

AFRICAN DEVELOPMENT BANK

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**SUPPORT FOR MAPPING, ASSESSMENT AND  
MANAGEMENT OF TRANSBOUNDARY WATER RESOURCES  
IN THE IGAD SUB-REGION**

**APPRAISAL REPORT**

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**AFRICAN WATER FACILITY**

**January 2007**

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## List of Acronyms

AMCOW	:	African Ministers' Council on Water
CIDA	:	Canadian International Development Agency
CILSS	:	Comité Inter-Etats de Lutte Contre la Sécheresse au Sahel
DDC	:	Direction du Développement et de la Coopération - Suisse
FAO	:	Food and Agricultural Organisation
FFEM	:	Fonds Français pour l'Environnement Mondial
GEF	:	Global Environment Facility
GIS	:	Geographic Information System
GTZ	:	Deutsche Gesellschaft für Technische Zusammenarbeit (Coopération Technique Allemande)
HYCOS	:	Hydrological Cycle Observing Systems
IFAD	:	International Fund for Agricultural Development
IGAD	:	Inter Governmental Authority for Development
IHP	:	International Hydrological Programme
IWRM	:	Integrated Water Resources Management
MDG	:	Millennium Development Goals
NEPAD	:	New Partnership for Africa Development
OSS	:	Observatoire du Sahara et du Sahel
SSO	:	Sahara and Sahel Observatory
PRSP	:	Poverty Reduction Strategy Papers
ROSELT	:	Réseau d'Observatoires de Surveillance Ecologique à Long Terme
SADC	:	Southern African Development Community
SASS	:	North-Western Sahara Aquifer System
UMA	:	Union du Maghreb Arabe
UNCBD	:	United Nations Convention on Biological Diversity
UNCCD	:	United Nations Convention to Combat Desertification
UNEP	:	United Nations Environment Programme
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UNFCCC	:	United Nations Framework Convention on Climate Change
WHYCOS	:	World Hydrological Cycle Observing System

## LOGICAL FRAMEWORK APPROACH

Hierarchy of objectives	Expected results	Target groups and beneficiaries	Performance indicators, sources of verification	Indicative targets and time frame	Risks and mitigation strategies
<p><b>DEVELOPMENT GOAL:</b></p> <ul style="list-style-type: none"> <li>To enhance regional cooperation and water resources governance capacities to address water related development problems at national and sub-regional level contribute to.</li> </ul>	<p><b>IMPACT:</b></p> <ul style="list-style-type: none"> <li>Capacity to achieve water security to respond to vulnerability and poverty and meet the socio-economic and environmental needs enhanced;</li> <li>Common goals for sub-regional economic integration developed</li> <li>Joint management of trans-boundary water resources promoted</li> </ul>	<ul style="list-style-type: none"> <li>National water sector authorities in IGAD member countries</li> <li>IGAD and other regional organisations</li> <li>Development partners and institutions</li> <li>Public, CSO and private sector development actors</li> </ul>	<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>Sub-regional protocols or agreements on transboundary water resources</li> <li>Number of transboundary water resources development activities and projects identified for further implementation</li> </ul> <p><b>Sources:</b></p> <ul style="list-style-type: none"> <li>Regional, and national statistics and reports, Project documents or fact-sheets;</li> <li>Progress reports and project supervision/evaluation reports.</li> </ul>	<p>Within 10 to 20 years</p>	<p><b>Risks:</b></p> <ul style="list-style-type: none"> <li>Project not being able to cover all the member countries due to prevailing security situation and due to lack of political and institutional commitment</li> <li>Existing data being unreliable and scanty for use in the analysis of data</li> <li>The regional hydrological balance may be affected due to climate change and viability</li> </ul> <p><b>Mitigation</b></p> <ul style="list-style-type: none"> <li>The gap associated with security problem will be addressed by use of historical data, satellite imageries and hydrological modelling exercise</li> <li>Commitment will be strengthened through creation of awareness and consultative workshops</li> <li>Hydrological analysis models supported by satellite imageries and transposition from similar catchment</li> <li>GIS will be established in</li> </ul>

<p><b>PROJECT OBJECTIVES:</b></p> <ul style="list-style-type: none"> <li>• Enable IGAD and national water sector planning authorities of its member states to implement and operate an integrated transboundary water resources management process,</li> </ul>	<p><b>OUTCOMES:</b></p> <ul style="list-style-type: none"> <li>• Data management system for transboundary water resources knowledge within the sub-region becomes operational</li> <li>• Understanding of the linkages between water resources, environmental and socio-economic aspects enhanced.</li> <li>• Basic sub-regional digital maps required for</li> </ul>		<p><b>Indicators:</b></p> <ul style="list-style-type: none"> <li>• IGAD and National water sector planning authorities effectively operate the water systems knowledge base and appropriate information products are made available for users (planners, development actors).</li> </ul> <p><b>Source:</b></p> <ul style="list-style-type: none"> <li>• National and sub-</li> </ul>		<p>IGAD to harmonise data and facilitate exchange</p> <ul style="list-style-type: none"> <li>• A common monitoring network decision will be formulated</li> </ul>
<p><u>Activity 1:</u> Data Management</p> <ul style="list-style-type: none"> <li>• Existing data collection compilation, and analysis;</li> <li>• Establishment &amp; strengthening key data collection points and acquiring complementary field data ;</li> <li>• Elaboration of an IWRM modelling and surface and ground water assessment;</li> <li>• Elaboration and implementation of a regional (IGAD) data base.</li> </ul>	<p><b>Output 1:</b></p> <ul style="list-style-type: none"> <li>• Knowledge of the transboundary surface water and groundwater resources updated;</li> <li>• Initial model for the transboundary water systems prepared</li> <li>• An Operational Regional data base prepared</li> <li>• An updated report on water resources in the sub-region prepared</li> </ul>	<ul style="list-style-type: none"> <li>• National hydrological and hydro-geological water sector planning and regulatory authorities.</li> <li>• Various stakeholders and partners involved in water use and management throughout the sub-region.</li> <li>• Regional organisation and development partners.</li> </ul>	<ol style="list-style-type: none"> <li>1. Updated regional assessment of transboundary water systems.</li> <li>2. Initial modelling of transboundary/trans-boundary water systems.</li> <li>3. Operational Regional data base</li> <li>4. An updated report on transboundary water resources management within the sub-region</li> </ol>	<ol style="list-style-type: none"> <li>1. 12 months from starting date</li> <li>2. 12 months from starting date</li> <li>3. 22 months from the starting date</li> <li>4. 24 months from the starting date</li> </ol>	<p><b>Risks:</b></p> <p>Same as above.</p>

<p><u>Activity 2:</u> Socio-economic analysis and assessment:</p> <ul style="list-style-type: none"> <li>• Consumptive &amp; nonconsumptive water use</li> <li>• Gender issues &amp; actions</li> <li>• Water demand management</li> </ul>	<p>Output 2:</p> <ul style="list-style-type: none"> <li>• Quantified assessment of the sub-region water resources potential and demand by various sector users</li> <li>• Proper understanding of gender aspects and measures</li> <li>• Transboundary water supply and demand management strategies</li> </ul>		<ol style="list-style-type: none"> <li>1. Maps and technical reports prepared on water potential use and demand management prepare</li> <li>2. report on gender situation and actions</li> </ol>	<ol style="list-style-type: none"> <li>1. 12 months from starting date</li> <li>2. 18 months after starting</li> </ol>	Same as above
<p><u>Activity 3:</u> Environmental analysis</p> <ul style="list-style-type: none"> <li>• Drought, flooding &amp; climate variability effects analysis</li> <li>• Land degradation water quality analysis</li> <li>• Analysis of coping strategies and actions</li> </ul>	<p>Output 3: Knowledge with specific regional and national actions on:</p> <ul style="list-style-type: none"> <li>• Preparedness and response to Drought, flooding, effects of climate variability;</li> <li>• Land degradation, and water quality control.</li> <li>• Coping strategies and action plans for the environmental problems prepared</li> </ul>		<ol style="list-style-type: none"> <li>1. Maps and technical reports prepared on current status on risks management and major land degradation and water quality improvement</li> <li>2. Strategies and action plan for coping with drought, flooding, and climate variability challenges</li> </ol>	<ol style="list-style-type: none"> <li>1. 14 months from starting date</li> <li>2. 18 months after starting time</li> </ol>	Same as above
<p><u>Activity 4:</u> Preparation of digitized maps and GIS</p> <ul style="list-style-type: none"> <li>• Preparation of topographical, and other thematic sub-regional map:</li> <li>• Setting up an integrated sub-regional GIS in IGAD.</li> </ul>	<p>Output 4:</p> <ul style="list-style-type: none"> <li>• Common basic sub-regional digital maps on topography, water resources and other thematic attributes prepared</li> <li>• An operational GIS established in IGAD</li> </ul>	Same as above	<p>Indicators:</p> <ol style="list-style-type: none"> <li>1. Digital and print copies of thematic maps of scale ranging from 1:50,000 to 1:1,000,000 prepared</li> <li>2. A GIS for transboundary water resources management</li> </ol>	<ol style="list-style-type: none"> <li>1. 14months from starting time</li> <li>2. 18 months from starting time</li> </ol>	Same as above

