



ENTRO
EASTERN NILE TECHNICAL
REGIONAL OFFICE



BARO-AKOBO-SOBAT MULTIPURPOSE WATER RESOURCES DEVELOPMENT PROJECT STUDY

BASELINE, DEVELOPMENT POTENTIALS,
KEY ISSUES AND OBJECTIVES REPORT

Annex 4: policies, legal and institutional arrangements in the basin: current situation and key issues

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BARO-AKOBO-SOBAT MULTIPURPOSE WATER RESOURCES DEVELOPMENT STUDY - BASELINE STUDY

Annex 4: policies, legal and institutional arrangements in the basin: current situation and key issues

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ACORD	Association for Cooperative Operations Research and Development
ACTED	Agency for Technical Cooperation and Development
BAS	Baro Akobo Sobat
CAMP	Comprehensive Agriculture Development Master Plan
CBA	Cost Benefit Analysis
CMA	Catchment Management Association
CRA	Cooperative Regional Assessment
DEM	Digital Elevation Model
EEPCCO	Ethiopian Electric Power Corporation
EHA	Erosion Hazard Assessment
EIA	Environmental Impact Assessment
ENID	Eastern Nile Irrigation and Drainage
ENCOM	Eastern Nile Committee Of Ministers
ENPM	Eastern Nile Planning Model
ENPT	Eastern Nile Power Trade
ENSAP	Eastern Nile Subsidiary Action Plan
ENTRO	Eastern Nile Technical Regional Office (NBI)
EPA	Environmental Protection Authority
FAO	Food and Agriculture Organization
GDEM	Global Digital Elevation Model
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographic Information System
GTP	Growth and Transformation Plan
GWh/y	GigaWatt hour/year
HEP	Hydroelectric Power
IDEN	Integrated Development of Eastern Nile
ILWRM	Integrated Land and Water Resources Management
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature and Natural Resources
IWMI	International Water Management Institute
IWRDMP	Integrated Water Resources Development and Management Plan
IWRM	Integrated Water Resource Management
JMP	Joint Multipurpose Project
MAFCRD	Ministry of Agriculture, Forestry, Cooperatives and Rural Development
MASL	Meters Above Sea Level
MCA	Multi Criteria Analysis
MDG	Millennium Development Goals
MEDIWR	Ministry of Electricity, Dams, Irrigation and Water Resources
MERET	Managing Environmental Resources to Enable Transitions
MLFI	Ministry of Livestock and Fisheries
MoA	Ministry of Agriculture
MoEN	Ministry of Environment
MoWIE	Ministry of Water, Irrigation and Energy
MSIOA	Multi Sector Investment Opportunity Analysis
MTR&B	Ministry of transport, roads and bridges
MW	Mega Watt
MWC&T	Ministry of Wildlife Conservation and Tourism
NB-DSS	Nile Basin Decision Support System
NBI	Nile Basin Initiative

NCORE	Nile Cooperation for result project
NDVI	Normalized Difference Vegetation Index
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NGO	Non-Governmental Organization
Nile-COM	Nile Council of Ministers
PIM	Project Implementation Manual
PLSPP	Policies, Legislation, Strategies, Plans, and Programs
PPP	Private Public Partnership
PMU	Project Management Unit
PRSP	Poverty Reduction Strategy Program
RATP	Regional Agricultural Trade and Productivity Project
RPSC	Regional Project Steering Committee
RSS	Republic of South Sudan
RUSLE	Revised Universal Soil Loss Equation
SAP	Subsidiary Action Program
SEA	Strategic Environmental Assessments
SIS	Soil Information System
SLMP	Sustainable Land Management Program
SNNPR	Southern Nations, Nationalities and Peoples' Region
SRFE	Satellite Rainfall Estimates
SRTM	Shuttle Radar Topographic Mission
SSEA	Strategic Social and Environmental Assessment
SVP	Shared Vision Program
SWAT	Soil and Water Analysis Tool
SWOT	Strength Weakness Opportunity Threat
SWSC	Soil-Water Storage Capacity
UNDP	United Nations Development Program
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WaSH	Water Sanitation and Hygiene
WB	World Bank
WBISPP	Woody Biomass Inventory and Strategic Planning Project
WCYA	Women, Children and Youth Affairs
WEES	Water for Eastern Equatoria
WFP	World Food Program
WM	Watershed Management
WRMA	Water Resources Management Authority
WRMD	Water Resources Management and Development
WSS	Water Supply and Sanitation
WUA	Water Users Association

1. INTRODUCTION

Institutional and organizational arrangements, based on relevant legal grounds as well as policy and strategy documents, are a key issue when it comes to practical considerations of implementation of such an ambitious and complex IWRDM plan for the Baro Akobo Sobat river basin.

Several questions are highly challenging; not limited to, but the most prominent are:

- How to address the multipurpose (i.e. inter-sectoral) nature of the Plan?
- How to properly and efficiently cooperate when activities with transboundary effects are planned?
- How to address the short, medium and long terms for a Plan which will certainly be developed over several decades?
- Can we imagine an arrangement which is at the same time robust and flexible and which could also be adapted in the medium and long term if necessary?

