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Darfur Water Project for Conflict Resolution and Peace-Building

**Investment Planning, Priority Rehabilitation Works and Capacity Building
to Meet Water and Sanitation Needs in 15 to 20 Towns**

APPRAISAL REPORT

Draft

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TABLE of CONTENTS

LOGICAL FRAMEWORK ANALYSIS.....	V
EXECUTIVE SUMMARY	VII
1. BACKGROUND	1
1.1 PROJECT RATIONAL AND ORIGIN	1
1.2 SECTOR STATUS AND PRIORITIES.....	2
1.3 PROBLEM DEFINITION.....	3
1.4 OBJECTIVES AND SCOPE OF THE PROJECT.....	4
1.5 BENEFICIARIES AND STAKEHOLDERS.....	4
1.6 JUSTIFICATION FOR AWF INTERVENTION.....	5
2. THE PROJECT.....	5
2.1 GOAL AND IMPACTS.....	5
2.2 OUTCOMES	5
2.3 OUTPUTS.....	5
2.4 ACTIVITIES	6
2.5 RISKS AND ASSUMPTIONS.....	12
2.6 COSTS AND FINANCING.....	13
3. PROJECT IMPLEMENTATION.....	13
3.1 RECIPIENT AND EXECUTING AGENCY	13
3.2 IMPLEMENTATION ARRANGEMENTS	14
3.3 IMPLEMENTATION SCHEDULE	14
3.4 PROCUREMENT ARRANGEMENTS.....	14
3.5 DISBURSEMENT ARRANGEMENTS AND EXPENDITURE SCHEDULE	17
3.6 FINANCIAL MANAGEMENT ARRANGEMENTS.....	17
3.7 MONITORING AND REPORTING ARRANGEMENTS	18
4. EFFECTIVENESS, EFFICIENCY AND SUSTAINABILITY.....	18
4.1 EFFECTIVENESS AND EFFICIENCY	18
4.2 SUSTAINABILITY	19
5. CONCLUSIONS AND RECOMMENDATIONS	20
ANNEX 1: ADMINISTRATIVE MAP OF DARFUR.....	I
ANNEX 2: IMPLEMENTATION SCHEDULE	II
ANNEX 3: COST ESTIMATE (AMOUNTS IN EURO).....	IV
ANNEX 4: ORGANISATION CHART	V

LIST of ABBREVIATIONS and ACRONYMS

ADRA	Adventist Development and Relief Agency
AfDB	African Development Bank
AWF	African Water Facility
CBO	Community Based Organisations
DEM	Digital Elevation Model
DFID	Department for International Development, UK
DLC	Darfur Land Commission
FSF	Facility of Fragile States
GIS	Geographic Information System
GPN	General Procurement Notice
GoS	Government of Sudan
GSE	Gender and Social Equity
GWWD	Ground Water and Wadis Directorate
JICA	Japan International Cooperation Agency
IDP	Internally Displaced People
IsDB	Islamic Development Bank
IWRM	Integrated Water Resources Management
l/c/d	Litres per Capita per day
M&E	Monitoring and Evaluation
MDB	Multilateral Development Bank
NCB	National Competitive Bidding
NGO	Non-Governmental Organisations
PWC	Public Water Corporation
PWCT	Public Water Corporation Training Center
O&M	Operation and Maintenance
QCBS	Quality and Cost Based Selection
PIU	Project Implementation Unit
PSC	Project Steering Committee
RFP	Request for Proposal
SPN	Specific Procurement Notice
SSS	Single Source Selection
SWC	State Water Corporation
TA	Technical Assistance
TOR	Terms of Reference
UNAMID	AU/UN Hybrid Mission in Darfur
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children and Education Funds
WASH	Water, Sanitation and Hygiene

CURRENCY

Local Currency	:	Sudanese Pound (SDP)
1 Euro (€)	:	4.5 SDP (local exchange rate June 2011)

