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Nile-Flow

this issue

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We Work for the Shared Benefits of Cooperation



What is in a name?

We have chosen "Nile -Flow" as the name of our Newsletter.

Nile – Our great river.

Flow – the flow of our great river, running through the three sisterly Eastern Nile Subsidiary Action Program (ENSAP) Countries of Egypt, Ethiopia and the Sudan; connecting the people, their cultures, their histories and shared destinies since time immemorial.

Flow – in the psychological sense also symbolizes a feeling of energized focus, of total engagement, and success in the activity being undertaken– i.e in the ENSAP cooperation process we are all engaged in.

Thus the twin message: a description of reality, on the one hand, and a statement of hope, vision and purpose on the other.



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Hopeful Signs

ENTRO has been forced to stay in a sort of limbo for nearly four years, since June 2010, when six upstream riparians concluded the negotiations and signed the Nile Basin Cooperative Framework Agreement (CFA) and consequently, objecting to this, Egypt and Sudan froze participation in NBI, including in ENSAP/ENTRO. In actual fact, the freezing, was in a way partial, for ENTRO never stopped functioning and there were always ways to engage the countries, albeit less formally, for example thru the Internship program in which sixteen universities from the four Eastern Nile countries collaborated with ENTRO.

Since January 2014, however, the cloud of uncertainty hovering over ENTRO has cleared off. In January 2014 ENCOM, the Eastern Nile Council of Ministers, the highest governing body of ENSAP, and thus of ENTRO, held its 26th Meeting in Bishoftu, Ethiopia. This ENCOM Meeting was the first after a four year interruption. During this meeting Sudan, having paid off its entire outstanding country contribution, rejoined ENTRO and resumed participation in ENSAP. The Republic of South Sudan was also admitted to ENSAP. In less than six months, a second ENCOM Meeting, the 27th was held in Khartoum, Sudan. In this meeting milestone decisions have been made. Among others, ENTRO 2014/15-2019 Strategic plan; the NCOM/ENSAPT Rules of Procedure with important provisions (including the decision to cover minimum functionality cost of ENTRO trough country contribution), along with Procurement Manual and most important the decision to put in place a new ENTRO Management including endorsement of the new ENTRO ED, Mr. Fekahmed Negash and the authorization of ENSAPT to proceed on with the hiring of the ENTRO Finance and Administration Head and Senior Regional Project Coordinator soonest.

Equally encouraging is the commitment ENCOM made to do all what is possible to bring back sisterly Egypt – the only remaining major riparian – into the ENSAP/NBI family. We trust and express our best wishes for their efforts to be successful.

With these developments and hopeful signs, ENTRO has reinvigorated itself and is set to embark on its core function of promoting cooperation thru preparing investment projects and water resources planning and knowledge and capacity building as indicated in its 5-year strategic plan, worth nearly a 100 million USD. With country commitment to increasingly shoulder the operating costs of ENTRO, we trust this will send the right signal to all friends of the Nile and development partners to come to our assistance in the technical and financial domains to get going cooperative Nile water resources planning and development so crucial for the security and development of this vital geo-strategic region.

*Wubalem Fekade, Ph.D.
Head, Social Development and Communication Unit,
August 2014*

Watershed Management Training Workshop

Feb 07-10, 2014. Nazareth, Ethiopia.

It is to be recalled that the key output of the Watershed Management Cooperative Regional Assessment (CRA) was development of a long term program for Eastern Nile, which identified four major components including the preparation of watershed investment projects in hot spot areas of the basin. A total of 13 hot spot areas were identified and project profiles prepared for each of them. In 2010/2011, ENTRO had commissioned a consultancy to delineate the identified and prioritize hot spots into manageable size. The first four prioritized hot spots areas have been identified and delineated.



ENTRO's watershed work under the NCORE project is related to support this process by helping the countries to conduct studies (institutional, environmental, social, economic and technical aspects of watershed management) leading to the detailed preparation and design of watershed investments projects by providing technical assistance and training to national institutions.

This training on scaling up strategy is one among serious of capacity building activities ENTRO is leading under NCORE. The objective of the training workshop has been to build the capacity of national institutions on strategie 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, and thereby assist national institutions to conduct and advance detailed project preparation for four identified sub-watersheds from technical, environmental, social, economic, financial, and institutional perspectives.

National staff of member countries, ENTRO staff and interns attended the training workshop. A total of 34 participants attended of which 15% were female.

Water Diplomacy Workshop

Feb 5-6, 2014, Nazareth, Ethiopia.

The process of formal negotiation track for a CFA, however robust and well designed, is too constrained by the rigid prescriptions of Track I i.e. government-to-government diplomacy as dictated by the interests of defending sovereignty; by the burdens of history; by the oft win-lose ori

entated calculus of geo- and hydro-politics and by the grip powerful vested national stakeholders have on the policy and decision making processes. Track I negotiation, therefore, is too formalized and prescribed to be open and flexible enough to search for innovative ways of resolving the problem in a spirit of exploration and problem solving. The idea for this Track II Water Diplomacy emerged from a major dilemma ENTRO is grappling with: how, without violating the limits of its mandates [that restrict it to only preparing cooperative investment programs and building knowledge and capabilities] to promote exploration of new ideas and approaches on the part of non-formal actors and stakeholders (within and outside the region) to eventually inform or otherwise feed to the negotiation process for more positive, win-win, breakthrough outcomes?



The objectives of the workshop are 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 workshop was well attended. A total of 56 participants took part in the training workshop including from Eastern Nile Government offices and Universities, current and ex-diplomats, Interns, ENTRO staff, Nile SEC, Swiss Agency for Development Cooperation and consultants. In terms of gender composition, 14% were female participants. The workshop was led by Shafiqul ("Shafik") Islam, Professor of Civil and Environmental Engineering and First Bernard M. Gordon Senior Faculty Fellow in Engineering at Tufts University. Dr. Wubalem Fekade, ENTRO, supported and facilitated the preparation.