Having these questions in mind, this section first depicts the current institutional background and framework at national and international scale, and then identifies key issues as well as preliminary ideas for the future. These ideas are aimed at being discussed with stakeholders and further developed in the Plan itself.

This section has been elaborated on the basis of key documents as quoted below and a series of face to face interviews with major stakeholders concerned by the BAS and the IWRMD Plan.

2. NATIONAL POLICIES AND INSTITUTIONS

2.1 ETHIOPIAN NATIONAL POLICIES AND INSTITUTIONS RELATED TO IWRM

2.1.1 General framework

Ethiopia is endowed with a long series of legal documents addressing the water resources in general and their management in particular. In chronological order, it is worth mentioning:

- The water policy, 1999
- The water strategy, 2001
- The water resources proclamation, 2000
- The water resources regulation, 2005
- The proclamation on river basins Councils and Authorities, 534/2007
- The definition of powers and duties of the executive organs, proclamation 691/2010

Without entering into all the aspects of these references, it is important to go into details of at least the two last documents.

The proclamation 691/2010 establishes for all Ministries the detail of duties and power. Regarding the Ministry in charge of water (at that time, Ministry of Water and Energy), these are the following:

- a) promote the development of water resources and energy;
- b) undertake basin studies and determine the country's ground and surface water resource potential in terms of volume and quality, and facilitate the utilization of same;
- c) determine conditions and methods required for the optimum and equitable allocation and utilization of water bodies that flow across or lie between more than one regional states among various uses and the regional states;
- d) undertake studies and negotiations of treaties pertaining to the utilization of boundary and trans-boundary water bodies, and follow up the implementation of same;
- e) cause the carrying out of study, design and construction works to promote the expansion of medium and large irrigation dams;
- f) administer dams and water structures constructed by federal budget unless they are entrusted to the authority of other relevant bodies;
- g) in cooperation with the appropriate organs, prescribe quality standards for waters to be used for various purposes;
- h) support the expansion of potable water supply coverage; follow up and coordinate the implementation of projects financed by foreign assistance and loans;
- i) undertake studies concerning the development and utilization of energy; and promote the growth and expansion of the country's supply of electric energy;
- j) promote the development of alternative energy sources and technologies;
- k) set standards for petroleum storage and distribution facilities, and follow up the enforcement of same;
- l) issue permits and regulate the construction and operation of water works relating to water bodies referred to in paragraphs (c) and (d) of this sub-article;

- m) in cooperation with the appropriate organs, determine the volume of petroleum reserve and ensure that it is maintained;
- n) ensure the proper execution of functions relating to meteorological services.

It can be seen from this long list that the ministry in charge of water has a very broad spectrum of responsibilities, now including in addition the development of irrigation in a more general manner. It is also clearly stated that the Ministry is the institution in charge of transboundary negotiations and related implementation of actions.

2.1.2 River Basins Authorities in Ethiopia

The most specific characteristic on how IWRM is addressed in Ethiopia is the ongoing process of creating River Basin Authorities, according to the proclamation 534/2007.

Duties and powers of the river basin Authorities according to this proclamation are:

- 1) Initiate and submit to the basin High Council policy measures needed to create a conducive environment for the implementation of an integrated water resources process within the basin and follow up the implementation of the same upon approval,
- 2) Undertake activities necessary for and facilitate the implementation of IWRM in the basin,
- 3) Ensure that projects, activities and interventions related to water. in the basin are, in their content; schedule, impacts and management are in line with the integrated water resources
- 4) Prepare, and submit to the Basin High Council, the basin's plan and monitor its implementation upon approval
- 5) Without prejudice to the power given to Regional State by law, issue permits applicable to the basin's water use and water works in accordance with Article 15 of this Proclamation, and ensure that the terms of the permits are complied with
- 6) Collect, compile, analyze and disseminate information for proper planning, administration and steering of water resources in the basin
- 7) Develop and use a river basin model in order to guide and support its basin water resources strategic planning and water administration functions
- 8) Give advice and technical support to the Basin High Council and the Ministry on dispute resolution in relation to the allocation and use of water resources of the basin
- 9) Set up a forum for effective networking among stakeholders
- 10) Collect water charges from users;
- 11) On the basis of instructions of the Basin High Council, prepare and provide necessary information for the concerned body in charge of negotiations with other countries concerning trans-boundary river basins;
- 12) Undertake studies, surveys and researches that are deemed necessary to carry out its functions;
- 13) Own property, enter into contracts, sue and be sued in its own name;
- 14) Carry out other functions necessary for the implementation of its objectives.

From this list, it can be seen also that river basin Authorities have a wide range of duties and power, including those underlined in the quotation, i.e. i) prepare a basin Master Plan and monitor its implementation ii) set up a river basin model for strategic planning purposes iii) support the body in charge of transboundary aspects by delivering proper information.