			operational in IGAD		
<p><u>Activity 5</u>: Capacity building</p> <ul style="list-style-type: none"> <li>• Diagnosis of the institutional framework and capacities,</li> <li>• Elaboration of a regional strategies and action plans for strengthening capacities:</li> <li>• Training of national and sub-regional personnel:</li> <li>• National and regional awareness workshops</li> <li>• Development of regional framework and road map for establishing transboundary water basin:</li> <li>• Development of a common and harmonised monitoring and information exchange network</li> </ul>	<p>Output 5:</p> <ul style="list-style-type: none"> <li>• Sub regional transboundary water resources management shared visions, strategy and action plan prepared and validated</li> <li>• Regional framework and road map for establishing transboundary water basins developed</li> <li>• sub-regional networks of monitoring and information net work established</li> <li>• Trained and skilled national professional in transboundary water resources management</li> <li>• Awareness and common understanding on transboundary issuers and joint actions</li> </ul>	Same as above	<p>Indicators:</p> <ol style="list-style-type: none"> <li>1. A sub-regional vision and action plan for a medium/long term completed.</li> <li>2. Sub-regional consultative mechanism and networks of the involved institutions established</li> <li>3. Agreed priority activities to be developed under next project phase</li> <li>4. No of trained national staff in transboundary water resources management</li> <li>5. Arrangement of bilateral and/or multilateral engagement on priority transboundary water systems/basins</li> </ol>	<ol style="list-style-type: none"> <li>1. 18 months from the starting date.</li> <li>2. 18 months from the starting date.</li> <li>3. 18 months from the starting date</li> <li>4. Throughout implementation period</li> <li>5. By the end of the project</li> </ol>	Same as above

# **1 BACKGROUND**

## **1.1 ORIGIN OF THE PROJECT**

1.1.1 The Intergovernmental Authority on Development (IGAD) is one of the Regional Economic Community organisation established to expand regional co-operation and promote peace and stability to achieve sustainable economic development in the region. The IGAD member states (see maps in Annex 1) consist of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan and Uganda with its Head Quarters in Djibouti, the Republic of Djibouti. The sub region displays a diversity of geographical features, biodiversity and people, and therefore a diversity of natural resource uses and management. The region is characterised largely by arid, semi arid and dry sub humid bio climate and sustain large population of subsistent framers and nomadic communities. While pastoral activities are a major livelihood option, cultivated agriculture is the main subsistence activity in the sub-region which includes some of the driest places in the world.

1.1.2 The sub-region is endowed with a significant potential of water resources which lies in 8 transboundary river basins and 3 major aquifers system. Only the Nile basin has attracted regional and international support for integrated water resources management activities. The water resources are yet to be developed and put under use for socio-economic development and environment management purposes.

1.1.3 The yearly rainfall within the sub region ranges from 282 to 1180 mm and averages 565.7 mm which provides mean annual renewable water resources of 304 billion cubic meters. The groundwater resources portion is estimated to be about 4.56 billion cubic meters. Nevertheless, water remains as one of the main limiting factors to productivity in the sub-region, due to lack of water resources development compounded by conditions of aridity and climate variability, and limited knowledge of the water resources which constrains planning, development and sound use and management.

1.1.4 It is in this context that IGAD's 21st Council of Ministers, held in Khartoum, Sudan in January 2002, formulated the need to initiate and develop regional water resources management strategy around trans-boundary river basins and aquifers along the model of the SADC shared water protocol. The critical factor for developing a sub regional water strategy was identified as lack of adequate data and information on the occurrence, distribution and potential use of the transboundary water resources. This was recognised as priority action for development of the sub regional water resources management strategy.

1.1.5 IGAD, in view of its limited capacity in water resources management requested the Sahara and Sahel Observatory, (SSO) to develop and implement a project aimed at assessing and mapping the transboundary water resources of the sub region in view its successful regional water resources and environmental management experiences in the North Western Sahara and Sahel aquifer systems. SSO in response to this request prepared a preliminary assessment of the status of national and sub-regional synthesis of water resources data and use and a draft project outline proposal submitted for IGAD's consideration.

1.1.6 SSO with IGAD Secretariat organised a sub-regional validation workshop in Nairobi in December 2005. The workshop brought together representatives organisations in charge of water resources in the member state and resulted in the preparation of a consensus project document for funding consideration. The project was subsequently reviewed and adopted on the Experts and Ministerial meetings that preceded the 11th Summit of IGAD Heads of State and Government, held in Nairobi on March 20, 2006. SSO was mandated by the IGAD Secretariat and its member States to assist them in mobilizing the required funds for project



implementation as well as coordinate its implementation. It in this context that SSO approached the AWF for support and submitted the funding request on behalf of IGAD.

## **1.2 SECTORAL PRIORITIES**

1.2.1 The IGAD sub-region is largely characterised by arid, semi-arid and dry sub-humid areas where water is one of the key factors limiting the development. Almost all major development problems of the sub-region are water related: rapid population growth, recurrent droughts and low crop production, disastrous floods, deterioration of basic natural resources, inappropriate land use and land tenure systems. As in most arid areas, the scarcity of renewable water resources poses a serious threat to sustainable, and balanced socio-economic growth and environmental protection.

1.2.2 In IGAD member states, water is stated as a key priority within the framework of water sector policies and strategy documents addressing the issues of food security, poverty reduction, health conditions improvement and climate change and variability and the mitigation of the impacts of recurrent droughts and flooding. It is in this context IGAD's 21st Council of Ministers decided to initiate and further develop regional water sector strategy that will :

- Elaborate and implement integrated water resources management plans with regard to trans-boundary water resources management;
- Enhance sub-regional economic, social and environmental integration, contributing to a more effective use and a better management of transboundary water resources for the benefit of each individual country.

1.2.3 Water is prioritized in the national Poverty Reduction Strategy Papers (PRSP) of the countries of the sub-region and in the IGAD strategy for food security. These documents emphasise on the linkages of poverty reduction with water security, water harvesting and conservation, and water supply and sanitation. Cooperation for the development of transboundary water resources for mutual benefit has been accorded high priority by the AMCOW and the NEPAD Water and Sanitation Programme. The IGAD member countries support this framework and hence are taking the necessary implementation steps. In this respect the project addresses the key priority challenges of the sub region and will provide sound information base and strategic framework that will guide the sustainable water resources development in the sub region. The project focuses on the transboundary basins excluding the Nile basin in view of the ongoing Nile Basin Initiative that covers this area.

## **1.3 PROBLEM DEFINITION**

1.3.1 The problem definition evolved from a sustained participatory process involving all parties at sub-regional and national level including representatives of member countries, IGAD Secretariat, the East African Community and existing basin authorities over a period of 4 years. The concretisation, validation and endorsement of the project culminated at the regional planning workshop and adopted at the ministerial level as indicated in Para 1.1.6 above. The project is designed to contribute to the sustainable solutions of the main regional water resources problems identified through the regional consultations processes.

1.3.2 The key issues that emerged from this processes are i) lack of adequate data, information and knowledge of the water resources and its use ii) lack of focused IWRM based vision and strategy for transboundary water resources management iii) absence of adequate institutional and organisational capacity iv) strategies for coping with drought and flood disasters and the long term challenges of degradation and climate changes.

1.3.3 The regional process has highlighted the low level of water use and hence of water security currently estimated as about 3% of the annually renewable water resources as a basic indicator of the overall lack of water infrastructure development to ensure water security for the social and economy and environmental use. The IGAD sub-region is one of the most vulnerable areas to climate variability and recurrent droughts. There is need to understand the environmental situation and consolidate capacities to monitor the linkages between climate and the water system along with identification and mapping of the water resources and the major risks associated with degradation, pollution and water quality deterioration.

1.3.4 The water demand for various sectors is generally poorly understood except for some work done by FAO on impact of irrigation. There is a need for understanding and quantifying demand by sector as well as prospective trends with a view of designing future water security strategy of the sub-region. The hydraulic, environmental and socioeconomic analysis of the transboundary waters of the sub-region would allow a clear understanding of the risks both at the level of the sub-region as well as the risks shared by riparian countries. A shared vision will lead to an assessment of existing policies and arrangements dedicated to transboundary integrated water resources management and will facilitated and provide the basis for embarking on the establishment of transboundary river basin organisations.