Logical Framework Analysis

HIERARCHY of OBJECTIVES	EXPECTED RESULTS	REACH BENEFICIARIES	PERFORMANCE INDICATORS	INDICATIVE TARGETS and TIMEFRAME	• RISKS ➤ MITIGATION MEASURES
<p>GOAL: Contribute to sustainable recovery and lasting peace in Darfur region of Sudan through ensuring equitable access to water resources to meet all water needs in 15 to 20 towns of the three Darfur States.</p>	<p>IMPACT:</p> <ul style="list-style-type: none"> Increased security in the Darfur as one of the key sources of conflict is addressed Recovery of water based livelihoods. People in IDP camps returning or relocating to towns 	<ul style="list-style-type: none"> The urban populations and water institutions of Darfur the three Darfur State in Sudan. (approx. 4,000,000 million people) 	<p>Indicators:</p> <ol style="list-style-type: none"> Reduction in number of reported conflicts over water resources in the towns and nearby areas. Reduction in amount of food aid delivered to population in the towns Percentage of displaced former residents of the towns returning <p>Source: Ministry of Humanitarian Assistance, UNAMID, UN country team, International NGOs Periodicity: Annual review</p>	<p>By 2018:</p> <ol style="list-style-type: none"> 90% reduction in conflicts No further food aid deliveries necessary 90% of former residents returning 	<ul style="list-style-type: none"> Lack of security preventing work of project consultants and contractors. Encourage use of local consultants and contractors with a track record of working in the area. Select towns in more secure areas for priority works. Inability of AWF to undertake site visits to the towns during supervision missions
<p>PURPOSE/OBJECTIVES: Improve water supply and sanitation services to influence peace building and conflict resolution. Specifically:</p> <ul style="list-style-type: none"> Prepare bankable investment plans for 15 to 20 towns in the three Darfur States Demonstrate integrated approaches to meeting all types of domestic and livelihood water and sanitation needs in up to 6 model towns Strengthen the capacity of the 3 SWCs and communities in the model towns to sustainably manage their investments and their water resources 	<p>OUTCOMES:</p> <ul style="list-style-type: none"> Financing of \$50 to \$100 million mobilised to implement the planned investments Increased access to water and sanitation for domestic and livelihood purposes, and improved health, for up to 750,000 people in the towns Strong functioning water institutions at State, town and community levels effectively delivering water and sanitation services to the residents of the towns and the nomadic peoples. 	<ul style="list-style-type: none"> Approx. 750,000 residents in 15 to 20 towns of North, West and South Darfur Nomadic peoples 	<p>Indicators:</p> <ol style="list-style-type: none"> Percentage of total planned investments mobilised Percentage of people in the towns with access to water and sanitation Percentage of planned staff in place at SWC <p>Source: Ministry of Information, UNAMID, UN country team Periodicity: Annual review</p>	<p>By 2015</p> <ol style="list-style-type: none"> 90% of targeted investments mobilised 90% coverage (including expected increase in access from ongoing works) 90% of staff 	<ul style="list-style-type: none"> Mobilise UNAMID capabilities to provide the necessary protection Continuing conflicts in the region reducing donor interest in funding large scale projects Investment plans will remain valid for an extended period, requiring only minor updates if implemented at a later date
<p>ACTIVITIES: Assessment and Preparation</p> <ul style="list-style-type: none"> Sensitisation of all stakeholders on project objectives Gather information and undertake rapid preliminary assessment of towns Assess capacity building needs for SWC, communities, etc. Prepare inception report, validate with all stakeholders and submit for AWF approval <p>Investment Planning for Longer Term Needs</p> <ul style="list-style-type: none"> Selection of towns for investment planning to meet long term water and sanitation needs Site assessments, hydro-geological investigations, demand studies, etc. Feasibility study of technical options with socio-economic and preliminary environment assessments Preliminary design and costing of works Prepare implementation plans taking into 	<p>OUTPUTS: Assessment and Preparation</p> <ul style="list-style-type: none"> Awareness of project objectives amongst all stakeholders All available information collected and analysed, with need for additional info. Identified Training and capacity needs identified Inception report prepared, validated and approved <p>Investment Planning</p> <ul style="list-style-type: none"> Towns selected, technical options evaluated and works identified Preliminary designs and cost estimates completed Best practices from undertaking the priority works in the model towns incorporated into the investment planning Bankable investment plans prepared and validated Donors kept fully informed of investment opportunities in the towns 	<ul style="list-style-type: none"> Beneficiary men and women Communities in towns PIUs at National and Regional level Private enterprises Policy makers, donors Sector experts, designers Government, end users 	<p>Indicators:</p> <ol style="list-style-type: none"> Approval of inception report Investment plans validated Donors roundtables held Number of new or rehabilitation works Number of SWC managerial and technical staff successfully completing training courses at PWCT Percentage of community, household or small scale farmer capacity building activities delivered Percentage of gender and social equity training delivered Number of private enterprises supported and trained Per capita water use Drought preparedness plans Number of knowledge workshops <p>Source: PIU, AWF supervision</p>	<p>By end of project unless noted otherwise</p> <ol style="list-style-type: none"> Inception report approved by month 3 Investment plans by month 19 One donor's roundtable held after completion of investment planning, and another at end of project if required. Rehabilitation of approx. 12 boreholes, 12 water yards, 24 hand pumps, 6 hafirs; 3 small dams. Construction of 30,00 km of new pipes, 700 HH latrines, 30 public latrines 30 managerial and 50 technical staff trained 90% of community capacity building delivered 	<ul style="list-style-type: none"> Availability of competent implementation partners at the national, state and locality level. Use of UNAMID, UNCT, PWC/SWC databases of suppliers of services and works to expedite selection of suitable consultants, NGOs and contractors.