Therefore, as a summary, IWRM at Ethiopian basin scale pertains to the river basin Authorities while the active role for transboundary aspects belongs strictly to the Ministry. The proclamation 534/2007 gives provisions how to address the transboundary aspects by the High Council and the river basin Authorities as well as relationships between regional States in Ethiopia. A specific department is in charge of transboundary aspects within the MoWIE.

Today, there are already three River Basin Authorities officially created, i.e. Abbay, Awash and Rift Valley Lakes Authorities.

Baro Akobo, Tekeze and Omo Authorities will be set up shortly. The proclamation for setting up the Baro Akobo Authority is already drafted (copy given to the Consultant).

Awash river basin will be complemented with Danakil and Aisha river basins to form one single Authority together.

Genale Dawa, Wabi-Shebelle and Ogaden will form one single river basin Authority in the future.

There will be a total of seven river basins Authorities purely at national scale.

Regarding the Baro Akobo river basin, the priority for Ethiopia is to properly address sharing of water between the four regional States concerned by the catchment (i.e. Benishangul-Gumuz, Oromia, Gambella and SNNP) before considering transboundary aspects.

2.2 SOUTH SUDANESE NATIONAL POLICIES AND INSTITUTIONS RELATED TO IWRM

Despite being a young independent State, South Sudan has prepared several documents of importance addressing water resources and their management, including provisions on institutional arrangement and trans-boundary aspects. The most important to be mentioned are:

- ▶ The Water Policy, GoSS November 2007 (i.e. before the independence, after the 2005 Comprehensive Peace Act)
- ▶ The Rapid Water Sector Needs Assessment and a way Forward, the World Bank January 2013
- ▶ Draft Water Bill, GoSS September 2013

The Rapid Water Sector Needs Assessment and a way Forward

This document explores into detail the Water Policy (2007), delivers some recommendations and identifies a way forward.

The report stresses different important aspects, such as:

- ▶ The great attention paid to the WASH sector which gave rise to a specific “Sector Strategic Framework” dated 2011. This is easy to understand as being one of the major priority for the GoSS due to the situation of drinking water supply and sanitation in the country.
- ▶ A limited approach to IWRM and inter-sectoral aspects with general principles and provisions in the 2007 Water Policy, to be further developed
- ▶ Also, mention of transboundary aspects, limited to principles of cooperation. This is quite understandable since in 2007 South Sudan was not fully independent and not in a position to apply to international bodies such as NBI and ENSAP/ENTRO.
- ▶ An important need to generate additional/complementary knowledge relating to water resources as well as the planning and management procedures.

As a summary, the way forward is synthesized in a series of key actions and initiatives to put into force:

- ▶ Implementing the WASH strategic framework
- ▶ Creating irrigation policy and strategy framework

- ▶ Developing major hydropower
- ▶ Monitoring the social and environmental impacts of water resources management
- ▶ Generating and adapting complementary knowledge
- ▶ Assessing the water resources integrated catchment planning and water allocation
- ▶ Integrating catchment planning and water allocation

Draft Water Bill, September 2013

This document is much more comprehensive and encompasses a series of specific provisions relating to water resources management as well as transboundary aspects. It remains to ascertain the legal status of this bill and whether and how all provisions have been put into force.

The draft Water Bill comprises five sections, 22 chapters, three schedules and 169 articles.

Not going into the whole of this long document (general provisions, transitional aspects etc.), it is worth mentioning the most prominent new arrangements envisaged.

- ▶ Section 2, chapter 2 gives provisions for establishment of a Water Council: in brief, the Water Council is under the authority of the Minister in charge of water. Its main purpose is to coordinate inter-sectoral approaches at the highest level. It is also supervising the Water Resources Management Authority (see below) and is endowed with a dedicated secretariat.
- ▶ Section 2, chapter 3 relates to duties and powers of the Minister (in charge of water). Among others, the Minister shall be responsible for RSS policy and strategy formulation and for ensuring the proper execution; Ensure and safeguard RSS interest on trans-boundary water resources; Provide for the safe construction of and management of dams; Appoint members of the Water Resources Management Authority; Appoint Basin Water Boards
- ▶ Section 2, chapter 5, articles 16 to 18 relate to the Water Resources Management Authority; among other provisions: this Authority is a corporate body under the authority of the Minister and acting for several concrete activities relating to IWRM. One specific duty is to *Liaise with other regional, RSS and international bodies for the better assessment, management, development and use of the water resources*; Also this Authority is in charge of determining the basins catchments and sub-catchments. Upon its proposition, the Minister creates Basins Water Boards in the basins and sub-basins.
- ▶ These Basin Water Boards are the acting arm at local scale in catchments and sub-catchment. Each is accompanied by a specific Committee appointed by the Minister

3. REGIONAL INSTITUTIONS

3.1 NILE BASIN INITIATIVE

The Nile Basin Initiative (NBI) was founded in 1999 by the Council of Ministers of Water Affairs of the Nile Basin States. It includes all Nile countries and provides an agreed basin wide framework to fight poverty and promote socioeconomic development in the region. It is guided by a shared vision: *“to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.”*

The program of actions is based on collaborative action, exchange of experience, and capacity building and includes a set of projects:

- ▶ **Nile Transboundary Environmental Action Project:** The objective is to provide a strategic framework for environmentally sustainable development of the Nile River Basin and to support basin-wide environmental action linked to transboundary issues in the context of the NBI Strategic Action Program.
- ▶ **Efficient Water Use for Agricultural Production** to provide a conceptual and practical basis to increase water availability and efficient water use for agricultural production.
- ▶ **Nile Basin Regional Power Trade.** The objective is to establish the institutional means to coordinate the development of regional power markets among the Nile Basin countries.
- ▶ **Water Resources Planning and Management.** The project is to enhance the analytical capacity for basin-wide perspective to support the development, management, and protection of Nile Basin waters.
- ▶ **Confidence Building and Stakeholder Involvement.** With the aim to develop confidence in regional cooperation under the NBI and ensure full stakeholder involvement in the NBI and its projects.
- ▶ **Applied Training.** The objective is to strengthen institutional capacity in selected subject areas of water resources planning and management in public and private sectors and community groups and create or strengthen centres with capacity to develop and deliver programs on a continuing basis.
- ▶ **Socioeconomic Development and Benefit Sharing.** The aim is to strengthen Nile River basin-wide socio-economic cooperation and integration through:
 - joint identification, analysis, and design of cooperative development options and priorities, development of criteria, methods, and frameworks for sharing benefits/costs, and managing attendant risks.

Parallel to these programs, groups of countries in the Eastern Nile and in the Nile Equatorial Lakes region have identified investment opportunities at the sub-basin level and developed subsidiary action programs, respectively:

- ▶ **The Eastern Nile Subsidiary Action Program (ENSAP),** which includes the countries of Egypt, Ethiopia, Sudan and South Sudan.
- ▶ **The Nile Equatorial Lakes Subsidiary Action Program (NELSAP)** that includes the countries of Burundi, Democratic Republic of Congo, Egypt, Kenya, Rwanda, Sudan, Tanzania, and Uganda.

3.2 ENSAP

The Eastern Nile Subsidiary Action Program (ENSAP), investment program developed by the NBI, is to promote poverty alleviation, economic growth and reversal of environmental degradation from a joint action of Egypt, Ethiopia, Sudan and South Sudan.

It is led by the Eastern Nile Council of Ministers (ENCOM) representing the four countries.

The first ENSAP project is referred to as the Integrated Development of the Eastern Nile (IDEN) project. Its objective is to initiate a regional, integrated, multipurpose development project that confirms tangible win-win gains and demonstrates joint action for the Eastern Nile countries.

IDEN comprises the following seven subprojects: Eastern Nile Planning Model (ENPM), Baro-Akobo Multipurpose Water Resources Development, Flood Preparedness and Early Warning, Ethiopia-Sudan Transmission Interconnection, Eastern Nile Power Trade Investment, Irrigation and Drainage, and Watershed Management.

- ▶ **Eastern Nile Planning Model (ENPM)**. The long-term objective of this project is to strengthen the capacity of Egypt, Ethiopia, and Sudan to identify, prepare, and implement cooperative development projects that provide mutual benefits in the Eastern Nile. The ENPM will serve as an agreed common analytical tool for the joint planning of multi-purpose, multi-country win-win projects in the Eastern Nile. It will be an important element of the overall planning framework as it provides a common analytical basis for identifying, and assessing options, quantifying benefits and impacts, evaluating tradeoffs, and analyzing and managing information.
- ▶ **Baro Akobo Sobat Multipurpose Water Resources Development**. This is the present study, which concerns Ethiopia and South Sudan sharing the catchment of Baro Akobo Sobat. The main Components are: Multipurpose Water Resources Infrastructure, Integrated Water Resources Management, Environmental Management and Protection, Socioeconomic Development, and Regional Cooperation.
- ▶ **Flood Preparedness and Early Warning Project (FPEW)**. The development objective is to reduce human suffering and damages from, and capture the benefits of, flooding in the Eastern Nile. The project focuses on flood risk management and non-structural approaches to managing the impacts of floods: including floodplain management and flood mitigation planning; flood forecasting and warning; and emergency response and preparedness at regional, national, local and community levels. This will contribute to the longer term goal of establishing a comprehensive regional approach to flood management that integrates watershed, river and floodplain management, and incorporates a suite of structural and non-structural flood mitigation measures within a broad multi-purpose framework.
- ▶ **Ethiopia-Sudan Power Interconnection**. The immediate objective is to facilitate cross-border power trade between the two countries and thus optimize utilization of existing and planned generation capacity. The expected output is a high-voltage transmission line connecting the two countries, which would be the first step in realizing an integrated power system in the Eastern Nile.
- ▶ **Eastern Nile Power Trade Program Study**. The objective of the Study is to promote regional power trade and create an enabling environment for coordinated planning and development through: 1) comprehensive identification of potential opportunities for regional benefits, 2) prioritization of power generation and transmission interconnection projects or scenario, 3) conduct pre-feasibility studies of three dam sites (Mandaya and Border dams in Ethiopia and Dal-1 in Sudan, 4) developing a strategy for power trade for the Region, and 5) conducting feasibility study of regional transmission interconnection.
- ▶ **Irrigation and Drainage Project**. The study will include two components: 1) Engineering sub-study: Ethiopia and Sudan development Projects and 2) CRA sub-study.