NCORE 3rd Consultation Workshop

3rd -4th Feb 2014 Nazareth, Ethiopia.

The development objective of the NCORE is “to facilitate cooperative water resource management and development in the Nile Basin” through the provision of targeted technical assistance to the NBI member countries and broader stakeholders, to facilitate cooperative activities, improve integrated water resources planning and management, and identify and prepare studies of potential investments of regional significance. The Nile Cooperation for Results (NCORE) Project is the first phase of the Nile Basin Climate Resilient Growth Program and is part of the overall NBI Strategic Plan.



Objectives of the workshop were the following:

- To Present the progress of NCORE activities and achievements, and obtain feedback from key stakeholders,
- To consult with stakeholders on implementation progress of special studies which would be executed jointly by EN Universities,
- To 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,
- To introduce the second batch young professionals/ Interns to EN key stakeholders, and
- To present activities undertaken by the second batch of Interns.

A total of 67 participants attended the training workshop representing EN Government offices and Universities, Interns, ENTRO, Nile SEC, WB and consultants. In terms of gender composition, 15% were female participants.

Dam Safety Training Workshop

January 27 - Feb 01, 2014, Bahr Dar, Ethiopia.

Water infrastructure of varying sizes is being constructed across the Nile. Careful coordination of dam safety-related planning and management is therefore a priority action that should accompany, if not precede such developments. Proper operation and maintenance of this large water infrastructure is vital to minimize the risks of a catastrophic disaster.

As of now there is no regional framework or institute responsible for dam safety management. Hence, dam operational safety management has become an emerging issue of the EN region. Dam safety management aims 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 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 has been formulated.

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

The Training included: Hands on training on concept and application of Potential failure mode Analysis (PFMA) and Risk informed decision management (RIDM); imparting practical skill and knowledge to understand the complex issues involved in dam safety management; enhancing capability and competence to assess dam safety at national level; practicing the first PFMA on the sample dam, Koga; training national teams to be able to do PFMA on other dams..

Participants have expressed appreciation of the workshop and the skill enhancement they got in improving dam safety management and appreciation of the imperative of regional approach to dam safety management.

Twenty-nine 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.

Baro-Akobo-Sobat (BAS) Multi-Purpose Water Resources Development study Project Institutional Launch Workshop

(27th -28th Feb 2014, Addis Ababa).

Baro-Akobo-Sobat (BAS) Multipurpose Water Resources Development Study Project is one of the eight (8) IDEN sub-projects. It was also one of the five (5) projects that the African Development Bank (AfDB) had expressed its willingness to support during the International Consortium for Cooperation on the Nile (ICCON) Geneva meeting of 2001. The BAS project was however stalled, for over ten years due to inaccessibility to parts of the project areas for data collection and later due to delays in resource mobilization and due to the overall insecurity of the area. However, following the Comprehensive Peace Agreement of 2005 in Sudan, ENCOM instructed ENTRO to revitalize the BAS project and pursue consultations with AfDB to secure funding for its preparation.

ENTRO accordingly started to cover the BAS Sub-basin in some of its ENSAP studies and activities such as: Cooperative Regional Assessments (CRA) of Watershed Management, Irrigation and Drainage as well as the One-System Inventory of the Joint Multipurpose Projects (JMP). In September 2009, ENTRO successfully organized a Regional Planning Workshop for BAS project that brought together governance from the EN-Countries, local communities and civil society to define the direction and overall objective of the BAS Project and outline project study approach. The outputs of this Planning Workshop were internalized and the project financial proposals were submitted to AfDB facilities. Finally, ENTRO signed grant agreement with AfDB on the 2nd of May 2013. Accordingly, ENTRO organized institutional launch workshop of the project because of the following objectives.

The primary objective of the institutional launch workshop is to disseminate information to key stakeholders regarding the status of the BAS Project; specific to: avail information to key stakeholders regarding plans for the preparation of the BAS Project Main Study and its components, and 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 improved understanding by key stakeholders of BAS Project, its main study and components, and team building among BAS Regional and National Project Coordinators.

A total of 61 participants attended the launch workshop representing EN government offices, ENTRO, Nile SEC, NELSAP-CU. The workshop was also attended by a number of development partners and representatives of the donor community and members of the diplomatic corps from the Nile riparian countries in Ethiopia, women and the media groups.

SDC 1st Consultation Workshop

13th-14th April 2014, Khartoum.

Both ENTRO and EN countries require a wide range of planning data, information and knowledge for informed planning and decision-making regarding management of water resources in the Eastern Nile. They particularly need a shared hydro-meteorological capacity and appropriate decision-support tools to undertake efficient management of irrigation, rain-fed agriculture, watershed and sediment, floods and reservoirs. Currently, however, monitoring data and information in the Eastern Nile is fragmented and inconsistent, basic hydro-meteorological data are lacking, information sharing is limited, and the analytical tools and computer models are not yet fully operational.

The proposed Nile-SEC hydro-meteorological monitoring system is envisaged to help ENTRO and the countries in addressing some of the identified gaps. ENTRO needs, however, go well beyond exclusive hydro-meteorological monitoring to include issues of the types and uses of basin monitoring data that could be integrated in the identification, preparation and effective implementation of investment projects on the ground. Simultaneously, it is important for ENTRO that its monitoring activities are relevant to the needs of member countries, who are the primary stakeholders both as suppliers and users of monitoring data and information.

The workshop aimed at promoting consultations and networking among a range of key stakeholders whose work and decisions relies on up-to-date and valid monitoring data in the Eastern Nile Sub-basin.