<p>account the lessons learned and best practices arising from the implementation of the priority works in the model towns</p> <ul style="list-style-type: none"> • Prepare an investment programme and mobilise resources <p>Priority Works Design and Implementation</p> <ul style="list-style-type: none"> • Selection of model towns (1 or 2 in each of the three Darfur States) • Detailed site assessments, hydro-geological investigations, topographic surveys, demand studies, etc. • Selection of priority works taking into account the available budget • Detailed design and implementation of priority works (rehabilitation and new) • Pilot innovative technologies and approaches for meeting domestic / livelihood water and sanitation needs, and for managing water resources <p>Capacity Building of Institutions and Communities</p> <ul style="list-style-type: none"> • Train SWC managerial and technical staff to undertake planning, management, operation and maintenance functions for town water supply and sanitation systems • Build capacity of communities, households, farmers to meet their water and sanitation needs and sustainably manage their water resources • Ensure that gender and social equity needs are addressed and met • Strengthen town revenue collection and financial management functions • Support the private sector in the provision of water and sanitation services • Reduced demand for water as a result of conservation, reuse, appropriate tariffs, public awareness. • Prepare drought preparedness plans and sensitise residents of the towns on the actions needed for adapting to such negative climate change impacts • Undertake knowledge management activities and strengthen learning and networking structures <p>Inputs: AWF: € 3.3 m GOS: € 0.1 m</p>	<p>Priority Works</p> <ul style="list-style-type: none"> • Towns selected, priority works agreed upon and detailed engineering design completed. • Rehabilitated and newly constructed water infrastructure in the selected towns • Innovative approaches tested, documented and used to inform the investment planning <p>Capacity Building</p> <ul style="list-style-type: none"> • Strengthened capacity of SWCs for water and sanitation service delivery • Improved community capacity for management of water supply systems and sanitation facilities, and to sustainably manage all available water resources • Restoration or strengthening of water based livelihoods for residents of the towns and nomadic peoples • Gender and social equity training delivered and integrated in planning and community management activities • Increased involvement of the private sector in the delivery of water and sanitation services • Drought preparedness plans in place and all stakeholders aware of them. • Strengthened learning platforms and improved networking and knowledge management 		<p>missions, PCR, PWC, SWC Periodicity: Semi-annual, project end</p>	<ul style="list-style-type: none"> 7. 90% of planned private sector support delivered 8. 90% of GSE training 9. Per capita water use as planned 10. Drought preparedness plans prepared and communities sensitised 11. At least 3 workshops held 	
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EXECUTIVE SUMMARY

Prolonged conflict, massive population growth, urbanisation and climate change have had a cumulative and destructive impact on the water infrastructure in Darfur in recent years. Disputes over natural resources such as water, particularly between pastoralist, nomadic and settled populations, have become inextricably linked to a wider regional conflict. Environmental factors related to climate change, reduced rainfall and consequent decreased yields of ground water sources have reduced the supply and coverage of water throughout the region, thus exacerbating the problem. A fragile ecosystem that, historically, has balanced the needs of diverse livelihoods is now severely destabilised – with potentially irreversible consequences.

A main part of the cause behind the inequitable distribution of water in the Darfur regions is linked to weak institutions and inadequate resources to construct, manage, operate and maintain water infrastructure. The towns in the Darfur, in particular, are suffering from a lack of water and sanitation services delivery. Addressing these needs requires more detailed investment planning to leverage the substantial amounts of funding to rehabilitate and construct new infrastructure, and significant capacity building to ensure sustainable use of water resources.

The objective of the project will be on meeting immediate and longer term water and sanitation needs in 15 to 20 towns and surrounding areas in close proximity, with a focus on the district capitals (Mahalias), covering about 750,000 people. Water will be looked at in a holistic and integrated manner, by examining all its uses and impacts in the towns (domestic, livestock, small-scale farming, institutional, enterprises). The project will be designed to meet the water and sanitation needs of all users or beneficiaries, including the inhabitants of the towns, the pastoralists and the nomadic peoples.