- ▶ **Watershed Management.** The immediate objective of the Eastern Nile Watershed Management project is to establish a sustainable framework for the management of selected watersheds in order to improve the living conditions of the people, create alternative livelihoods, enhance agricultural productivity, and protect the environment, and in the long term reduce sediment transport and situation of infrastructure, and prepare for sustainable development investments.

3.3 ENTRO

The Eastern Nile Technical Regional Office (ENTRO) was established by ENCOM in June 2002 in Addis Ababa as the executive arm of the ENSAP. Initially the countries were three (Egypt, Ethiopia and Sudan) and since the independence of South Sudan in 2011, ENSAP and ENTRO comprise four countries. ENTRO manages, coordinates and supports ENSAP projects through: capacity building in social development, input to project design, formulation of guidelines, initiation of pilot and background studies and analysis; and networking with stakeholders.

ENTRO is funded by the Eastern Nile countries and several foreign donors: among others, the African Development Bank, the NEPAD etc.

The roles of ENTRO are summarized as follows:

- ▶ Providing technical expertise and adopting best practices for the coordinated identification, preparation and possible implementation of regional development programs and projects in the Eastern Nile;
- ▶ Enhancing capacities of ENSAP institutions;
- ▶ Building and strengthening networks among the stakeholders; and
- ▶ Enabling people from the Eastern Nile to work together.
- ▶ Facilitating Eastern Nile Dialogue and Consultations
- ▶ Promoting EN Water Resources Management (knowledge management & planning), and
- ▶ Promoting EN Water Resources Development

Summary of transboundary initiatives relating to water

The Nile Basin Initiative (NBI) was founded in 1999 by the Council of Ministers of Water Affairs of the Nile Basin States. It includes all Nile countries and provides an agreed basin wide framework to fight poverty and promote socioeconomic development in the region. It is guided by a shared vision: *“to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.”*

Parallel to the programs developed by the NBI, groups of countries in the Eastern Nile and in the Nile Equatorial Lakes region have identified investment opportunities at the sub-basin level and developed subsidiary action programs, in particular the Eastern Nile Subsidiary Action Program (ENSAP), which includes the countries of Egypt, Ethiopia, Sudan and South Sudan. ENSAP is to promote poverty alleviation, economic growth and reversal of environmental degradation from a joint action of Egypt, Ethiopia, Sudan and South Sudan.

The first ENSAP project is referred to as the Integrated Development of the Eastern Nile (IDEN) project that comprises the following seven subprojects: Eastern Nile Planning Model, Baro-Akobo-Sobat Multipurpose Water Resources Development, Flood Preparedness and Early Warning, Ethiopia-Sudan Transmission Interconnection, Eastern Nile Power Trade Investment, Irrigation and Drainage, and Watershed Management.

3.4 THE COOPERATIVE FRAMEWORK AGREEMENT (CFA)

The Member States of the NBI have worked, discussed and negotiated for years with the aim of establishing a general agreement on water resources in the Nile river basin. This resulted in a document named “Cooperative Framework Agreement” which was completed in 2010, with, among others, the purpose of setting up a “Nile river basin Commission”. However, at that time Egypt and Sudan decided to withdraw from any negotiation and definitely not to sign the CFA.

To enter into force, the CFA requires signature by the Member States, plus ratification. One provision of the CFA (article 42) is relating to the entry into force of the CFA as *“The present Framework shall enter into force on the sixtieth day following the date of the deposit of the sixth instrument of ratification or accession with the African Union”*. So far, three ratifications are still missing to meet such a condition and the CFA is not yet activated.

In addition to the great interest lying in institutional provisions expressed in the CFA, article 31 of the CFA addresses the *“sub basins organizations and arrangements”*, recognizing their utility. This article could be of high interest if the CFA is put into force, for the BAS river basin. However, this article is a very general provision, mainly addressing existing sub-basin organization (LVBC for example), and would need a very specific work and details on how new sub-basins could be considered and set up.

4. RELEVANT INTERNATIONAL AGREEMENTS

4.1 TRANSBOUNDARY WATER AGREEMENT

More generally, it is worth mentioning the UN “*Convention on the Law of the Non-navigational Uses of International Watercourses*” 1997. This convention was put into force only in 2014 when the 35th state ratified it (Vietnam), according to the related provision.

The convention expresses general principles of management and protection of water resources, summarized as:

- ▶ Principles for sharing transboundary water,
- ▶ General obligation to cooperate,
- ▶ Protection of the environment,
- ▶ Participation of the public,
- ▶ Prevention and settlement of disputes.

This convention certainly inspired many initiatives of transboundary water resources arrangements/agreements, and still constitute a reference to that extent.

However, the NBI and the preparation of the CFA went much further into the actual situation of the Nile river basin and the convention cannot help much in this context. It is also noticeable that none of the countries sharing the Nile river basin has signed nor ratified this convention.

