing of watershed investment projects,
- Ten documents in which each of the delineated investment projects are described in detail including their specific location (supported with maps), key issues, ongoing programs, and key stakeholders.
- *Development of scaling up strategy for the watershed projects in the Eastern Nile:* Scaling up of watershed projects requires a broader and longer-term commitment than simple technology dissemination. Watershed management efforts will thus remain islands of success unless these institutional elements can be replicated on a wider scale. However, adoption and scaling up of successful practices is faced with barriers. A number of critical factors contribute to the low level of adoption and scaling-up.

Its objective is to develop a strategy to scale-up best practices and approaches in watershed management, building on the lessons learned from implementation of on-going fast track projects and other experiences in the region, with the objective to promote sustainable land use cover bigger geographic areas in the Eastern Nile region. To this end, a detailed and comprehensive strategy document was produced on scaling up of best practices and approaches in watershed management in the EN.

Preparation of investment projects in watershed management: The overall aim is to conduct studies leading to the preparation and design of investment projects for four watersheds (Chemoga, Fincha, Upper Atbara, & Tulkuk) in Ethiopia and Sudan. The goal of these investment projects is to promote sustainable livelihoods among the communities within the watersheds by employing various development interventions. The inception phase of the project preparation was concluded and the detail study is progressing.

Knowledge Management: The finalization of the knowledge base development for previous ENTRO projects and the knowledge base updates has been carried out; Eastern Nile Multi-Commodity trade model developed; The Eastern Nile Multi-Sector Investment Opportunity Analysis (ENMSIOA) study was started. The study aimed at identifying and prioritizing the next set of investment projects by integrating all sector based projects previously identified by ENTRO or by the countries themselves and studying the cumulative effect;

Flood Management: A flood forecast bulletin was issued every week for the Gambella flood plains, Lake Tana Model Forecast was operationalized, Sudan FEWS has been operationalized, and weekly flood bulletin were produced and disseminated.

Social Development and Communication Unit (SDCU):

Direct social development input to ENSAP IDEN project design and preparation through participation in workshops, review of and feedback into project consultant documents (inception, draft and final reports) has supported entrench the culture of consultation in ENSAP. SDCU regular participation in reconnaissance studies, project monitoring, ENTRO strategic plan formulation, in the (re)design of ENTRO organizational structure and institutional development, and management meetings etc. has cumulatively contributed to the effective functioning of the different ENSAP organs, foremost ENTRO.

Begun through the generous support of DFID within ENTRO, the cumulative result here is the increasing institutionalization and mainstreaming of the social development agenda in ENSAP project preparation and institutional development. A major evidence of this is that social development has been made an integral, cross-cutting function of ENSAP, with its own unit, enjoying all round support by management and regional project coordinators.

3.3. Sustainability of Results:

The various watershed management interventions accomplished in the EN countries are very much relevant to the ongoing activities at national level and will be put immediately in to practice. In addition, various capacity building trainings and workshops have been facilitated at national level to strengthen their implementation capacity.

Around 99 professionals from the two countries (Ethiopia & Sudan) were provided practical oriented training in different thematic areas. A further 19 professionals from the three countries (Ethiopia, Sudan & S. Sudan) attended a workshop on scaling up strategy for watershed. The training workshops that were conducted early on have enabled participants to have adequate conceptual understanding and acquire the necessary skills in the design and management of watershed development projects and enhanced their capacity in managing watershed development activities effectively and efficiently. This was practically reflected in the satisfactory performance of the implementation of fast tract projects by national institutions. The training and workshop provided during the reporting period is expected to enhance the technical capacity of institutions involved in watershed management to undertake effective planning, monitoring & evaluation of watershed management interventions and thereby strengthen the role and capacity of national institutions in participating countries in the delivery of pro-poor investments and services to promote productive and environmentally sound livelihoods with local community participation.

Among other things, the workshops on scaling up strategy for watershed contributed in creating awareness, enhancing knowledge and experience, and increased the technical capacity of participating institutions in devise and implement strategies for scaling up watershed management projects in national and regional settings. Participants of this training were made part of the joint technical team in the preparation of new round of investment projects which will further strengthen their capacity to undertake such preparation on their own in the future.

The review and support missions carried out in the past have significant contribution in expediting execution of project activities to be on track and enabled projects achieve the intended outputs and outcomes.

It was found that the various interventions made in enhancing national capacity are very much relevant to the ongoing activities at national level and will be put immediately in to practice. All these efforts have added value to sustain the gains achieved so far.

4. Project Management:

ENTRO has continued its considerable effort in coordination and management of ENSAP projects with strong team-spirit and collaboration within ENSAP projects and other crosscutting functional units. Although, it was unable to implement regional activities as per the planned schedule, because of the current situation in the NBI, ENTRO devised alternative strategy and implemented regional activities separately at national level, as per the countries specific needs, in consultation with national project coordinators of the EN countries. In addition, ENTRO initiated and implemented internship program, which was successful, with some of the EN Universities as a solution measure to run planned interventions.

5. Program/Project Expenditures:

Currency USD

Budget Items/Projects	July 2013-June 2014			Reasons for the variance
	Planned Budget	Actual Expenditure	% utilised	
Nile Cooperation for Results Project	893,872	661,255	74%	
NBI Institutional Strengthening Project	966,808	906,365	94%	
Joint Multipurpose Program ID Phase I	1,249,046	712,876	57%	
Watershed Management Project	474,154	330,538	70%	
Eastern Nile Planning Model	4,705,906	3,055,640	65%	
The State of the Netherlands Support	7,372	6,498	88%	
Riparian Countries Contribution	240,000	16,618	7%	
French Technical Support (AFD)	200,366	200,366	100%	
GIZ	9,460	9,460	100%	
Reserve Fund	20,147	20,147	100%	
Total	7,873,259	5,919,762	75%	

6. Major Challenges & Constraints and Mitigation strategies applied:

Associated with Knowledge management sub component of NCORE project the main challenges include: Limited time to cover the task before project completion time for MSIOA project; ENTRO has faced a challenge in hiring individual consultants with limited budget for the

MSIOA study; data in availability for agricultural model for Egypt, Ethiopia and South Sudan; and limited financing for providing essential trainings for the young professionals.

The major challenge for the watershed project was the inability to conduct the planned regional training workshops because of the freezing of regional activities. However, the situation has been changed since January 2014 (with the unfreezing of Sudan and the joining of South Sudan as new member of ENTRO) and created the opportunity to initiate regional activities. The current interim arrangement: (undertaking capacity building activities at national level based on specific project needs with a prime objective of expediting implementation of national projects effectively and efficiently) was found effective and will continue in parallel to the regional activities.

7. Lessons Learned and Recommendations:

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 Liaoning between countries of activities being carried at regional and national level. This good and effective communication has helped the project implementation to progress relatively smooth 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.

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 various Implementation support missions and MTR.