The project has been designed to achieve optimum impact within its relatively limited resources in comparison to overall needs. It will:

- Act as a catalyst to leverage the \$50 to \$100 million in financing required to meet longer term needs in 15 to 20 towns, through the preparation of bankable investment plans for funding.
- Meet priority water and sanitation needs for domestic and livelihood purposes in a carefully selected group of 3 to 6 model towns, and through the piloting of innovative approaches to the implementation of the priority works, demonstrate how to meet all types of water needs in an integrated manner.
- Build the capacity of the State Water Corporations and communities to sustainably manage their water resources and effectively deliver water and sanitation services, and to implement the downstream works, through a comprehensive capacity building programme.

As well, the project will have a significant impact on the ongoing conflict resolution and early recovery efforts, and thereby respond to the overall objective of using water as an instrument for peace building, by: reducing conflicts over scarce water resources through the provision of water for all segments of the population; promoting return or resettlement of internally displaced persons to the towns; and supporting recovery of water based livelihoods.

Project activities will be undertaken in three corresponding components: (i) investment planning to meet long term needs; (ii) implementation of the priority works outlined in the investment plans for the model towns, to the extent possible under the available budget; and (iii) capacity building of institutions and communities to ensure sustainability. Implementation of the project will be conducted over a period of 38 months after approval. An inception phase is planned which will enable the Recipient to refine the overall approach based on a comprehensive assessment and participatory approach to project design.

There are various risks associated with the implementation of the project. These are mainly centred on security and access concerns since the project is in a conflict zone. These can be mitigated by encouraging the use of local consultants, NGOs and contractors who are normally able to pass freely throughout the Darfur, and mobilising UNAMID capabilities to provide necessary protection as required.

The estimated total cost of the project is Euro 3,418,172. The AWF will provide grant financing of Euro 3,300,000 covering 96.5% of the project costs. The in-kind contributions of the Government of Sudan are estimated as Euro 118,171 representing 3.5% of project cost.

The Government of Sudan will be the Grant Recipient and the Public Water Corporation the Executing Agency. The project will be implemented by a Project Implementation Unit (PIU) hosted at the PWC. At the State level, a smaller PIU will be established at each of the State Water Corporations for supervision and implementation of the project in each of the three States. A Steering Committee will be formed comprising key stakeholders in the Government and UNAMID.

It is recommended that a grant not exceeding **Euro 3,300,000 million** from the AWF resources be extended to the Government of Sudan for the implementation of the project described in this appraisal report.

1. BACKGROUND

1.1 Project Rational and Origin

1.1.1 Prolonged conflict, massive population growth, urbanisation and climate change have had a cumulative and destructive impact on the water infrastructure in Darfur in recent years. Disputes over natural resources, particularly between pastoralist, nomadic and settled populations, have become inextricably linked to a wider regional conflict. A fragile ecosystem that, historically, has balanced the needs of diverse livelihoods is now severely destabilised – with potentially irreversible consequences. This led to an exodus of rural populations from their villages, quickly over-populating urban areas due to the creation a large numbers of Internally Displaced Persons (IDPs) living camps, located in the peripheries of major urban and rural centres such as El Fasher, El Geneina, Nyala, Kaas, Kutum, Kabkabiya and Mornei. The demographic changes placed additional pressure on the limited water resources as well as degraded livelihoods at new camp locations and peri-urban areas.

1.1.2 Conflict over limited water resources has always been fairly common in the Darfur region. UNEP's Post conflict Environmental Assessment lists 27 conflicts in Darfur since 1975 in which environment, livelihoods and water have been a component. In many cases, competition over water is a main conflict driver between nomadic communities and sedentary pastoralist farmers, who compete over seasonal rivers in the West, South and Northern States of Darfur. Severe droughts and desertification have disrupted migratory routes and increased stress on the increasingly scarce water resources. In the past, a Native Administration mechanism was used to mediate land and water related conflicts between the settled pastoralist farmers and nomads. However, a 1970 Act asserted a formal land registration system that restrained the mobility of groups, regardless of climatic variability such as changing rates of rainfall. The abolishment of this traditional mediating system, and the increasing water shortages as a result of change in climatic conditions in Darfur, has added to the conflict which has engulfed the three states of the region since February 2003.