4.2 AFRICAN DEVELOPMENT BANK’S INTERNATIONAL POLICIES AND STRATEGIES

POLICY FOR INTEGRATED WATER RESOURCES MANAGEMENT (2000)

The AfDB issued its IWRM policy in 2000. This policy is mainly composed of i) the assessment of the existing situation, problems and constraints and ii) the IWRM policy itself. The section on the existing situation may be perceived as somehow outdated, but the policy principles do remain and it is worth mentioning that it addresses:

- ▶ Basic principles and objectives,
- ▶ Institutional strategies,
- ▶ Technical strategies,
- ▶ Economic strategies,
- ▶ Social strategies, and
- ▶ Environmental strategies.

Regarding water resources development and IWRM, the AfDB policy summarizes major recommendations and preferred arrangements such as:

“Responsibilities for development and management of water resources can either be fully or partially transferred to restructured public agencies, private agencies or water users associations. To perform their functions effectively, however, these institutions must be accountable and autonomous. [...]. In addition, central government should ensure that activities in the water sectors are coordinated given the broad range of actors in the sector, their area of intervention, and their varying operational policies and procedures. The role of the government should be to facilitate dialogue, broad participation and

consensus building among all stakeholders. The Bank will support water resources management activities that promote policy consultation among all stakeholders, and seek broad participation.”

Still few water bodies that cross or form international borders in Africa are managed jointly. *“In this context, the dependency of downstream countries on upstream ones for access to and development of water resources is a potential threat to regional stability and peace. An integrated approach to water resources management calls for regional cooperation for the joint management of international watercourses. The effective functioning of trans-boundary river basin organizations at the regional and international level is a major priority. The Bank will support joint efforts of riparian countries in developing strategies for integrated water resources management and will assist in providing financial resources for multinational and regional organizations and river basin authorities.”*

THE AFRICAN WATER FACILITY (AWF)

Hosted by the AfDB, the AWF was created in 2004 by the African Ministers' Council on Water (AMCOW) in response to the need to catalyse the development of the water sector, by increasing the number and the quality of sustainable water projects to meet water development goals throughout the continent.

Target goals of AWF include increased water, food and energy security, and socio-economic growth.

Typically, AWF focuses on the three core areas that are complementary and synergetic: Project Preparation, Water Governance (including enhanced regional cooperation) and Water Knowledge.

The AWF funds the development of Integrated Water Resources Management (IWRM) plans to improve the governance of the water sector, attract investment and to foster regional cooperation and integration.

5. ASSESSMENT OF THE ROLES AND FUNCTIONS TO BE PERFORMED FOR LARGE IWRM PLANS

It is of high interest to identify the main functions which will to be performed for large IWRM plans, from the very beginning to operation stage. In front of this list of functions (possibly to be enriched), a first attempt of suggestions and comments can be made according to the specific situation of the BAS river basin. The table below summarizes this approach.

Table 5-1: Functions to be performed by large basin plans

Functions for BAS IWRMD plan	Detail of Functions	Actors - comments
Policy Formulation & Cooperation	Develops basin-wide policies for water management	This should be a major output of the BAS IWRMD Plan. In addition it should be imagined that the two countries sharing the BAS catchment dedicate specific means (in depth studies, coordination meetings...etc.) in view of ensuring harmonization of coordinated water management policies in the BAS catchment. This could be naturally supported and facilitated by NBI/ENSAP/ENTRO
Strategic Planning	Develops medium to long-term strategic options for basin-wide water development and management.	This is the BAS IWRMD Plan. The key point is to ensure that both countries and stakeholders are committed and willingfull for implementation.
	Develops strategic options for sector development and/or management	This relates to the multi-sector nature of the BAS IWRMD Plan. This requires a coordination in each country under the auspices of the Ministries in charge of water, as well as a bilateral coordination at least for some items: hydropower generation, watershed management etc.
Water Resources Management	Coordinates member states re. land and water management activities (can include agricultural water use)	This depends on the accuracy and willingness stemming from strategic options as above mentioned. The quality and the frequency of bilateral coordination between the two states will determine the efficiency of this function (example of big dams to be operated for the lager benefits).
	Water Allocation/Quota Management	The water allocation/quota issue is still controversial in the Nile Basin and especially the ENSAP region. A specific attention must be paid to this issue in order to build a safe arrangement in the future. This would be under the auspices of NBI/ENSAP. A specific effort is to be paid (first rank priority) to improve and densify the hydro-meteorological network especially in South Sudan.
	Water Quality Management	This remains a field of very limited knowledge and understanding. Monitoring of quality will need specific preparation and investment specifying parameters, means and cooperation agreements between the two countries, and in line with NBI/ENSAP activities
	Protecting and conserving ecosystems and environment	The SVP NTEAP provided a strategic environmental framework for the management of the transboundary waters and environment challenges in the Nile River Basin. The ENSAP Watershed Management Project Established sustainable framework for the management of selected watersheds to improve living conditions of the people, enhance agricultural productivity, protect the environment, reduce sediment transport and siltation of infrastructure, and prepare for sustainable development oriented investments. However, a specific research program anticipating future specific ESIA is to be set up in addition, specially aiming at a better understanding of the functioning of wetlands and marshes. These particular ecosystems could possibly be heavily impacted by some activities (big dams) and they are of international interest. The two countries together should consider carefully this issue under the umbrella of NBI/ENSAP.