1.3.5 The overarching challenge is one of poverty reduction and economic growth while addressing the profound problem of gender imbalance particularly with respect to enhancing the role of women and the youth. There are major gaps including lack gender policies, mainstreaming of gender and advocacy for women's economic empowerment and access to markets.

#### **1.4 BENEFICIARIES AND STAKEHOLDERS**

1.4.1. The direct beneficiaries of the project are the IGAD member states and their sub-regional organisation. Direct beneficiaries include initially water sector planning and regulatory authorities of the IGAD member sates and the Agriculture and Environment Division of IGAD Secretariat.

1.4.2. The project is a strategic upstream investment in information and knowledge to support more sustainable transboundary water resources management policies and strategies both at national and sub-regional level and hence opens an opportunity for wide ranging transboundary water resources development activities in the sub region. Thus the project will indirectly benefit to various stakeholders and partners involved in water use and management throughout the sub-region.

1.4.3. At a macro level, the outcomes of shared water resources assessment shall particularly facilitate social-economic development by extension of irrigated agriculture for increased food security, improvement of water sanitation, enhanced welfare and environment and shall facilitate regional economic integration thus contributing to peace and security of the sub regional and as well as the continent.

#### **1.5 JUSTIFICATION FOR AWF SUPPORT**

1.5.1 The project is to assist IGAD to assess the status of water data and information, establish a harmonised data base and GIS based monitoring, create capacity to undertake transboundary engagement and provide a strategies vision and action plan for regional action.

The project will also provide a road map for establishing transboundary water resources management organisations. In this context the project complies with the main objectives of the AWF to provide support for creating the enabling environment in transboundary water resources management in the areas of information and knowledge, monitoring, capacity building and strategic planning.

1.5.2 On the long term the implementation of the findings of the project will create suitable conditions for sustainable development and increased investment in water security under a mutually beneficial framework. IGAD's capacity will be enhanced from better understanding of transboundary water resources and will enable it to leverage political commitment at the Heads of States level to create conducive political, social and economic environment for development. This potential outcome is in line with the strategic goals of the Facility.

1.5.3 A shared vision based on integrated water resources management principles, will assist in developing basin awareness and facilitate the adoption and the implementation, by the countries, of common policies and strategies as well as legal and institutional arrangements for joint management of transboundary water resources as a key element for managing conflicts and enhancing economic integration. This approach will also provide the framework for addressing the social issues related to poverty reduction particularly with respect to enhancing the role of women and the youth.

## **2 THE PROJECT**

### **2.1 IMPACTS AND OUTCOMES**

2.1.1. The impact of the project is the creation of an enabling environment for IGAD and member countries to address the challenges to environmental vulnerability and poverty. The project will provide a framework for water security and contribute to the achievement of food; improvement in health conditions and livelihood and the achievement of common goals of sub-regional economic integration. This shall be achieved through improved water availability, reduced impacts of floods and droughts, and mitigation of erosion, siltation and other environmental threats such as loss of biodiversity based on proper water governance and building translational institutional capacity.

2.1.2. The outcomes of the project are to build and enhance the capacity of IGAD and its member countries to implement integrated trans-boundary water resources development and management. This will enable the IGAD countries to:

- Implement a common shared vision on transboundary water resources management
- Produce reliable and easily accessible information respectively for each transboundary water system that will serve as a basis for equitable sharing of water resources among riparian countries;
- Plan joint development of major priority transboundary aquifer basins that offer noticeable potential for water based development activities;
- Initiate arrangements for joint planning and implementation of transboundary water development activities within major transboundary water systems.

2.1.3. The project will also enable national water sector authorities of the member states to produce appropriate and sustainable hydrological and hydro-geological information services

that in turn will contribute to the performance of a shared water vision process at the level of each transboundary river and aquifer basins and improve risk forecasting and development of coping mechanisms.

## 2.2 OUTPUTS

2.2.1 The main output of the project is a comprehensive understudying of the surface and ground water resources of the IGAD sub region and formulation of common visions and strategies for the sustainable development of the transboundary water resources. The project will enable IGAD to devise mitigation strategies for coping up with recurrent drought and flooding prevalent in the region.

2.1.4. The specific outputs from the project include :

- i.) An updated knowledge of the physical potential and development needs of transboundary water resources.
- ii.) An understanding of the water demand for various socio-economic needs including quantified assessment of water use for domestic supply, agriculture, livestock, recreation, industries, ecology etc..
- iii.) Assessment of key environmental issues that are of national, regional and global concern such as drought and flooding, climate variability, land degradation and biodiversity, water pollution and quality and design of coping strategies and action plans .
- iv.) Preparation of sub-regional digital and printed maps of scales ranging form 1:50,000 to 1:1,000,000 and establishment of a functional Geographical Information Systems on various thematic attributes including topography, geology, geomorphology, climate, water quality, surface and ground water, soil, land use/land cover, risk zones.
- v.) Enhancement of data harmonisation and exchange and further investigations at national and sub-regional levels. This will also contribute to enhanced hydrological and hydro-geological information exchange and cooperation between the IGAD member states.
- vi.) Enhanced capacities of IGAD Secretariat and national water sector planning authorities to implement and operate an integrated sub-regional transboundary water resources management process with a functioning water resources data base, theme maps and GIS.
- vii.) Development of shared visions and strategic action plan for sustainable water resources development and a road map for launching of process of development of transboundary river basin organisations

## 2.3 ACTIVITIES

2.3.1. The project has five main activity areas i.e i) Assessment of Data, Information and Knowledge ii) Socio-Economic Assessment and Analysis iii) Environmental Analysis iv) Preparation of Digitalized Thematic Maps and GIS and v) National and Sub Regional Capacity Building. The main tasks under each activity areas are as follows.

2.3.2. **Assessment of Data, Information and Knowledge:** An assessment of the physical potential, occurrence, distribution of transboundary water resources will be undertaken. The main activity tasks are:

- Collection and analysis all aspects of existing water resources data and information and acquiring of complementary data
- Establishment or strengthening of key data collection points for sub-regional use
- Elaboration of an integrated water resources management modelling and assessment of the surface and ground water potential
- Elaboration and implementation of a regional data base in IGAD

2.3.3. **Socio-Economic Analysis and Assessment:** This activity is aimed at the elaboration of an initial quantified assessment of the sub-region water resources potential and demand by various users. The analysis will focus on

- Assess the situation and the trends of domestic water supply and use in order to provide basic input for future planning of domestic water supply and sanitation.
- the analysis of rainfed and irrigated agriculture potential and water requirement which is clearly stated as a key priority in national PRSPs and in the sub-regional strategy for food security
- Analysis of livestock water needs in view of the importance for the livelihood of millions of nomadic and semi nomadic households in the arid and semi-arid zones.
- Assessment of public and industrial water use and other recreational and ecological use and needs
- Assessment of gender issues practically in relation to the role of women and the youth in water resources management and identification of specific actions to enhance gender equity.
- Scenario analysis of future water demand and use and development of demand management strategies

2.3.4. **Environmental Analysis:** The environmental analysis of water resources will identify and map the key challenges linked to water resources management in the sub-region. The environmental analysis will address issues related to drought effects, flooding, land degradation and water pollution and quality and impact of current and future demographic trends. Sub-regional coping strategies and action plans will be prepared based on the environmental assessment and analysis.

2.3.5. **Preparation of Digitalized Thematic Maps and GIS:** The main task under this activity is the setting up of a common sub-regional mapping system for thematic data and information at appropriate scale and establishment of a functioning GIS within IGAD. The specific tasks include:

- Integrating the available national digital data and harmonising the geodesic data between the countries.
- Compilation and preparation of thematic maps will include topography, geological and hydro-geological features, soil, land use and land cover, surface and ground water resources, demography and risk zonation etc at scales ranging from 1:50,000 to 1:1,000,000.
- Compilation of the geo-based information and setting up of the GIS in IGAD with appropriate equipment, trained manpower and procedure as core unit of the sub-regional Environmental Observatory.