1.1.3 Environmental factors related to climate change, reduced rainfall and consequent decrease of ground water sources yields have reduced the supply and coverage of water throughout the region. Increased climate variability has also played a role in the scarcity of safe water. UNAMID and UNICEF data and research has shown that annual rainfall in Darfur has declined in recent years. Groundwater monitoring data suggests that water table levels and borehole yields have also significantly dropped. In 2009, for example, low rates of rainfall and the continuous decline in groundwater levels have led to water shortages in El Fasher, Nyala and peri-urban IDP camps.

1.1.4 Part of the cause behind the inequitable distribution of water in Darfur is linked to weak institutions and resources to manage operate and maintain water infrastructure. The paucity of trained manpower within water management institutions, created by lack of mechanisms to attract and retain qualified personnel for the operation and maintenance of urban and rural water infrastructure, has contributed to deterioration and malfunctioning of existing systems.

1.1.5 The project proposal arose out of a high-level UNAMID mission to the AfDB in June 2010 to discuss a request sent to the Bank for financial support in an international search for assistance to resolve the water crisis in Darfur (Sudan). The UNAMID delegation held technical consultations meetings with AWF and other departments regarding the acute water problems in Darfur which is fuelling instability and conflicts in the region, had meetings with the ORVP and paid a courtesy visit to the President of the Bank.

1.1.6 Following this mission, two proposals were submitted to the AWF and Fragile States Facility (FSF) in February 2011. The request to the AWF addressed emergency rehabilitation of water

infrastructure as well as some project preparation activities. The request to the FSF concerned Technical Assistance for the Capacity Building Program to strengthen the institutional capacity of the three State Water corporations in Darfur to implement the expected huge investment in water sector. All levels of the Government of Sudan have reviewed these two proposals, as well as some key donors and NGOs. Following assessment of the proposals at an AWF screening meeting, it was decided to combine them into one project for funding by the Facility. The Bank subsequently sent an appraisal mission to the Darfur (Sudan) in April 2011, and the findings were endorsed by the Government in the aide memoire of the mission. In addition, the Bank participated in the 28 June 2011 International Darfur Water Conference and briefed donors and Government on the project, and alerted them to the bankable investment plans that will result from this project which will require funding.

1.2 Sector Status and Priorities

1.2.1 Sudan completed its '*Water Supply and Environmental Sanitation Policy*' in September 2010, which sets out the long term vision of the water and sanitation sector of the Darfur region as a whole, and the modalities for implementation. Review of the water act and establishment of efficient system of water tariff and collection are considered among the top priorities for any water sector reforms.

1.2.2 WASH Strategic Plans for the 15 States in Sudan, covering a period of five years from 2011-2016, were completed in May 2011. Included are three plans for each of the Darfur States. The plans focus mainly on rural water supply and sanitation, and only provide an overview or estimate of needs in the towns. The plans give appropriate attention to strengthening the institutions responsible for water supply.

1.2.3 An IWRM Strategy from 2008 is available, which sets out the broad principles for water resources management in the Sudan. There are ongoing proposals and efforts to elaborate on this strategy to enable a better understanding and management of water resources in the Darfur on a catchment basis.

1.2.4 Various assessments conducted by UNAMID, UNICEF, UNEP, the World Bank, the AfDB, among other organisations, have suggested that the provision of safe water is an important instrument to resolve conflict in Darfur in general. It is also recognised as a priority intervention in the effort towards early recovery and sustainable peace in Darfur.

1.2.5 A high level International Darfur Water Conference to address water issues and mobilise funds for the sector was held in Khartoum in June 2011. Multilateral donors like the AfDB, Islamic Development Bank, Arab Funds and many bilateral donors as well as most UN agencies participated. A comprehensive appeal document was presented to all the participants leading to pledging of resources for the water project in Darfur. The intervention of the AWF was included in the commitments.

1.2.6 Donor involvement in Darfur is limited at the present time, with the GoS funding most of the ongoing work. The UN organisations such as UNICEF, UNHCR, UNEP, UNDP, UNAMID, are all active in meeting needs, particularly in the refugee camps, but this is far short of the level of investment needed in the sector. There is some involvement of bilateral donors such as JICA and DFID, as well as the Arab Fund for Economic and Social Development, although most of these projects are limited in scope. As well there are a number of local and international NGOs which are effectively providing support to the people in the worst affected areas to enable them to meet their urgent water needs, but again at a small scale. Most of the larger multi-lateral donors such as the AfDB and World Bank are not significantly involved due to ongoing sanctions imposed on Sudan, as well as the uncertain security situation.