The major specific objective of the first ENTRO workshop was to raise awareness on hydro-met data and their value in a wide range of fields. Apart from engaging in discussions on the availability, use and value of hydro-met data in the Eastern Nile Sub-basin, the workshop was anticipated to enable participants to acquire information on available data; provide examples for what the data are used for, foster networking among EN officials and technicians, and identify areas for collaboration between experts and professionals from EN countries.

To this extent, the first workshop has set the scene for collaboration on monitoring in the Blue Nile under the proposed

SDC supported project. Identification and synchronization of country priorities will provide the basis for a demand-driven design of the proposed project.

A total of 74 participants attended the consultation workshop who were from Government offices/institutions and Universities, ENTRO, and consultants. Nile SEC, Swiss Agency for Dev't Cooperation (SDC) and Embassy of Ethiopia in Sudan were represented by one participant each. In terms of gender composition, 11% were female participants.



SDC 2nd Planning Workshop

15th-16th May 2014, Addis Ababa.

ENTRO-SDC Partnership: In addressing the challenge of data and information for decision-making purposes, ENTRO and Swiss Development Cooperation (SDC) agreed to partner on a project for Hydro-met monitoring on the Abbay/Blue Nile Sub-Basin. In refining the focus of the proposed project, it was necessary to avert duplication of the project on basin-wide hydro-meteorological monitoring system that the Nile Secretariat (Nile-SEC) plans to launch. It was accordingly agreed to coordinate and synchronize the planning of the two projects. The proposed project, with the components to be refined and more precisely defined, is also conceived as a first phase in an extended ENTRO-SDC partnership, with a second phase for follow-up and consolidation of achievements.

The overall workshop objective was to reach common view among ENTRO, EN countries and SDC on the details of the proposed project on hydro-met monitoring. More specifically, by reviewing the proposal ENTRO compiled on the basis of its prior consultations with countries and SDC.



A total of 77 participants attended the planning workshop who were from Government offices/institutions and Universities, Nile SEC, Swiss Agency for Dev't Cooperation (SDC), UNESCO-IHE, ENTRO, and consultants. In terms of gender composition, 13% were female participants.

ENTRO's Donor Open House

7th March 2014, Addis Ababa.

The Eastern Nile Technical Regional Office (ENTRO) of the Nile Basin Initiative¹, organized a half day Donor's Open House on March 7, 2014 at its offices in Addis Ababa, Ethiopia with the objective of briefing Development Partners on its past achievements, current activities and future plans. Since its inception, ENTRO has focused on supporting Eastern Cooperation through identification, preparation and facilitation of implementation of regional projects. As one of the three Centres of the Nile Basin Initiative, ENTRO has benefitted from the unequivocal support of both its owners- the Eastern Nile Countries and its Development Partners. Following the formal admission of South Sudan into the Eastern Nile Subsidiary Action Program, and the decision of Governance to reinvigorate ENTRO in an all inclusive approach, it was felt appropriate that the Development Partners be briefed on these developments in an Open House.

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



Nile Co-operation, and laid the foundation for furthering the partnership with Development Partners.

In spite of the relatively short time allotted for the planning of the event a total of nine organizations were represented in the program comprising of Addis Ababa based Partners as well as some travelling from their Headquarters.

Strategic Retreat

22nd -26th April 2014, Nazareth.

The 26th ENCOM meeting has instructed ENTRO to organize a Strategic Retreat with ENSAPT and submit the outcomes of the retreat to the 27th ENCOM meeting. Therefore, the purpose of the retreat was to promote consultations and consensus building on a number of strategic issues which include: ENTO Strategic Plan (2014-2019), ENSAPT/ ENCOM Rules of Procedure, ENTRO Organogram, and ENSAP Results Chain.

A total of 21 participants from ENTRO and ENSAPT attended the Strategic retreat In terms of gender composition, 14 % were female participants.

DAM SAFETY WORKSHOP

June 30- July 1, 2014, Khartoum, Sudan.

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.



The objectives of this third dam safety workshop are: To present the PFMA analysis done at national level (2 dams in Ethiopia and 2 dams in Sudan); to 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 to review the proposed road map for dam safety framework preparation

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.

The Health of Rivers *By Wubalem Fekade, Ph.D., Social Development and Communication Unit, ENTRO*

Introduction

So, you may wonder. What in the world does this mean?! How come one speak of the “health of rivers”?! Could rivers be sick, and ill, if we also think of the corollary? These are fair questions. Before going any further, however, we need to agree about what we mean when we speak of rivers. What is a river, after all? Is a river simply a channel through which water flows? Or there is something more to it?! Well, for all intents and purposes, a river is a living system, with many parts that work together. It is helpful, therefore, to briefly outline the key components that give each river its unique structure and appearance. We shall later see how a river gets sick when the integrity of its components, and their harmonious functioning, is impaired.

The Structure of a River

The Source (Headwater)