**2.3.6. National and Sub Regional Capacity Building:** This activity is focused on the formulation of shared visions and action plan and the strengthening national capacities and build up basic sub-regional capacities in the areas of integrated transboundary water resources management. The specific activities include

- Assessment of the political framework and strategies for regional cooperation and identification areas of improvement and diagnosis of the institutional framework and capacities that govern water sector activities within IGAD Secretariat and its member states.
- The review of national water management systems, legal tools addressing water resources management, both at the country and sub-regional level and procedures as well as coordination mechanisms for information production and dissemination;
- The implementation of a regional workshop to validate the findings of the survey and adopt recommendations as appropriate.
- Training in specific project related activities such as data generation and processing, geographic information systems, mathematical modelling, data maintenance and development, networking, and use of satellite imageries. Trainings related to satellite data and maps will be held in closer relationship and partnership with TIGER/ESA programme.
- The management of common monitoring network of water resources and harmonisation of water sector strategies between riparian countries;
- The elaboration of a sub-regional strategies and action plans for strengthening sub-regional and national capacities on a medium to long term basis including joint preparation and implementation of water sector investment activities in trans-boundary areas of common interests, etc...
- Sub-regional framework and road map for establishing transboundary river basin organisations

## **2.4 RISKS**

2.4.1. The main risks are related to the possibly of not being able to cover all the member states due to the prevailing security situation and lack of political and institutional commitment of some of the member counties to engage in data exchange and cooperative planning. The gaps created from lack of access associated with security problem will be addressed from use of historical data and past and current satellite imageries and hydrological modelling exercises. The commitment to the project emerged from the IGAD Head State summit and a consultation process that involved national water resources organisations from the member countries. The project will strengthen this commitment through awareness and consultation workshops at national and regional level. The national water institutions will serve as national focal coordinators and are directly involved in guiding the project implementation through membership in the Steering Committee.

2.4.2. The field assessment may reveal that the situation of existing data collection and analysis may have deteriorated resulting in an application risk of using unreliable or scanty data. Rigorous hydro metrological analysis will be undertaken to assess the reliability of data and gaps will be complemented by applying appropriate hydrological analysis models supported by use of satellite imagery and verification from similar catchments. The project

will identify key locations for transboundary data collection and will institute an awareness programme involving the key stakeholders from community to national and regional level to ensure long term sustainability.

2.4.3. The regional hydrological balance may be affected due to climate change and variability in terms of impact on future water resources occurrences and distribution which may have profound effect on the socio-economic development and environment of the sub - region. The project will assist IGAD to establish a GIS based harmonised data base and also formulate long term visions and strategic framework for achieving water security including coping with extreme events. A common monitoring network will be formulated for implementation. These actions will enable IGAD and its member countries to monitor long term trends and take actions to mitigate the impact from extreme events.

## 2.5 COST ESTIMATE

2.5.1. The main cost elements are related to the provision of multi-disciplinary technical assistance to undertake the technical analysis and the national consultant needed to support this effort. The technical assistance will provide expertise in water resources planning, socio-economics, environment, hydrogeology, GIS and remote sensing. SSO will provide technical staff and project management team and back service at its head quarter in Tunis. Regional and national coordination will be established at IGAD Secretariat and in national focal institutions. Procurement of satellite imagery and base maps, computers and software to establish a running GIS system is also considered. It is anticipated that the European Space Agency's TIGER Initiative will provide complementary satellite imagery under the current commitment to support African countries in water resources management areas. Allowance for capacity building at national and sub regional level is also included.

2.5.2. The cost of the project to be covered from the AWF is EURO 1,831,600 (93% ) with an additional commitment from IGAD as well as national government of Euro 127,400 (7%) in kind and cash allocation resulting in total project cost of Euro 1,959,000. The detailed costs and nature of expenses are provided in Annex 2 with summary by component indicated in Table 2.1 below.

**Table 2.1: Costs Estimate and Financing Plan (Euro)**

Item	Description	AWF	SSO/ IGAD	Total Cost
1	Technical assistants	371,000		371,000
2	National consultants	324,000		324,000
3	Acquisition of Satellite Imagery and base map Preparation	100,000		100,000
4	Hydrological equipments	70,000		70,000
5	Computer and office equipment and software	60,000		60,000
	GIS equipment and software	100,000	-	100,000
6	National and regional workshops (in seven countries)	150,000	50,000	200,000
7	Short term training	100,000	0	100,000
8	Coordination, staff allowance and backup	342600	42,400	385,000

9	Project monitoring and reporting	20,000	5,000	25,000
10	Steering committee	20,000	5,000	25,000
11	International and local travel	150,000	10,000	160,000
12	Communication and office supplies	24,000	15,000	39,000
<b>13</b>	<b>PROJECT GRAND TOTAL</b>	<b>1,831,600</b>	<b>127,400</b>	<b>1,959,000</b>

### 3 IMPLEMENTATION

#### 3.1 INSTITUTIONAL ARRANGEMENT

3.1.1. The Inter-Governmental Authority on Development (IGAD) is the recipient of the AWF grant. IGAD is the leading sub-regional organisation mandated by its member states to enhance sub-regional economic integration and cooperation. The IGAD Priority Programmes and Projects are implemented to achieve the core strategic outputs of development and harmonisation policies; information for decision making; capacity building of member states and research, science and technology agenda. IGAD is headed by an Executive Secretary with four main divisions concerned with administration and finance; agriculture and environment; economic cooperation & social development and peace & security. The project will be implemented under the agriculture and environment division. The Chief of the natural and energy section will be directly responsible for project implementation.

3.1.2. IGAD has requested the support of SSO to prepare and implement the project and in respect authorized SSO to execute the project in the capacity of an Executing Agency. Copy of the letter of authorisation is given in Annex 3. The rationale behind the request from IGAD for SSO to assist in implementation project lies primarily with SSO experience with similar initiatives in the countries covered under SSO mandate. SSO has been assisting IGAD from the initial stage of concept development to the formulation of the project proposals through the regional consultation process and submission of funding proposals. IGAD and SSO will sign an Executing Agency Agreement for this purpose.

3.1.3. SSO is a regional organisation with international character whose mission is to mobilize and develop the capacities of its members and partners to address environmental problems along with sustainable development and poverty reduction-with a particular focus on water and land degradation issues.. SSO staffing and management team is composed of the Executive Secretary, senior and junior professionals and general support personnel. SSO has track records of implementation of similar project in North and West Africa. The over status of SSO is given as Annex 4.

3.1.4. The project implementation structure comprises of (i) National focal water institutions, (ii) Steering Committee and (iii) Regional Coordinating Unit (RCU). The Steering Committee will be composed of member from (i) IGAD member countries; (ii) IGAD Secretariat; (iii) the Project Regional Coordinator and the national coordinators; (iv ) key partners and (v) SSO. The Steering Committee (SC) will endorse the annual activity programs and ensure good governance as the highest decision making body of the project. It shall assess the soundness and quality of technical results achieved, discuss, approve and adjust as required the work programme and the smooth implementation of the Project.

3.1.5. The Regional Coordinating will be led by a Regional Project Coordinator (RPC) appointed by IGAD located at IGAD headquarters. The RPC will be responsible for the coordination of the project and facilitation of the links between the study team and national focal institutions and on behalf of IGAD, ensure project activities results in conformity with



the Steering Committee recommendations, prepare progress reports to be submitted to the Steering Committee,; prepare assessment reports as requested by the Steering Committee; and perform the duties of the secretariat of the Steering Committee.

3.1.6. National designated focal water institutions in IGAD member states will be responsible for implementation at national level. In this respect, each national focal water institution will designate a National Project Coordinator (NPC) to coordinate the planning and implementing processes which involves various national hydrological and hydro-geological teams and other water sector stakeholder institutions. This will ensure broad ownership of project activities and outputs by stakeholders and Government, and will thereby facilitate implementation.

3.1.7. A project implementation team consists of the Project Manger appointed by SSO, the technical staff from SSO and consultant. The Project Implementation team will be located in Tunis at SSO head office. The Project Manager will plan, organise and supervise the implementation of consultancy services, subcontracting activities and provide technical guidance to project activities implementation. National implementation will be assisted by engagement of national consultants on case by case basis. The implementation structure of the project is summarised in Annex 5.