1.2.7 Investment planning is now well covered in the rural areas with the newly approved Strategic Plans, which should lead to necessary investments in rural water supply. As well, the larger urban centres are undergoing significant rehabilitation works at the present time, funded mainly by the GoS, which will meet their short and medium term needs. It is the smaller towns which are being left out, and which are in great need of priority rehabilitation as well as significant investments to meet longer term needs. As a consequence the AWF project has been designed to fill this gap through priority works and preparation of bankable investment plans.

1.3 Problem Definition

1.3.1 It is estimated that as of 2010, the population of the Darfur region is roughly 7.5 million, with 25% of the population living in North Darfur State, 27% in West Darfur State and 48% in South Darfur State. It is estimated that about 1 million people, or 13% of the population, live in the 30 or more towns, which range in size from about 10,000 to over 100,000 people.

1.3.2 Population growth and urban migration in the towns of Darfur is posing a threat on water supply systems. Water demand has increased substantially with the influx of displaced people from the rural areas. In general, water infrastructure in the towns is in a state of disrepair and in urgent need rehabilitation to increase supply water for domestic and livelihoods. A large proportion of water infrastructure has been either vandalized or degraded due to the lack of proper maintenance and years of neglect. In some areas, the water production of boreholes has declined or dried up due to reduced rainfall in recent years and lowered water tables.

1.3.3 Most of the towns have no distribution network, and where they do exist, leakages in the networks as a result of aged pipes and fittings decrease the amounts of water supplied to the populations. Lack of water measuring devices/water metres to facilitate control of high rate of unaccountable for water and support revenue collection, has been attributed to reduced capacity of the water institutions to carry out effective operations of water systems and expansion of the networks to increase coverage.

1.3.4 The coverage in the towns is not well known, and is perceived to vary widely from town to town. In some towns the reported supply of safe water is less than 10 l/c/d, while others receive 20 or more l/c/d. In comparison, the Water Policy notes 25 l/c/d for rural areas and 80 l/c/d for urban areas. Sanitation facilities are almost none existent, and water for agriculture and multipurpose uses is also well short of demand.

1.3.5 Livelihoods of many in the towns are mainly based on agro-pastoralist and nomadic lifestyles that depend on water from hafirs, earth dams, water yards and rainfall. However, most surface water retaining structures have silted up thus reducing their storage capacities. As a result they are seldom a reliable year round means of water supply.

1.3.6 The towns rely on groundwater as the main dependable source for water. However, knowledge of the groundwater resource is varied and incomplete. Although a significant amount of data is available for many of the towns, it is scattered among many institutions, and has never been comprehensively compiled and analysed. Various efforts are either ongoing or planned to improve water knowledge on a regional basis, including sustainable yields from the aquifers, but they are not generally at the level of detail needed for engineering design in the towns. Although some groundwater monitoring programs are underway, particularly in the vicinity of the IDP camps outlying many of the towns, there is a need for more comprehensive hydro-geological investigations.

1.3.7 Water supply and sanitation in the Darfur is managed by four institutions. The Public Water Corporation (PWC) in Khartoum is responsible for the entire country water policy and development

and for the three specific State Water Corporations (SWC) of South, North and West Darfur. The capacity of the water management institutions at the state level is very weak in terms of availability of qualified staffing, equipment, management and operational systems. As well, in the towns, there are also major challenges and deficiencies in the institutional capacity. For example the current conflict drove many qualified artisans, managers of water infrastructures, away from the rural areas to safe havens in IDP camps, leaving behind systems without the requisite manpower to man them.

1.4 Objectives and Scope of the Project

1.4.1 The objective of the project is to meet immediate and longer term water and sanitation needs in 15 to 20 towns and surrounding areas in close proximity, with a focus on the district capitals (Mahalias), covering about 750,000 people (the State capitals are not part of the project). Water will be looked at in a holistic and integrated manner, by examining all its uses and impacts in the towns. The project will be designed to meet the water and sanitation needs of all users or beneficiaries, including the inhabitants of the towns, the pastoralists and the nomadic peoples. More specifically, the project objectives are to:

- Prepare bankable investment plans for 15 to 20 towns in the three Darfur States
- Demonstrate integrated approaches to meeting all types of domestic and livelihood water and sanitation needs in up to 6 model towns
- Strengthen the capacity of the SWC and communities in the model towns to sustainably manage their investments and their water resources.