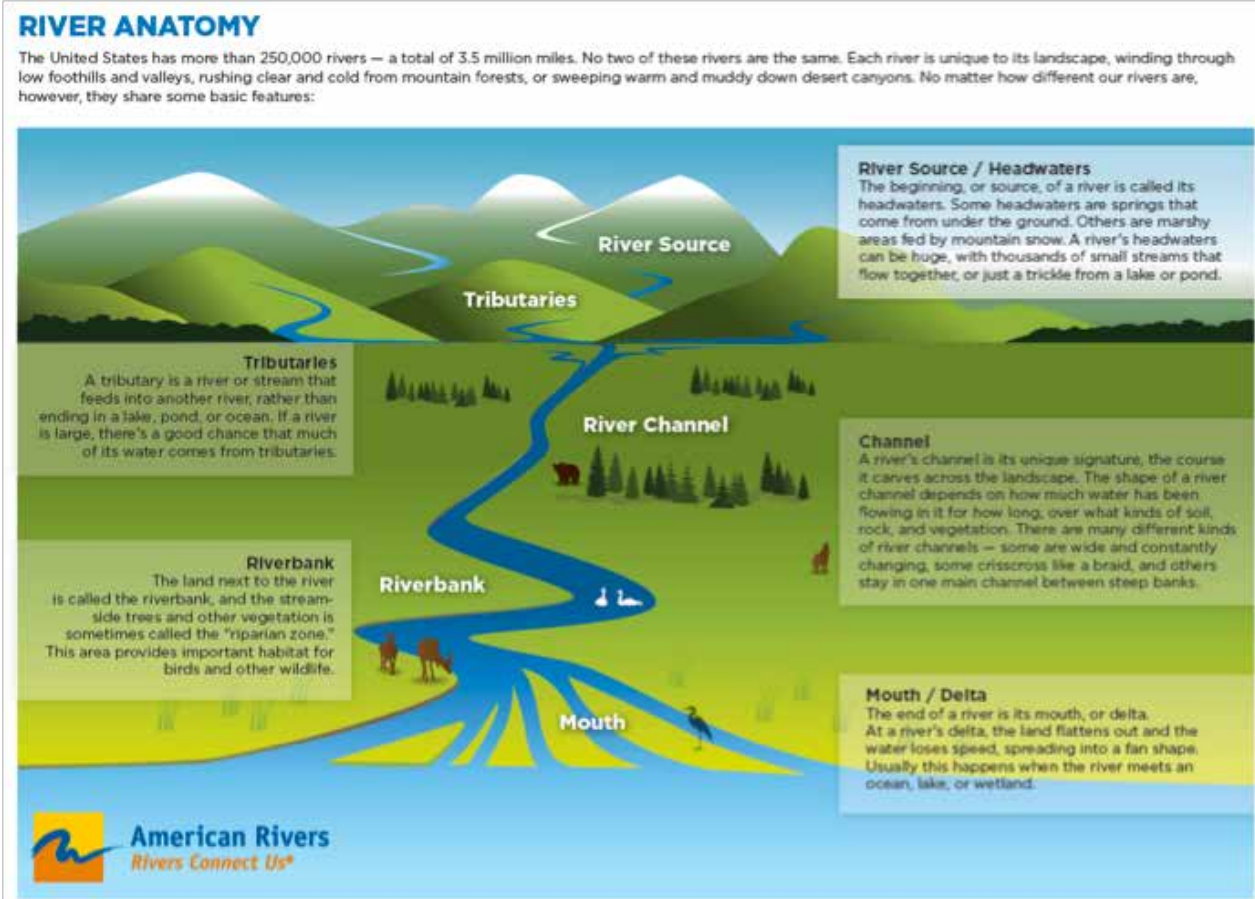
Let us begin at the beginning. Rivers start flowing out and downwards from their sources, also called head waters, because they lie at the head of the river. Mighty rivers like the Nile or the Congo or the Mississippi often begin their long journeys from very small sources or head waters - springs, marshes, or lakes which often are filled and refilled from melting snow in mountain tops or from underground springs. Headwaters, as the starting points or sources of a river, are important. Headwaters are important because what happens in the head matters most (that is also true for humans!). One cannot have a well functioning individual if his or her head is not alright. Same is true for river systems. When the headwaters are polluted or otherwise rendered dry and unhealthy, you cannot have healthy rivers flowing downstream.

The Waterway (River Channel)

A channel is simply a way or a path in which the water of a river flows through. No two rivers have identical channels. Channels, in a way, are the fingerprints of rivers. They are unique to each river and each has its own structure and shape (morphology). Channels represent the history of the course of the river – the signature it has made on the landscape. Some channels are narrow and deep, located between steep gorges (such as the stretch of the Blue Nile/ Abbay between Ethiopia and the Sudan border), others are wide and shallow; some channels are formed and constant; others are always changing; some channels roam and meander, bending, twisting and crisscrossing (such as the Baro-Akobo-Sobat in Southern Sudan), others follow fixed routes. The shape of a river channel is a result of how much water, what kind of water and for how long has been flowing in it. It also depends on the bed material, the type of soil or rock that provides the foundation for the channel. Understanding the nature of channels is important for flood water management (for retaining the water in the channel), for bank erosion (prevention of erosion and collapse of banks) and sediment transport and deposition (prevention of the river bed from being filled up with rock and sediment).

The Sides of a River (Riverbank)

A river bank is the stretch of land immediately alongside the river and runs parallel to it. The river bank, together with the trees and vegetation on it, constitutes a special area, called the riparian zone. When a river over flows, which often happens during the high seasons, it leaves nutrient rich deposits on the riparian zone. That is why riparian zones provide important habitats for birds and wildlife.



The Branches (Tributaries)

Large rivers like the Nile are fed by smaller rivers as they flow further downwards. Tributaries might have smaller rivers that feed them in turn. A tributary is a river that does begin somewhere and ends up in another river. The Main River (stem) is the one that, having received water from hundreds of tributaries, and having grown larger and larger in volume, ultimately ends up in a sea, a lake or ocean. Without the tributaries the main river cannot exist.

Floodplains

Floodplains are flat, smooth areas; are adjacent to rivers, lakes or coastal waters. Floodplains are underwater when the river or the lake overflows. Flood plains, therefore, are periodically flooded lands adjoining rivers, lakes, oceans. Floodplains are shaped by the hydrology of a river. Floodplains provide flat, fertile agricultural areas, since floods carry important nutrient rich sediments which they deposit in the plains. That is why floodplains historically provided the first sites for human settlement and for agriculture, such as those in the Nile Valley, and between Euphrates and Tigris Rivers which ultimately gave rise to the Egyptian and Mesopotamian civilizations respectively.