## 3.2 PERFORMANCE PLAN

3.2.1. The project implementation supervision will follow the performance plan summarised in table 3.1 below.

Table 3.1: Performance Plan of the project:

Output	Critical measurable indicators	Time frame target
Output 1: An improved and updated holistic knowledge of transboundary water resources	Key data collection points for sub regional use and reporting procedure established	12 months from starting date
	Updated regional assessment and mapping of transboundary water systems performed	14 months from the starting date.
	Initial modelling of transboundary water systems performed	12 months from the starting date.
	Operational Regional data base at IGAD established	22 months from starting date
Output 2: An analysis of transboundary water resources socio-economic aspects performed within the sub-region	A quantified assessment of the sub-region water resources potential and consumptive and non consumptive use established i.e domestic, agriculture, energy, livestock, industries, and environment.	12 months from starting date
	Specific actions to address gender issues prepared and validated for implementation	18 months from starting date
Output 3: An analysis of transboundary water resources environmental aspects performed within the sub-region	An assessment of drought and flooding occurrences and impacts produced with mitigation strategies and specific actions including early warning and forecast system covering the transboundary hydrological basins.	14 months from starting date

	Major land degradation factors affecting transboundary basins assessed, mapped with mitigation strategies and actions.	12 months from starting date
	Ground water resources quality and quantity assessment including water catchments areas, major degradation and pollution sources with specific mitigation strategies and actions prepared	14 months from starting date
Output 4: Basic sub-regional maps produced and made available	Preparation of base sub-regional digital and printed maps completed.	12 months from starting date
	Thematic maps will include topography, geological and hydro geological features, soil, land use and land cover, surface and ground water resources, demography and risk zonation etc at scales ranging from 1:50,000 to 1:1,000,000	14 months from starting date
	An operational GIS providing thematic information on transboundary water resources installed in IGAD.	18 months from starting date
Output 5: Enhanced national and sub regional capacities to implement and operate an integrated sub-regional transboundary water resources management process	The sub regional shared vision on transboundary water resources management with national and sub regional water resources management institutional framework developed and validated.	18 months from the starting date
	The sub regional transboundary water resources management strategy and action plan prepared and validated	18 months from the starting date.
	National and regional awareness creation and validation workshops held	At least 7 workshops at national level and 3 regional workshops held by end of project
	Training of IGAD and national staff on national and sub regional water resources management conducted	At least 4 training modules held for national staff by the end of the project
	Sub-regional framework and road map for establishing transboundary river basin organisations prepared and validated	18 months after commencement
	Common monitoring network and harmonisation of water sector information and exchange established	18 months after commencement

### 3.3 IMPLEMENTATION SCHEDULE

3.3.1. The project will be implemented in the framework of a planned duration of 24 months, from the starting date. Project implantation will commence with the set-up of the

Project Management Team in SSO and Coordination Unit in IGAD in the initial three month period and selection of the necessary Technical Assistance team.

3.3.2. The main activities are related with the collection and analysis of existing data, filling up gaps, socio-economic and environmental analysis and elaboration of an integrated water resources management model in the first year of the project. This will be followed by the GIS data base, preparation of various maps, elaboration of development strategies and action plans along with the institutional framework in the second year. The project implementation is provided in Annex 6.

### 3.4 PROCUREMENT AND EXECUTION

3.4.1. Procurement arrangements are summarized in Table 3.3 below. All procurement of goods, works and acquisition of consulting services financed by the AWF grant will be in accordance with the Bank's *Rules of Procedure for Procurement of Goods and Works* or, as appropriate, *Rules of Procedure for the Use of Consultants*, using the relevant Bank Standard Bidding Documents. As the Executing Agency, OSS will be responsible for the implementation of the Project. OSS has the capacity, experience, expertise to manage the procurement requirement of the Project.

3.4.2. Goods: Generally procurement of satellite imagery; GIS computer equipment and software and hydrological equipment will be through international shopping due their special nature.

3.4.3. Service: Procurement of short term training will be undertaken using the international shopping procedures as special expertise is required. Technical assistance and services of national consultant will be engaged on short list basis while national shopping procedure will be applied for national and regional workshops.

Table 3.3: Summary Procurement in Euro

Item	Description	International shopping	Short list	National Shopping	Others
1	Technical assistants		371000		
2	National consultants		324000		
3	Acquisition of Satellite Imagery and base map Preparation	100,000			
4	Hydrological equipments	70,000			
5	Computer and office equipment and soft ware	0		60,000	
	GIS and equipment and software	100,000			
6	National and regional workshops	0		150,000	
7	Short term training	100,000			
8	Coordination, staff allowance and backup	0			342,600
9	Project monitoring and reporting	0			20,000
10	Steering committee	0			20,000
11	International and local travel	0			150,000

12	Communication and office supplies	0			24,000
<b>13</b>	<b>PROJECT GRAND TOTAL</b>	<b>370,000</b>	<b>695,000</b>	<b>210,000</b>	<b>556,600</b>

3.5.6 The services of a Project Auditor will be funded by AWF's Administrative budget and will be procured directly by AWF by the means of a shortlist. The selection procedure will be based on the comparability of technical proposals and selection of the lowest financial offer. For contracts of values below Euro 10,000, Direct Negotiation procedures will apply.

### 3.5 DISBURSEMENT ARRANGEMENTS AND EXPENDITURE SCHEDULE

3.5.1. The overall costs from AWF grant support is 1.8316 million Euros as presented in Table 2.1. The funds will be channelled through SSO, within the framework of the Executing Agency Agreement between IGAD and SSO. SSO will open a Special Account in a Bank acceptable to Bank. The operation of the account will be the sole responsibility of SSO.

3.5.2. Disbursements of funds will be made on revolving method basis whereby funds will be deposited in the Special Account. The disbursement will be on a semi-annual basis and will be transferred on the basis of requests for deposits into the special account from SSO including statement of expenditures of previously disbursed funds, progress reports and updated work schedules.

Table 3.5: Semi Annual Disbursement Schedule in Euro

Item	Description	1st half year	2nd half year	3rd half year	4th half year	Total
1	Technical assistants	111300	92750	92750	74200	371,000
2	National consultants	97200	81000	81000	64800	324,000
3	Acquisition of Satellite Imagery and base map Preparation	-	60000	40000	-	100,000
4	Hydrological equipments	42000	28000	342600	-	412,600
5	Computer, and Office equipment and software	36000	24000	-	-	60,000
6	GIS equipment and software	60,000	40000			100,000
7	National and regional workshops	50000	25000	25000	50000	150,000
8	Short term training	-	50000	-	50000	100,000
9	Coordination, staff allowance and backup	99030	85150	85150	73270	342600
10	Project monitoring and reporting	5000	5000	5000	5000	20,000
11	Steering committee	10000	-	-	10000	20,000
12	International and local travel	45000	37500	37500	30000	150,000
13	Communication and office supplies	6000	6000	6000	6000	24,000
<b>14</b>	<b>TOTAL</b>	<b>561530</b>	<b>534400</b>	<b>372400</b>	<b>363270</b>	<b>1,831,600</b>
<b>15</b>	<b>Percent of total AWF Grant</b>	<b>31</b>	<b>29</b>	<b>20</b>	<b>20</b>	<b>100</b>

### **3.6 ACCOUNTING AND AUDIT ARRANGEMENTS**

3.6.1. SSO will be responsible for financial management of the project within the framework and Executing Agency Agreement between IGAD and SSO. Its management services have an internal audit, overseen by an external charter accountant, to audit and monitor all operations as required by donors. The audit service also ensures the reliability of all the operations and approves the procedures as a prerequisite for all final payments.

3.6.2 The Bank will recruit and retain an auditor to perform ex-post evaluation or supporting documents review and audit the project. The Bank will require that a statement of expenditure and supporting documents review be performed and certified by the independent auditor at predetermined intervals to ensure that fund have been utilized in line with the grant agreement. The costs of such audit shall be charged to AWF and are not included in the Grant.

### **3.7 MONITORING, EVALUATION AND REPORTING ARRANGEMENTS**

3.8.1 The objectives, actions, expected outputs and outcomes of the project are summarised in the attached LFA prepared on the basis of the outcomes of IGAD regional planning workshop (Nairobi, December 2005). A list of specific indicators of achievement and means of verification mentioned will serve as a basis for result based performance monitoring during implementation and after completion.

3.8.2 SSO has adapted specific internal monitoring and evaluation procedure witch allows timely financial monitoring based on analytical accounts of each project following specific indicators. This monitoring allows periodic and accurate reporting made on the basis of Agreement between SSO and IGAD under which SSO prepares and submits quarterly and annual progress reports to IGAD and AWF. The reports will be prepared through the Regional Project Coordinator in consultation with the IGAD sub-regional coordinating unit and the participating countries

3.8.3 The Facility's own project supervision will include regular correspondence with the IGAD and SSO, and review of progress and annual reports and participation on stakeholder workshops. AWF will undertake field supervision missions and also monitor if specific technical progress and achievements have been timely delivered with the required quality and if the expenditures are in agreement with the budgets and schedules.

3.8.4 The level of achievement in relation to the project objectives and expected results shall be reported to, and assessed by, the Steering Committee during its annual meetings. These reports shall cover the technical, financial and administrative issues. The reports to be shared with the participating countries and partners shall address specific difficulties or constraints, if any, facing the project and suggest appropriate solutions to mitigate identified problems.

## **4 PROJECT BENEFITS**

### **4.1 EFFECTIVENESS AND EFFICIENCY**

4.1.1. The project will be effective in promoting IWRM both at national and trans-boundary levels. The project will facilitate closer cooperation and harmonisation between IGAD member states through the development of the water resources data base and GIS based monitoring system. The adoption of common vision and strategic action plan based on the

IWRM principles for a joint management of transboundary water resources will provide an effective mechanism for sustainable water resource development of the sub region.