1.4.2 The project will have a significant impact on the ongoing conflict resolution and early recovery efforts, and thereby respond to the overall goal of water for peace building, by:

- Reducing conflicts over scarce water resources through the provision of water for all segments of the population.
- Promoting return or resettlement of IDPs to the towns.
- Supporting recovery of water based livelihoods.

1.5 Beneficiaries and Stakeholders

1.5.1 The populations in towns affected by the water-related conflicts of Darfur, which include internally displaced people living in the camps, and nomads accessing the water resources on a seasonal basis, are the main beneficiaries and target populations of this project. The three SWCs in Darfur State will benefit from the Capacity Building component. Other government departments involved in water sector will also indirectly benefit, including the Groundwater and Wadis Directorate (GWWD); the Public Water Authority; the local government in each of the Mahalias or districts; and GoS Ministries of Irrigation and Water Resources, Environment, Forestry and Urban Development. Local implementing partners involved in water resources, including CBOs and local NGOs, will also receive benefits from the project. The international donor community will realise benefits as a result of the improved absorption and delivery capacity of the Darfur State Water Corporations, as this will impact the timely and sustainable implementation of the downstream investments proposed under the project investment plans.

1.5.2 Development of priority areas of intervention for this project was undertaken in collaboration and consultation with key stakeholders: the GoS ministries and agencies as well as the local Mahalias. The main international stakeholders of this project were also consulted, including the UNCT, UNAMID and friends of UNAMID and various donors.

1.6 Justification for AWF Intervention

1.6.1 The project is well aligned with the new strategic framework of the AWF. The project falls under the principal strategic priority to *Prepare Bankable Projects for Investments*, through its focus on the preparation of bankable investment plans for towns in the Darfur region; and the priority of *Small Strategic Investments* on water and sanitation infrastructure in fragile states, through the priority works which will be implemented under the project. It also relates to the strategic priority to *Enhance Water Governance*, through its focus on capacity building, and touches on the priority to *Promote Water Knowledge* through its learning activities which will be used to inform the updating of the investment planning at the end of the project, and the implementation of planned downstream works.

2. THE PROJECT

2.1 Goal and Impacts

2.1.1 The goal of this project is to contribute to sustainable recovery and lasting peace in Darfur region of Sudan through ensuring equitable access to water resources to meet all water needs in 15 to 20 towns of the three Darfur States. The impacts are:

- Increased security in the Darfur as one of the key sources of conflict is addressed.
- Recovery of water based livelihoods.
- People in IDP camps returning or relocating to towns.

2.2 Outcomes

- Financing of \$50 to \$100 million mobilised to implement the planned downstream investments in the 15 to 20 towns
- Increased access to water and sanitation for domestic and livelihood purposes, and improved health, for up to 750,000 people in the towns
- Strong functioning water institutions at State, town and community levels effectively delivering water and sanitation services to the residents of the towns and the nomadic peoples.

2.3 Outputs

2.3.1 Component 1: Investment planning to meet long term needs in 15 to 20 towns

- Towns selected, technical options evaluated and works identified
- Preliminary designs and cost estimates completed
- Best practices from undertaking the priority works in the model towns incorporated into the investment planning for the towns
- Bankable investment plans prepared and validated
- Donors kept fully informed of investment opportunities in the towns.

2.3.2 Component 2: Priority Works in 3 to 6 towns

- Towns selected, priority works agreed upon and detailed engineering design completed.
- Rehabilitated and newly constructed water infrastructure completed in the towns
- Innovative approaches tested, documented and used to inform the investment planning.

2.3.3 Component 3: Capacity Building of SWC and communities

- Strengthened capacity of SWCs for water and sanitation service delivery.

- Improved community capacity for management of town water supply systems and sanitation facilities, and to sustainably manage all available water resources.
- Restoration or strengthening of water based livelihoods for residents of the towns and nomadic peoples.
- Gender and social equity training delivered and integrated in planning and community management activities.
- Increased involvement of the private sector in the delivery of water and sanitation services.
- Improved ability of the towns to meet O&M costs from internally generated revenue.
- Drought preparedness plans in place and all stakeholders aware of them.
- Strengthened learning networks and better knowledge management.

2.4 Activities

Component 1: Investment planning to meet longer term needs

2.4.1 Securing required investments over the medium and longer term will be one of the key outcomes of the project. This will be the focus of the investment planning component, which will prepare bankable investment plans to leverage the €50 to €100 million required for rehabilitation and expansion of the town water and sanitation systems.