Wetlands



Wetlands are lands that are wet. Wetlands are wet because they are soaked with water from nearby rivers, lakes, or underground springs. Some wetlands stay waterlogged all year, while others remain wet for only part of the year because they dry out. In short, a wetland is an area of land that is wet for all or part of the year. Wetlands are found all over the world. But they show huge variation. Wetlands vary because of differences in soils, topography, climate, hydrology, water chemistry, vegetation, etc. There are two broad categories of wetlands: coastal or tidal wetlands (located in estuaries where river and sea, meet) and inland wetlands. Wetlands play important roles. Wetlands, as transitional zones between land and water, provide a unique conditions with diverse habitats that make them suitable home to a wide range of aquatic (water) and terrestrial (land) species – including fish, turtles, birds, mammals. Wetlands are also natural sponges, absorbing and storing flood waters during high season, and slowly releasing them, recharging ground water and springs during the dry season. Wetlands also

slow the speed of water and thus reduce flood damages and erosion.

The Delta

Where, after all, do rivers end?

Rivers, metaphorically speaking, empty their contents through their mouth (also called the delta) into a terminus, or an end point which could be a lake, a wetland, a sea or an ocean. Rivers flow downwards a slope, but eventually the slope flattens as they approach the finishing point or terminus, forcing the rivers to lose speed and drop/deposit the rich nutrient laden sediments along the way and spread out in several directions. The Nile Delta in Egypt is the mouth where the Nile drains into the Mediterranean Sea.



Deltas, like the flood plains, provided the most suitable farmlands (and also wildlife habitats) because of the rich nutrients and silt the rivers deposit. The Nile Delta is among the world's largest. The Nile Delta covers a long section of the Mediterranean coastline, stretching some 240 Kilometers from Alexandria in the west to Port Said in the east (and some 160 kilometers in length, measured a little north from Cairo.)

The Flow

A river, after all, is a life support system.

Human beings, birds, mammals, fish, plants form an intricate web of ecosystems all of which are linked to and supported by water in the river. How much, of which quality and characteristics and when water flows in a river depends upon many factors. Some rivers are seasonal. This means, at times, fed by hundreds of tributaries (during the rainy season, for example) there is huge amount of water coursing thru the rivers' channels. At other times, during the dry season, the volume of water in the river reduces significantly, sometimes even to a trickle.

The Branches (Tributaries)

Large rivers like the Nile are fed by smaller rivers as they flow further downwards. Tributaries might have smaller rivers that feed them in turn. A tributary is a river that does begin somewhere and ends up in another river. The Main River (stem) is the one that, having received water from hundreds of tributaries, and having grown larger and larger in volume, ultimately ends up in a sea, a lake or ocean. Without the tributaries the main river cannot exist.

The seasonal rise and fall of the volume of water in the river, also called its pulse, repeated over and over again, over thousands of years, has helped the evolution of the current diversity of fauna and flora uniquely adapted to the individual river system.

When we talk of the flow of a river we are referring not only to the volume and distribution of water over the year, but also about such things as water quality, temperature, sediment deposition, etc. The natural flow of rivers is in sync with all what is happening up and downstream, rising and falling and following the rhythms of the seasons. But when the river's natural flow is modified and/or regulated by dams and other water infrastructure, the lives of many species of vertebrate and invertebrate animals and plants – and the food chain thereof - in short the ecosystem that relies on the natural rhythmic pulse of the river will be severely affected and altered, depending upon the extent of modification of the flow. It is therefore advisable to manage these structures in such a way that they mimic or otherwise approximate the natural pulse of the flow of the river to prevent the associated riparian ecosystems from being severely or irreversibly degraded. This consideration leads us to the concept of environmental flows. Environmental flow is the quantity, timing and quality of water flows (flow regime or pattern) required to sustain freshwater and estuary ecosystems and the human livelihoods that depend on these ecosystems.

Putting it altogether: the health of rivers

In the preceding sections we have outlined the structural components of a river system, beginning with the head waters through the floodplains and wetlands onto the delta. We also spoke of the riparian zone, the banks, the channel, etc.

We can take analogy from the human body. The human anatomy consists of the skeletal system that gives structure to and holds the whole body together (the head, the trunk, the legs); the various parts and organs and subsystems (the brain, the liver, the lung, the kidney, the circulatory system, the respiratory system, the digestive system, the nervous system, etc.). In a completely healthy person these systems work together flawlessly to enable the individual function effectively, that is to live a healthy life. It is not much different with the river.

A river is a living system. As you cannot have a healthy individual when his or her head or back or stomach or legs

are constantly hurting or suffering, or when blood is not circulating properly, or when s/he is not breathing normally, or when s/he cannot have adequate sleep so also you cannot

have a healthy river system that is drying up at its head (say its snow cap is progressively shrinking and disappearing or its springs are drying up) or when its channel is blocked with sediment and rock that comes rolling from upstream, or when the river flow is interrupted or blocked at various sections with a range of infrastructure, or when its seasonal ebbs and flows are disrupted (much like a person's sleep – being forced not to sleep at all or to sleep only for a few hours or at the wrong hours).

As rivers support a wide array of ecosystems, including human livelihoods, it is not easy matter when a river falls ill. All those that depend on the river will eventually get sick too.

There is globally increasing recognition of the importance of keeping rivers healthy. Through adoption of environmental flows, for example, water managers implement arrangements to achieve flow patterns that help maintain the essential processes required to support healthy river ecosystems. To carry our analogy of the human body further, there are indicators and tools to assess the health of persons (e.g. body temperature, various reagents to assess blood chemistry and the health of other organs, etc.). Similarly, a number of methods, tools and indicators have been developed to assess the health of rivers.