4.1.3. The project is a strategic upstream investment on information and knowledge and will provide quality data and information on water resources for planning, development and monitoring uses. In this respect the Project activities will provide specific knowledge on water resources potential and the extent of its availability, interactions with other elements of the ecosystem, vulnerability, threats faced with respect to pollution, over-exploitation, and transboundary impacts, the capacity to respond to various demands and needs. The project should allow the countries to acquire substantive technical capacities to develop and monitor water resources on a sustainable basis.

4.1.4. The objectives of the project are closely linked to the AWF focus areas. The Project main objective is to promote IWRM principles in transboundary water resources within the IGAD sub-region where poverty and development problems are particularly correlated to water availability and quality. The project will address for the first time, transboundary water problems of the sub-region by focusing on updating and expanding water resources knowledge and strengthening capacities within an IWRM perspective. At the same time it addresses the connection between hydrology, hydro-geology, environmental and socio-economic concerns and their interactions and/or impacts on the development of the sub-region.

## **4.2 SUSTAINABILITY**

4.2.1. The project has been prepared using a participative approach and will be implemented through this approach. Project implementation will involve actively the national teams and put the emphasis on developing and their performance and capacities. This approach will ensure national participation and ownership of project activities by national teams as well as continuity of relevant activities supported by the project, beyond the project period.

4.2.2. The project takes into consideration all the facets of sustainability (environment, social-economic and institutional) as well as gender issues. In fact the project is gender sensitive since women will benefit from any improvement of water knowledge valued for water management and hence for water sector development activities. The participation of women will be evenly encouraged as far as project implementation is concerned particularly in terms of identifying the issues and designing strategies and actions to ensure long term solutions.

4.2.3. Moreover, updating the knowledge of water resources and their environmental and socioeconomic aspects will have very constructive impacts on strengthening the sub-region's capacities in terms of (i) mitigation of drought and flooding and related climate variability impacts through an effective monitoring of and a sound management of its water resources; (ii) meteorological forecasting and preparedness to manage critical situations; (iii) improving access to water both for domestic and other development needs; (iv) preventing water conflicts and (v) providing an enabling environment for regional economic integration.

4.2.4 The project will provide institutional strategies and road map to engage IGAD on the establishment of transboundary river basin organisation to implement mutually beneficial developments thus ensuring long term engagement of the riparian countries in sustainable of the water resources management.

## **5 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 CONCLUSIONS**

5.1.1. Within the context of the IGAD sub-region, the Project is a very important and well justified initiative towards meeting the challenges facing the member countries. These challenges include (i) The need for appropriate hydrological and hydro-geological information and knowledge for addressing water resources related problems and (ii) The need to progressively initiate and develop sustainable planning and management of transboundary water resources related activities through IWRM application and other enabling activities devoted to the elaboration and the implementation of a shared water vision process for effective governance of transboundary waters.

5.1.2. The project which is in line with water related development sectors strategic priorities of the IGAD member states, meets the Africa Water Facility vision and objectives of promoting transboundary cooperation to address poverty and meet the MDG targets. The strategic priorities accorded to water is in response to the critical need for mitigating recurrent droughts effects of climate variability impacts as well as in ensuring food and water security through agriculture development and secure water supply and sanitation.

### **5.2 RECOMMENDATIONS**

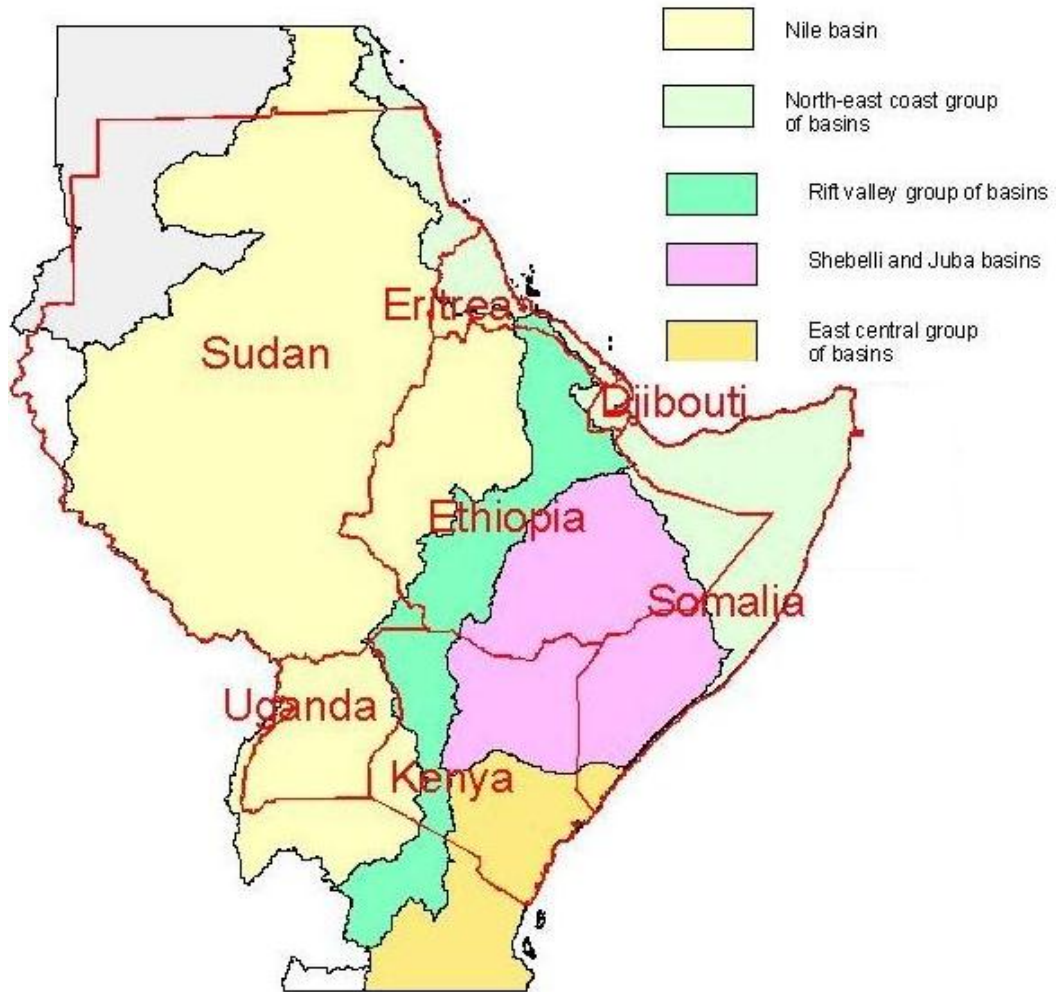
5.2.1 In view of the strategic importance of the project for the long term transboundary water resources management in the IGAD member states, and based on the critical assessment of the relevance, effectiveness, and sustainability of the Project, it is recommended the African Development Bank approve a total grant no exceeding Euro1.8316 million from the African Water Facility Trust Fund to IGAD to undertake the assessment, mapping and management of transboundary water resources in the member counties.

5.2.2 The following conditions for first disbursement from the grant should be met:

- i) Executing Agency Agreement between IGAD and SSO for IGAD to authorise SSO to execute the project and manage the grant fund. The Executing Agency Agreement should be acceptable to AWF (Para 3.1.1)
- ii) Appointment by IGAD of Project Coordinator acceptable to AWF (Para 3.1.5)
- iii) Appointment of the Project Manager by SSO acceptable to IGAD and AWF (Para 3.1.7)
- iv) Establishment of the Special Account by SSO in a Bank acceptable to AWF (Para 3.5.1)

**Annex 1.**

**Maps: Country/Location and Project Area**





## Annex 2: Breakdown of the Cost Estimate

### Annex 2.1: Manpower Cost

Item	Staff Required	Input	Cost	
			Rate	Amount
			Staff Allowance	
<b>1.0</b>	<b>OSS/IGAD Staff</b>	<b>Man Month</b>		
1.1	Project Manager and WRM Specialist	24	2200	52,800
1.2	Regional Project coordinator	24	2200	52,800
1.3	Senior Hydro geologist	12	2200	26,400
1.4	Senior Data Analyst	24	2200	52,800
1.5	Senior Socio-economist	6	2200	13,200
1.6	Hydro-meteorologist	6	2200	13,200
1.7	Hydrologist	12	2200	26,400
<b>1.8</b>	<b>Total</b>	<b>108</b>		<b>237,600</b>
<b>2.0</b>	<b>External Consultants</b>		<b>Consultancy Fee</b>	
			<b>Rate</b>	<b>Amount</b>
2.1	GIS specialist	6	7000	42,000
2.2	Modeling Specialist	10	7000	70,000
2.3	Environmentalist	5	7000	35,000
2.4	Remote Sensing Expert	6	7000	42,000
2.5	Land use Expert	6	7000	42,000
2.6	Irrigation Engineer	4	7000	28,000
2.7	Economist	6	7000	42,000
2.8	Livestock expert	4	7000	28,000
2.9	Legal Expert	6	7000	42,000
<b>2.10</b>	<b>Total</b>	<b>53</b>		<b>371,000</b>
<b>3.0</b>	<b>National Consultants</b>		<b>Consultancy Fee</b>	
			<b>Rate</b>	<b>Amount</b>
3.1	Meteorologists	14	2000	28,000
3.2	Hydrologist	18	2000	36,000
3.3	Hydro geologist	15	2000	30,000
3.4	Water supply engineer	18	2000	36,000
3.5	Irrigation Engineer	15	2000	30,000
3.6	Geologist	15	2000	30,000
3.7	Socio-economist	21	2000	42,000
3.8	Environmentalist	18	2000	36,000
3.9	Data Analyst	28	2000	56,000
<b>3.10</b>	<b>Total</b>	<b>162</b>		<b>324,000</b>
<b>4.0</b>	<b>Grand Total</b>			<b>932,600</b>