	Operational rules and procedures (e.g. flow management)	Operation rules and procedures regarding water quantity should be considered especially for the medium and long term when large infrastructures are likely to be implemented. This should be at least on a bilateral basis, but not ignoring that other member states of ENSAP are concerned which will eventually lead to a more general discussion
	Emergency Measures (floods, spills, droughts...)	The ENSAP FPEW project strengthens the existing capacities of the EN countries in flood forecasting, mitigation and management. In addition specific provisions for future large infrastructures must be addressed by the two countries.
Knowledge Management	Collects and/or collates basin information and manages quality assurance - Develops & Operates Decision Support Systems	The SVP WRPM project developed the Nile-DSS, which includes a large information management system. However, in depth research for the BAS IWRMD Plan study demonstrates that there are many gaps in basic knowledge of hydro-meteorology in the basin. Any initiative and implementation will need to collect significant additional data over a sufficient period of time. This is especially true for wetlands and marshes of South Sudan where no data are available. This is a first priority action to be considered in the Plan with support of IGAD HYCOS and donors.
	Protocols for harmonizing/sharing data, and KM programs	Depends / relates with the previous item when operationalized
Water Resources Development	Mobilizes resources for water resources development projects	Each country (Ethiopia and South Sudan) expresses the intention to keep autonomous and address activities/projects on a case by case approach. However, it is sure that acting in a cooperative manner and benefiting of the umbrella of ENSAP will greatly enhance opportunities and chances for resources mobilization.
	ESIA (<i>develop criteria – harmonize, develop criteria, supervision</i>)	Joint ESIA are needed as soon as activities have transboundary nature. The recommendation would be that ESIA will not be limited to separate studies but will address cumulative effects. Support of ENSAP/ENTRO is a real opportunity.
	Mitigation measures for transboundary impacts (including ESIA.)	Depends / relates with the previous item when operationalized. Specific involvement and strong commitment of BAS countries is necessary.
	Safeguard measures such as relocation...	Depends / relates with the previous item when operationalized. Specific involvement and strong commitment of BAS countries is necessary.
	(Pre) Feasibility and design studies of specific developments	Depending on the nature of activities and developments, each country could be directly in charge on its own territory. For developments with transboundary effects, it is desirable that a bilateral arrangement would be set up or use the vehicle of ENTRO.
	Decision making to implement on various components of the BAS IWRMD Plan	Components with effects in one country only would pertain to the said country. Components/activities with transboundary effects should be decided on basis of sound design studies and ESIA by the two countries together (and even possibly other countries). The umbrella of ENCOM/ENSAP/ENTRO would therefore to be used for facilitating the dialogue and support an agreement.
	Engineering, Procurement & Construction	Activities in one country only without transboundary effects would pertain to the country alone (e.g. program of boreholes for water supply). ENTRO could support the engineering activities. Procurement and construction, as per the countries' views, would remain the duty of each country .
	Owns	As per the views expressed by the two countries, ownership would be lying strictly in each country
	Operates or Manages Infrastructure (e.g. dams)	As soon as large infrastructures are at stake with transboundary effects, the recommendation would be to set up a dedicated permanent technical Committee aimed at evaluating and when necessary adapting operation rules (yearly at least)

6. POLICIES, LEGAL AND INSTITUTIONAL ARRANGEMENTS IN THE BAS BASIN: IDENTIFICATIONS OF KEY ISSUES AND CHALLENGES

As a provisional conclusion and before defining options to be scrutinized by the stakeholders, the Consultant proposes to address the situation under the format of a tentative SWOT analysis.

Strengths

The major strength lies obviously in the existence of NBI/ENSAP/ENTRO. This is at the same time a legal framework and a source of various services developed since the establishment of these bodies. As an example, it is easy to mention the constitution of the Nile DSS: this tool has been developed and is shared by all riparian countries. Many other activities have been performed either in the frame of the SVP by the NBI or at the Eastern Nile scale by ENSAP/ENTRO.

It is worth underlining the existence of ENTRO as a major strength: ENTRO is endowed with full legal status and is able to conduct directly or to steer numerous and various activities (like the present IWRM Plan study). It is recommended that ENTRO would continue to manage and steer different studies which will be needed pursuant to the BAS multipurpose water resources development study. Indeed, ENTRO as an institution and the persons belonging to ENTRO have gained high experience for years on the situation of the BAS, the stakeholders expectations etc. and this is to be properly enhanced.

Another strength is that the BAS river basin is almost pristine in the meaning of the absence of large hydraulic infrastructures and more generally a low use of water resources. This keeps the door wide open for formulating development strategies and even for organizational arrangements to support such strategies.