These include biological indicators (fish, macro-invertebrate, and riparian and delta vegetation); water quality indicators (physical parameters -temperature); bacterial parameters – e.g. fecal coli form); and chemical parameters (pH, metal and non-metal toxicants, nutrients, and measures of oxygen balance); physical form indicators (channel physical form – the bank full channel capacity; delta physical form); socio-economic indicators (water consumption for a range of social and economic needs ; for hydropower generation; navigation; flood and drought risk). Note that socio-economic indicators have been included in assessing the health of rivers. The reason is simple – sustainable management of rivers is about responsible development and use of river systems, to, besides other life forms associated with specific rivers, also benefit human needs. Sustainable management is about ensuring the health of rivers, and not, as some advocate, not ever to make use of them, or develop socio-economic infrastructure around them!

The following sources have been used to produce this piece.
<http://www.wetlands.org/Whatarewetlands/tabid/202/Default.aspx>
<http://water.epa.gov/type/wetlands/what.cfm>
http://en.wikipedia.org/wiki/File:Nile_Delta_-_Naucratis.png
http://en.wikipedia.org/wiki/Nile_Delta
http://en.wikipedia.org/wiki/Environmental_flow
<http://www.americanrivers.org/rivers/about/>

"Conversations" is a section dedicated to featuring ENTRO professionals – who they are, what they do and their thoughts on how their work contributes to Eastern Nile Cooperation!

In this Issue we feature

Mr. Jemal Dagnew, outgoing ENTRO IT Officer

Q. Please tell us about yourself. Tell us about where you went to school.

I obtained my M.Sc. in December 2010 in Information and Technology from Sikkim Manipal University (SMU), India. I got both my B.Sc. (August 9 2005) and Diploma (February 23 2002) in Computer science from HiLCoE School of Computer Science and Technology, Addis Ababa, Ethiopia. I am married and already am a father of three wonderful children (two girls and a boy). I have also attended and obtained a number of Microsoft and other international certifications in ITC (information and communication technology).

I can say I first opened my eyes to the computer world in HiLCoE School of Computer Science one of my favorite colleges. This is the place where I learnt about the ins and outs of Computers and technology as a whole when I majored in B.Sc. in Computer Science

Regarding my hobbies, I like to watch movies and I also like reading (in truth it is rather surfing the internet chasing information after new technologies, facts etc.) I also like playing football.

Q. How did you get interested in computers and IT? Were most of your age mates interested also in these fields? What attracted you to IT? What ambitions did you have?

When I was growing up, particularly during the summer breaks,, after playing football and marbles, I used to get back home and play video games with my siblings and cousins. I remember I was very good at it, I mean playing games on the video. I was the one who most of the time found the "Princes" in "Super Mario", the video game. I think those moments created inside me an interest and curiosity to know how the inside of these machines and computers work. In short, that is the beginning of my story with computers.

Q. When did you start work at ENTRO?

I joined ENTRO on March 2005 first as a par timer (half a day then as full time staff as IT Officer)

Q. Would you compare the status of IT at ENTRO status then and now?

I remember when I joined ENTRO, there was nothing. I mean, in terms of Information and technology infrastructure. And I remember inquiring whether there is a server and a server room? What did I find for an IT infrastructure? Well, I found one Desktop Computer which was also serving as the Server for Active Directory Domain Controller/AD (directory service that Microsoft developed for Windows domain networks and to users in the domain.). The computer was placed in a 1 x 2 meter room in one corner of ENTRO, with no proper ventilation and backup system.



The AD could only serve the main ENTRO Villa and was connected to maximum of 8 or 9 Computers with old PBX system installed. The internet connectivity was so slow at 2MBPS. When I compare current ENTRO IT infrastructure with what was then, the difference is immense, though there is still ample opportunity to improve.

Currently ENTRO has the following IT infrastructure - hardware and related facilities, including: Local Area Network which connects 7 ENTRO villas in the office; 10 M/P/s Dedicated Fiber Internet connectivity with a backup 3 mps Wireless Internet connection from ethio- telecom ; redundant UPS system with Power Voltage Stabilizer ; VoIP Supported PBX telephone system ; Network attached Storage; 9 Servers which are providing different roll and services to the staff (Active Directory, DHCP, DNS, Exchange Server, Database Server, Print Server, Centralized Antivirus system, Firewall, SharePoint server, Application server which consisting Financial Management System and GIS and Remote Sensing Application) are the main ones; Data Center (Server room) with appropriate Ventilation; a Website , Intranet , Web portal; an IT policy, guideline and procedure document ; Draft Disaster recovery and business continuity plan document ; Plotters and network attached printers

Q. What are the main responsibilities of an Information Technology (IT) expert in ENTRO? Did the workload grow over time? How many of you started?

When I started work as an IT Consultant I was assigned to do "IT support and all IT Related issues" since I was the only IT person in the office. In other words, I had to do everything to do with computers or software, trouble shooting glitches, identifying problems, taming the sometimes quarrelsome relationship between computers and senior staff and also sometimes help with designing and publication of materials However, through time, as ENTRO hired more and more technical project staff and as ENTRO embarked on

implementing computerized Financial Management System, Website, E-mail system , Centralized Antivirus system , Expansion of LAN to connect new buildings etc.. . The workload became overwhelming for me, for one person. It became very difficult for me to handle everything. Eventually ENTRO management agreed to my request and realized that Jemal needs an Assistant.

Q. Were you happy with the work environment at ENTRO? YES and NO.

YES because ENTRO is working in an area where I want to contribute and make a difference. We have been supporting cooperation among countries sharing the Nile as a common resource, and thus build regional peace and prosperity. I really identify with the NBI Vision "To achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin water resources." So using my IT capabilities and making it at the service of this grand aim, makes me happy, in addition to getting the opportunity to learn a lot from different IT related challenges and technologies as related to the water sector.