## Annex 2.2: Cost of Goods, Service and project Operation

Item	Description	AWF Contribution	SSO/IGAD Contribution	Total Cost Estimate
1.0	<b>Service</b>			
1.1	Technical assistants	371,000		371,000
1.2	National consultants	324,000		324,000
1.3	Acquisition of Satellite Imagery and base map Preparation	100,000		100,000
<b>1.4</b>	<b>Subtotal</b>	<b>795,000</b>		<b>795,000</b>
<b>2.0</b>	<b>Goods</b>			
2.1	Hydrological equipments	70,000		70,000
2.2	Computer equipment and software	40,000		40,000
2.3	GIS equipment and software	100,000		100,000
2.4	Office equipment	20,000		20,000
<b>2.5</b>	<b>Sub Total</b>	<b>230,000</b>		<b>230,000</b>
3.0	Participation, Awareness and Training			
3.1	National workshops (in seven countries)	100,000	50,000	150,000
3.2	Sub regional workshops	50,000		50,000
3.3	Short term training	100,000		100,000
<b>3.4</b>	<b>Sub Total</b>	<b>250,000</b>	<b>50,000</b>	<b>300,000</b>
<b>4.0</b>	<b>Coordination and Implementation</b>			
4.1	SSO/IGAD coordination team	237,600	32,400	270,000
4.2	SSO/IGAD head office backup and technical service	30,000	10,000	40,000
4.3	National project coordination support	75,000		75,000
4.4	Project monitoring and reporting	20,000	5,000	25,000
4.5	Steering committee	20,000	5,000	25,000
<b>4.6</b>	<b>Sub Total</b>	<b>382,600</b>	<b>52,400</b>	<b>435,000</b>
<b>5.0</b>	<b>Operating costs</b>			
5.1	International travel	50,000		50,000
5.2	Local transport	100,000	10,000	110,000
5.3	Communication costs	12,000	10,000	22,000
5.4	Office supplies	12,000	5,000	17,000
<b>5.5</b>	<b>Sub Total</b>	<b>174,000</b>	<b>25,000</b>	<b>199,000</b>
<b>6.0</b>	<b>PROJECT GRAND TOTAL</b>	<b>1,831,600</b>	<b>127,400</b>	<b>1,959,000</b>

Annex 2.3: Disbursement Schedule

Item	Description	1st half year	2nd half year	3rd half year	4th half year	Total
<b>1.0</b>	<b>Services</b>					
1.1	Technical assistants	111300	92750	92750	74200	371,000
1.2	National consultants	97200	81000	81000	64800	324,000
1.3	Acquisition of Satellite Imagery and base map Preparation		60000	40000		100,000
<b>1.4</b>	<b>Subtotal</b>	<b>208500</b>	<b>233750</b>	<b>213750</b>	<b>139000</b>	<b>795,000</b>
<b>2.0</b>	<b>Goods</b>					
2.1	Hydrological equipments	42000	28000			70,000
2.2	Computer equipment and software	24000	16000			40,000
2.3	GIS equipment and software	60000	40000			100,000
2.4	Office equipment	12000	8000			20,000
<b>2.5</b>	<b>Sub Total</b>	<b>138000</b>	<b>92000</b>			<b>230,000</b>
<b>3.0</b>	<b>Participation, Awareness and Training</b>					
3.1	National workshops (in seven countries)	25000	25000	25000	25000	100,000
3.2	Sub regional workshops	25000			25000	50,000
3.3	Short term training		50000		50000	100,000
<b>3.4</b>	<b>Sub Total</b>	<b>50000</b>	<b>75000</b>	<b>25000</b>	<b>100000</b>	<b>250,000</b>
<b>4.0</b>	<b>Coordination and Implementation</b>					
4.1	SSO/IGAD coordination team	71280	59400	59400	47520	237,600
4.2	SSO/IGAD head office backup and technical service	9000	7000	7000	7000	30,000
4.3	National project coordination support	18750	18750	18750	18750	75,000
4.4	Project monitoring and reporting	5000	5000	5000	5000	20,000
4.5	Steering committee	10000			10000	20,000
<b>4.6</b>	<b>Sub Total</b>	<b>114030</b>	<b>90150</b>	<b>90150</b>	<b>88270</b>	<b>382,600</b>
<b>5.0</b>	<b>Operating costs</b>					
5.1	International travel	15000	12500	12500	10000	50,000
5.2	Local transport	30000	25000	25000	20000	100,000
5.3	Communication costs	3000	3000	3000	3000	12,000
5.4	Office supplies	3000	3000	3000	3000	12,000
<b>5.5</b>	<b>Sub Total</b>	<b>51000</b>	<b>43500</b>	<b>43500</b>	<b>36000</b>	<b>174,000</b>
<b>6.0</b>	<b>PROJECT GRAND TOTAL</b>	<b>561530</b>	<b>534400</b>	<b>372400</b>	<b>363270</b>	<b>1,831,600</b>
<b>7.0</b>	<b>Percent of total AWF Grant</b>	<b>0.31</b>	<b>0.29</b>	<b>0.20</b>	<b>0.20</b>	<b>1.00</b>

**Annex 3: Letter of Requiring from SSO for Funding the IGAD Project**

**I G A D**

INTERGOVERNMENTAL AUTHORITY  
ON DEVELOPMENT



AUTORITÉ INTERGOUVERNEMENTALE  
POUR LE DÉVELOPPEMENT

*Ref: ES10-400/ /06*

*Date: 27 December 2006*

**The President  
African Water Facility African Development Bank  
BP 323-1002 Tunis Belvedere  
Tunis, Tunisia**

**Fax: (216 71) 10 37 44**

**Dear Sir,**

**RE: THE AFRICAN WATER FACILITY SUPPORT TO MAPPING, ASSESSMENT  
AND MANAGEMENT OF SHARED WATER RESOURCES IN THE IGAD  
REGION PROGRAMME.**

Thanks for your consideration of the above programme jointly formulated by IGAD and OSS. I wish to inform you that at an IGAD/OSS consultative meeting held in Djibouti on 17<sup>th</sup> November 2006, it was agreed that OSS in Tunis should finalise the funding issues with ADB African Water Facility. It was further agreed that in order not to delay any activities during implementation, IGAD authorised OSS to act on its behalf with respect to issues related to this programme. Other implementation issues are as per Appraisal report which you have already considered.

Looking forward to our continued cooperation.

  
**Dr. Attalla Hamad Bashir  
Executive Secretary**

cc. Mr Tefera Woudeneh  
Chief Water Operations Officer  
African Water Facility  
African Development Bank  
BP 323-1002 Tunis Belvedere  
Tunis, Tunisia

Dr Youba Sokona  
Executive Secretary  
Sahara and Sahel Observatory (OSS).  
Boulevard du Leader Yasser Arafat, BP 31.  
1080 Tunis (Tunisia)  
Fax: 00216 71 206 636