The BAS river basin is also endowed with multiple natural resources, not only water but also land, the natural environment, fishes etc. This brings the idea in mind that a real IWRM process can be imagined and set up with a true integrated approach. There is the potential to address the nexus food-energy-environment, with significant benefits shared by the two countries and various categories of stakeholders.

Weaknesses

Purely from an institutional point of view, it is to be stressed that the Cooperative Framework Agreement has not been put into force. This is certainly a gap in itself and beyond this situation, it appears that very little institutional organization has been developed since 2010. This situation is not counterbalanced by other mechanisms such as possible bilateral agreement relating to development based on water resources, nor future management and operation of activities having transboundary effects.

Due, among others, to the insecure situation of South Sudan in the most recent years, there is little preparedness for large developments based on water in general. Despite several master plans have been issued recently at national scale (agriculture, irrigation...), it is doubtful that grass root level consultation of stakeholders was possible. When the security situation comes back to normal, it will be of higher importance to determine the priorities with the stakeholders.

One major weakness is relating to data, for water resources and many other items. A lot of data are old or totally missing and the literature references often cross quote each other. This is first a technical issue, but not only. This is also an organizational issue when considering that developing a much more extensive and reliable monitoring network should be put at the first rank of priorities (hydro-meteorology especially). As an example, the Machar marshes are almost not known at all,

except from qualitative description, most often old. Due to the extreme value of this ecosystem, of international importance, which is also a source of livelihood for many people, any large hydraulic infrastructure will need very careful evaluation (ESIA, possibly resettlement action plan...). This can only be envisaged in the frame of a close cooperation between the two countries, through: exchange of data, water information system, global ESIA (not case by case) etc.

Opportunities

Among opportunities, it is of importance to underline that the two countries sharing the BAS river basin are confident to each other. One highly positive and concrete aspect of this confidence is the simple fact of conducting such a big strategic study on the BAS in good cooperation.

Important outputs of this study will be: i) setting up a strategic vision on the long term and ii) address and study priority projects. Preparation of organization of these priority projects should be launched quite rapidly between the two countries.

One particular opportunity, or more generally conducive conditions, is the fact that the two countries sharing the BAS river basin own some comparable administrative and institutional organization as far as water is concerned, i.e. i) the Minister in charge of water is responsible for transboundary aspects ii) the two countries are organized on basis of regional states iii) the two countries have set up a water council or high water council which are in charge of the multi sector approach, that is fostering the IWRM philosophy iv) in both countries, the catchments (or river basins) and possibly sub-catchments are the key institutions for managing water. Ethiopia is well advanced in this direction with three River Basin Authorities already created, three others to be created in the short term, including the BAS.

Another aspect to be considered as an opportunity is the idea of keeping flexible in building an institutional arrangement. It is actually difficult to make propositions and imagine solutions ahead of a development program. The nature and the magnitude of activities incorporated in such a program will widely determine the requested ad hoc arrangement. In particular, would the program consider medium and long term investments for large infrastructures, this could leave enough time to decision makers to organize and negotiate the most appropriate mechanism. In the short, a simple mechanism could be used, serving as a transitional arrangement to be revisited and strengthened when and if necessary.

Threats

In such an ambitious endeavour, threats are potentially numerous and of high impact. Some of them deserve to be identified.

Case by case approach and implementation remaining in charge of each country separately: several stakeholders expressed this idea during consultations. If this idea may prove efficient for some "simple" activities (for instance, developing drinking water supply on basis of boreholes), as soon as the transboundary nature of the BAS is concerned, this will be much more complex or even hazardous (example of a series of big dams). A series of activities are to be carefully planned and conducted at river basin scale, such as:

- Feasibility studies, ESIA
- Detailed design, in depth mitigation measures, regime of storage/release, environmental flows, cost benefit analysis and optimal/equitable sharing of effects
- Decision to do the considered development
- Financial resources mobilization
- Construction
- Operation and maintenance

This last item is crucial as the previous steps. In fact it is not the reality that one could rely on a single initial rule of operation of big dams. There are plenty of possible situations which will need to adapt, even slightly, operation at least on a yearly basis. Let's think about plentiful hydrology one year, likely to give rise to floods; on the contrary we can imagine dryer years which would request anticipation in storage. In other words, a specific hydro-meteorological model is strongly requested, and, as part of the regular exchange of information/data, both countries will be concerned in that example. One option is certainly to create a specific joint committee in that purpose.

Another important threat is related to thinking the long term. Most people are really enthusiast with the perspective of generating development and responding to the huge needs of the population in various sectors. However, it must be clearly understood that implementation of such a plan may be over several decades, which is an intrinsic feature. The more carefully planned institutional arrangement from the beginning (not excluding several successive steps), the easier will be the capacity to address the long term, organize efforts and secure resources mobilization.

The present study is addressing strictly the BAS; the original idea and intention was to incorporate the White Nile up to Khartoum, as previously done in preliminary studies. For financial resources obstacles, this was not made possible. The question remains of the relationship and fair discussions with the downstream countries along the Nile. The suggestion is that this could be organized at early stage when the first drafts of the Plan are available.