NO, because, I hate to say this, the role of Information and Technology has not been given the emphasis and place it deserves. When I started work this was the case and even later. To be honest I had to bear constant frustration due to this. I always used to worry about the organization losing valuable data and information and knowledge products because IT infrastructure requirement gaps have not been addressed. So, you see, I was both elated and also depressed. It was only recently that things started getting better

Q. Please elaborate. What were the main challenges you faced to work effectively? Why?

Even though the IT related challenges were many let me outline them, as follows. The key challenges included, but were not limited to, the following:

- I had found it challenging to convince ENTRO management to allocate appropriate resources to address straight forward IT needs. Overall limited appreciation of the importance of Information and Technology was also another, even though that got better through time. Further, unstable internet connection from the national service provider posed another constraint.
- Continuous requirement of IT Services (departments and staff) with a limited IT human resources (initially the IT department was a one-man show, that is only me, and later one assistant was added, which never was enough). Limited budget for IT which constrained activities and procurement of critical hardware along with lack of budgeting for capacity building. It is known that IT is a highly dynamic field and to cope with the evolution and change of the IT sector, ENTRO IT staff need to be regularly and continuously brought up-to-date with current technology, practices, software, etc.

Now that I have outlined the challenges I faced as IT specialist, I would also like to highlight the achievements made within the above constraints:

We implemented and upgraded the Local Area Network (LAN) which connects 7 ENTRO separate villas housing different projects and departments. We also upgraded Internet connectivity from 2Mbps to 10 M/P/s through a dedicated Fiber Internet connectivity with a backup 3 mps Wireless Internet connection from ethio telecom. We set up VoIP Supported PBX telephone system and configured and setup 9 Servers which are providing a range of services (Active Directory, DHCP, DNS, Exchange Server, Database Server, Print Server, Centralized Antivirus system, Firewall, SharePoint server, Application server which consisting Financial Management System and GIS and Remote Sensing Application) . We put in place redundant UPS system with Power Voltage Stabilizer and configured a Network attached Storage. We also set a Data Center (Server room) with appropriate Ventilation and designed and developed ENTRO Website, we introduced the ENTRO Web portal and Intranet and made contribution to the formulation of harmonized NBI IT Strategy document ; to the harmonized NBI policy, guideline and procedure document and harmonized NBI Draft Disaster recovery and business continuity plan document

Q. How Is your work related to the water resources planning and development at ENTRO?

Yes, as you know IT is a cross- cutting service within the organization. The IT Unit provides technological service for the departments and staff. For example, the Water Resources and Planning Unit demands different IT Service from the unit thus , the IT unit is closely working with the Water Resources Planning Unit (WRPU) on the development of Web portal, in which WRPU will disseminate Knowledge products and store Spatial and non spatial data, and Application service like Map and Image processing application (GIS server , and Remote sensing software) and different modeling tools like flood management and forecasting tools and the few ones

Q. Tell me more about the Web portal.. Why is it important? Tell me the difference – content and appearance wise – between good and bad web portal? How did you take part or what did you do to improve ENTRO's web portal?

Web portal is web based application (page at a website) which brings information together from diverse sources in a uniform (structured) manner. An Organization needs a web portal to have presence in the internet/cyber space, disseminate contents and provide services to the public and to engage organization specific stakeholders and clients on the web.

A good web site or portal for me is reliable, secure , easy and user friendly, with appropriate graphic design and interface which is attractive to users and can provide the required information instantaneously in a few clicks.

A bad website or portal, on the other hand, would be crowded, with inconsistent layout and theme, and difficult navigation system and with broken links and unattractive graphic design of limited functionalities, unreliable, inefficient and less secured. I could go on, but these are the main ones.

Q. Why the IT infrastructure is called the backbone of an organization?

That is true. IT infrastructure is and should be the backbone of any modern organization like ENTRO. I always remember in ENTRO, whenever our servers are shut down for various reasons (electrical power, internet, maintenance), I used to see most of the staff unable to remain at their desks, mostly out in the open, enjoying the weather. And I always used to say to myself, it is true IT is a backbone of the organization!! If Whenever the servers are off, there is no work, at least those type of work that require internet functionalities, including accounting research, or weather or flood forecasting, e-mailing, etc. It is as simple as that – everything comes almost to a standstill. Slowly but surely our work lives are now increasingly dependent upon internet and information and communication technology, even when staff are not physically in the office, such as when they are in field trips, meetings abroad, etc. So, definitely, any modern organization needs IT infrastructure that is seven days a week, twenty four hours a day (24/7) flawless working. A spotty, unreliable IT infrastructure costs money, after all.

Q. What did you do to improve the web portal and ENTRO's IT infrastructure? Did you succeed? Half succeed? Why?

I can say I have succeeded some of the time, not all of the time. I say so because, there is still a lot remaining to be done to improve the current IT infrastructure, and IT Services. I was in the process to upgrade the LAN and the data center. However, for various reasons I was unable to do that. Now, that we have (the IT Unit) has already developed an IT Strategy which will guide the Unit for the coming years, I hope it will become easier to follow and implement it. However the IT Strategy document will always need to be updated..

By the way, I would like to mention here that ENTRO was the first among NBI centers that introduced and implemented a web portal. The web portal has functionality to present real-time interactive maps of different thematic areas on water resources, with appropriate document management system and Nile Climate Analysis tool, EN Flood Management Tool, etc.

Q. I am impressed by your achievements, especially, considering the skeletal staffing you had. May I ask what prompted you to leave ENTRO?

This is a very very difficult question. Well, two things. One is I wanted to work in other organizations to see and adapt to new and different IT environment and face new kind of challenges to build my career. The other, perhaps more important and immediate, to be honest, is I have been seriously disappointed with ENTRO's remuneration compared to the market. It was below market, far well below market. Especially, when I considered the workload and steadily growing degree of responsibility I was assuming, I could not help being frustrated. So this is the other compelling reason for my departure, though I still feel attached to ENTRO because it is there I came to meet interesting colleagues; it is there I learnt that the Nile is a transboundary resource, that cooperating is a must, that the countries are linked thru water, culture, trade. I met and came to appreciate colleagues from Egypt, Sudan and South Sudan. So, though away, I still consider ENTRO my home and I closely follow developments there, and I keep in touch with colleagues.