**DJIBOUTI**

**ETHIOPIA**

**ERITREA**

**KENYA**

**SOMALIA**

**SUDAN**

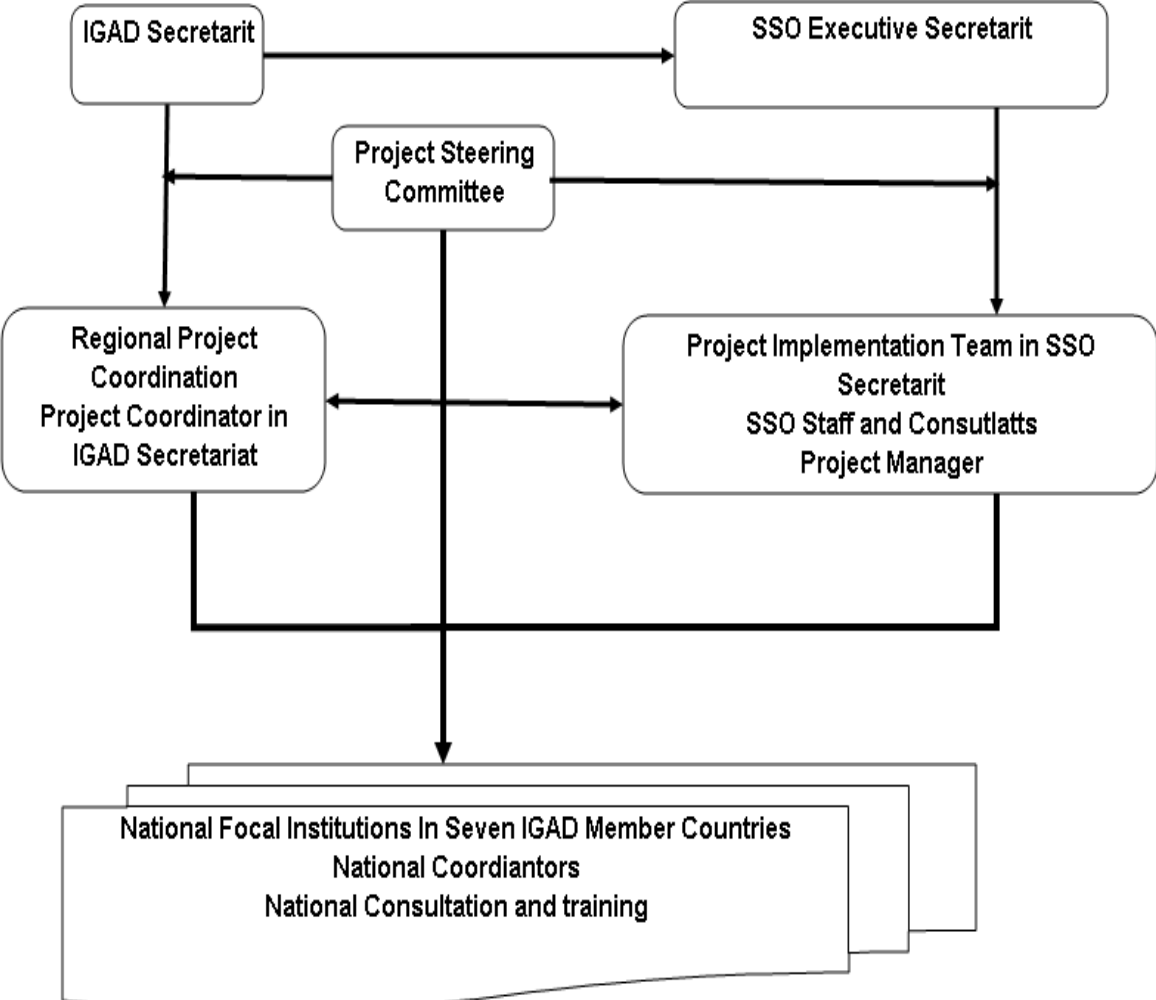
**UGANDA**

**P.O. Box 2653 Djibouti, Tel (253) 354050, Fax (253) 356994/356284/353520,  
E-mail: [igad@intnet.dj](mailto:igad@intnet.dj) Web site: [www.igad.org](http://www.igad.org)**

## Annex 4: Status of SSO

<b>1) Name and Address of Applicant's organization</b>
<p>Observatoire du Sahara et du Sahel (OSS)          Boulevard du leader Yasser Arafat, B.P. 31-1080 Tunis, Tunisie.          Tél : +216-71206633. Fax : +216-71206636. E-mail: <a href="mailto:boc@oss.org.tn">boc@oss.org.tn</a></p>
<b>2) Institutional and Legal Status of the Applicant</b>
<ul style="list-style-type: none"> <li>- <i>Legal status:</i> The Sahara and Sahel Observatory is an international autonomous organisation established in Tunisia. OSS members and partners are 21 African countries, 4 sub-regional African organisations (IGAD, UMA, CILSS and the CEN-SAD), Canada, Germany, France, Italy and Switzerland, UNESCO, UNCCD, FAO and "ENDA-TM".</li> <li>- <i>Main Function and activities:</i> OSS mission is to mobilize and develop the capacities of its members and partners to address environmental problems along with sustainable development and poverty reduction-with a particular focus on water and land degradation issues.</li> </ul> <p>The role of OSS is squarely within the context of international environmental commitments (Agenda 21, UNCCD, UNCBD, and UNFCCC) for sustainable development in the arid, semi-arid and dry sub-humid zones of Africa. OSS activities focuses on enhancing African capacities to produce , manage, share and disseminate information useful and knowledge useful to sustainable natural resources management. OSS acts as a facilitator to promote synergies and to mobilize North-South-South partnerships for the benefit of its members. It does not act in their stead.</p>
<b>3) Organization and Management</b>
<ul style="list-style-type: none"> <li>- <i>Structure of the organization:</i></li> </ul> <p>OSS is structure comprises OSS governing bodies, and the executive secretariat.</p> <p>OSS Governing Bodies are: i) the General Assembly meets every four years adopts the strategy and quadrennial programme of the organisation, ii) The Executive Board meets annually, adopts the accounts, the financial reports and the budget, iii) The Strategic Orientations Committee is a consultative body, iv) The executive secretariat is in charge of implementing the organisation's strategy and activity program as well as its functioning.</p> <ul style="list-style-type: none"> <li>- <i>Staffing and Management Team:</i></li> </ul> <p>OSS staffing and management team is composed of the Executive Secretary, senior and junior professionals and general support personnel (11Professionals and 10 general support) including a management team composed of an administrative coordination, staff and account management, internal audit and a monitoring evaluation unit.</p> <ul style="list-style-type: none"> <li>- <i>Financial management and financial governance</i></li> </ul> <p>OSS financial management and governance are ruled by three main texts (Staff Statutes, Staff Rules and Financial Rules as well as by an internal "Operational procedure" manual. Financial management and governance are assured by an administrative and finance unit in close collaboration with a monitoring-evaluation unit and the programs coordinators. OSS holds specific bank accounts for its different projects and funding in Euro, US \$ as well as in convertible TND.</p> <ul style="list-style-type: none"> <li>- <i>Financial reporting and auditing</i></li> </ul> <p>OSS has its own internal audit assured by an external charter auditor. All OSS programs, projects as well as operating budget are audited by the KPGM cabinet. All OSS accounts are audited and reported to financial partners (following specific agreements) and to the OSS Executive Board and to the general Assembly. OSS has a proven capacity and experience in financial management and reporting following OSS standards and also specific donor's standards. OSS has experience with bilateral cooperation (e.g. DDC-Switzerland, CIDA, GTZ, France, and Italy) as well as with international agencies such as IFAD, UNEP, GEF and the FFEM).</p>
<b>4) Names and Addresses of Co-financiers and Partners (When Applicable)</b>
<p><i>State names and postal addresses of the Co-financiers and Partners</i></p>
<p>NB. It is assumed that the final recipient of the grant is the executing agency on its own behalf or on behalf of clearly identified eligible beneficiaries. If the recipient is different from the executing agency, the relationship between the two should be clearly shown and the capacities to undertake the respective responsibilities should be demonstrated</p>

**Annex 5: Implementation Arrangement**



## Annex 6: Implementation Schedule

ACTIVITY	2007						2008					
	1st half			2nd half			1st half			2nd half		
<b>Assessment of Data, Information and Knowledge</b>												
1. Assessment, collection and analysis of existing data												
2. Strengthening of key data collection points for sub regional use												
3. Acquiring complementary field data												
4. Assessment of transboundary surface and ground water potential												
5. Water resources management modelling and analysis												
<b>Socio-Economic Assessment and Analysis</b>												
6. Domestic and municipal water use												
7. Irrigated agriculture and livestock water use												
8. Industries, energy, environmental and other water use												
9. Assessment of gender issues and preparation of action plan												
10. Formulation of sub-regional water demand management plan												
<b>Environmental Analysis</b>												
11. Drought and flood risk assessment, mapping and mitigation												
12. Land use and degradation assessment and mapping												
13. Water pollution and quality assessment												
14. Formulation of sub regional environmental management plan												
<b>Preparation of Digitalized Thematic Maps and GIS</b>												
15. Preparation of digitalized sub regional topographical maps												
16. Preparation of other sub regional thematic maps												
17. Establishment of an operational GIS in IGAD												
<b>National and Sub Regional Capacity Building</b>												
18. Diagnosis of the national institutional framework												
19. Training at national and sub-regional level												
20. Formulation of shared visions, strategies and action plan												
21. Formulation of Framework for river basin organisations												
22. Common monitoring and information sharing network												
23. National and sub regional awareness and validation workshops												
<b>Report preparation (Inception, Interim, Thematic, final etc)</b>												