Q. Finally, what advice or message do you have for ENTRO regarding ENTRO IT infrastructure? Do you think there are areas for improvement? Which ones?

Thanks, this is a very important question. As one who had to grow together with ENTRO, after all I spent a good part of my youthful life there – I would like to see ENTRO IT grow in sophistication and relevance. Here are my quick ideas, not necessarily in order of importance. As a matter of urgency I believe ENTRO will need to do the following:

- a) Upgrade the electric connection and upgrade the existing LAN infrastructure to a full copper CAT 6 or better with Fiber connection to increase the internal communication efficiency, which has been a major problem all along together with Electrical.
- b) Upgrade the existing Internet connectivity speed. The current speed is well below world, if not regional standard.
- c) Renovate the Data center with a minimum Data centered Standards (Automatic Fire detection, Secure door, Redundant cooling system, Centralized UPS System)
- d) Replace the old servers by new ones and upgrade the Data storage device (procure new servers).
- e) There needs to be continuous Capacity building/training plan for IT staffy to keep abreast with and cope with the ever changing dynamic IT environment. Technologies, both software and hardware, are changing by months, and an IT unit that does not keep with these changes cannot provide useful service and contribute to organizational efficiency.
- f) Add more addition IT Staff. The Unit is currently seriously understaffed. Allocate sufficient and appropriate IT budget.
- g) Presence of IT Unit on ENTRO organization structure has be be cleared out (currently the unit is reporting for two department one for Finance and Admin head and Water Resource and Planning unit). Clarify to whom the IT Unit will primarily report. As of now the IT Unit head reports to two masters, so to speak, to the Finance and Administration Head and to the Water Resources Planning Unit. Even though IT is a cross cutting service provider, including to the two ENTRO units, there needs to be clear line of accountability and communication (hierarchy)!
- h) Allocate appropriate technical experts for web portal, website and information management system. This is related to what I said above. Even more important, ENTRO needs to value its IT people and pay them accordingly, otherwise high staff turnover will consist the institution dearly. Afterall, even though IT is technical, it also is domain specific; in this case the IT professionals need to be well versed with what ENTRO does and some technical aspects of water resources development planning and management.
- i) Establish internal IT Steering committee who will going to see the overall all IT related issue in the organization.

Thank you for your time.
by Wubalem Fekade, Ph.D, Hd, SDCU



Photo Courtesy: Impala Communication 2013

DID YOU KNOW?

Level of Human Development

Ten of the 11 Nile Basin countries fall in the 'low human development' category, with eight ranked in the bottom 25.

Agriculture

Agriculture is the largest employer, providing work for over 75 per cent of the total labor force of the Nile Basin countries,

HIV/AIDS Prevalence

HIV/AIDS levels for the Nile countries range from 2 to 4.5 per cent, with the exception of Egypt, where incidence is below 0.1 per cent for both sexes,

Basic Services Provision

Egypt's population is concentrated in a narrow tract of land along the Nile and in the Nile Delta. This dense settlement pattern, among others, has made it easier for Egypt to provide its population with basic services (water, sanitation, electricity, health services, etc.). In contrast, the headwater countries of the Nile (particularly Ethiopia, Uganda, Tanzania, and Kenya) have been constrained – among others - by the scattered settlement and difficult terrain to provide similar services.

Gross National Income

The Gross National Income (GNI) of most Nile riparian countries is low. With the exception of Egypt, whose GNI stands at PPP\$5,260, GNI is below the PPP\$1,966 average for Africa. The low per capita income is generally reflected in the relatively high rates of poverty in the basin.

Major Environmental Challenges

Major environmental challenges of the Eastern Nile include: soil erosion, degradation of agricultural lands, desertification, loss of forests and wetlands, overgrazing of pastures, declining water quality, overexploitation of fisheries, eutrophication of lakes, invasive water weeds, inadequate urban waste management, waterborne diseases, and declining biodiversity.

Development Potential

The development potential of the Eastern Nile Basin is linked to water infrastructure development, increased hydropower production, increased agriculture production and rural development – but these potentials can be realized only if they factor in the major environmental challenges the basin is facing.

“We Work for the Shared Benefits of Cooperation”

The NBI Shared Vision:

“ To achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources”



ENTRO and WRPM
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The Eastern Nile Technical Regional Office (ENTRO)

ENTRO's Core Values Are **RIGHT**:

Regional Orientation, Focus on People & Environment

We are committed to regional cooperation in all our activities and relationships among ourselves and with our partners. We are committed to work for the benefit of the people and the environment of the EN countries.

Initiative, Dynamism and Creativity

As a team and as individuals, we take initiative and embrace new ideas for the enhancement of both our performance and our working environment. We strive for creativity to set the example and pace for others.

Gender Balance, Equity and Respect Diversity

In all our work and interactions, we give equal opportunities for both genders and seek gender balance. We also do not discriminate any individuals because of their beliefs or physical appearance. We emphasize mutual respect for individuals, recognition of their contributions, and their rights to equity in benefit sharing.

Honesty, Excellence and Professionalism

We perform all our duties in a spirit of trust, transparency and honesty.
We are committed to excellence and professionalism in all our work.
We do not compromise on quality and accountability.

Teamwork, Participation and Partnership

We choose to work in teams with our colleagues at ENTRO and with ENTRO's owners and partners. We also seek to expand and intensify participation of nongovernmental stakeholders, particularly from EN civil society and private sector. We believe through participation and partnership we would achieve synergies otherwise lost. We hold ourselves individually and collectively accountable in achieving our commonly shared objectives.



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