2.4.2 During the inception phase the project team will work closely with SWC and other stakeholders to prioritise and select the towns for which investment planning will be done, using agreed and transparent criteria based principally on needs. It is anticipated that 15 to 20 towns will be able to be covered within the project budget for this activity.

2.4.3 The water needs which will be addressed in the investment planning include access to safe water for drinking purpose within the town through the provision of a piped water distribution system with groundwater supplied by mechanised boreholes and stored in high level tanks. The project will also address sanitation and hygiene issues, starting with provision of infrastructure such as household latrines and public toilets, and including hygiene promotion and education. Water harvesting for multiple uses will also be covered – water for livestock, small scale farming, and micro-enterprises which rely on water - based on a livelihoods approach. The project will take into consideration water resource management and environmental protection aspects such as water conservation and reuse, surface water drainage within the towns, river erosion, and groundwater recharge and catchment protection. Drought preparedness plans and drought mitigation works such as sand or check dams will be included. Innovative technologies will be demonstrated where viable, such as solar powered water pumping and ecological sanitation.

2.4.4 The investment planning will include thorough site assessments including groundwater investigations where necessary, preparation of engineering designs and cost estimates, a socio-economic and environmental impact analysis, and an implementation plan. Different scenarios to address the increasing climate variability being experienced in the Darfur region will be addressed, which will include options to make best use of scarce water resources during periods of drought.

2.4.5 To support mobilisation of resources to fund the bankable investment plans, a donors' round-table will be held after the completion of the investment planning component to secure pledges. Donors will also be invited at the inception workshop to alert them to the upcoming funding opportunities. Potential donors include the AfDB, as well as many bi-lateral donors who rely on a pipeline of well-prepared projects.

2.4.6 The activities under this component represent 28% of the AWF financing and will include the following:

2.4.7 *Inception phase*

- Identify and meet with all key actors in the Darfur Water Sector to ascertain their current activities and plans, and to sensitise them on project objectives.
- Gather all available information and maps from various sources such as the PWC, GWWD, Darfur Land Commission, UNEP, UNAMID, etc. Include maps/data of towns and water systems, groundwater and aquifers, natural resources and land use, conflict and early recovery areas, migration routes, population density, IDP camps, etc.
- Undertake rapid preliminary assessment of towns as required to fill in critical gaps in the available information (condition of water facilities, such as status of electro-mechanical equipment).
- Establish prioritisation criteria based upon need, security and access, water conflicts, etc; and select 15 to 20 towns for investment planning (Component 1). Similarly, select one or two model towns in each of the three Darfur States for priority works (Component 2).
- Assess capacity building needs for SWC, communities, etc. (Component 3).
- Prepare inception report. The key members of the project team will jointly undertake this activity (consulting firm, PWC, SWC, and GWWD), with the draft report to be submitted to a workshop for validation by all stakeholders prior to submission for review by the Project Steering Committee and AWF. The work programme and budget as outlined in the inception report may be subject to revision if considered necessary by the project team or Steering Committee, or upon the request of the AWF.

2.4.8 *Site investigations*

- Identify all surface and groundwater sources and undertake hydrological and hydro-geological surveys, and water quality monitoring. Install surface and groundwater monitoring equipment, and design and implement a groundwater monitoring programme with options for longer term post-project monitoring. Identify need for additional hydro-geological investigations and include these needs in the investment plans.
- Prepare topographic data in the form of Digital Elevation Models (DEM) using remote sensing, participating with on-going efforts of Darfur Land Commission and others
- Verify the existing water distribution network (if any), and the need for rehabilitation or replacement of pipes. Establish functionality of electro-mechanical equipment and need for rehabilitation
- Investigate surface water storage (hafirs and dams) and assess rehabilitation needs and capacity to meet year round needs

2.4.9 *Assessments and Analysis*

- Assess population estimates and future growth prospects, return of IDPs, integration of IDP camps into the towns.
- Estimate current and long term water demands for households, institutions, enterprises, livestock, and small scale farming. Undertake willingness and ability to pay studies as appropriate. Take into account the need to appropriately match water sources with the intended use, such as use of hafirs for irrigation/livestock rather than as a source of potable drinking water.
- Evaluate demand side measures for reducing the need for water, such as conservation, reuse, appropriate tariffs, and public awareness.
- Determine sanitation needs at household and institutional levels
- Assess solid waste and storm-water drainage needs.
- Assess water resource management needs (i.e. for environmental protection, groundwater recharge, river/stream erosion, etc.).

- Include all relevant information in the GIS database of each SWC and the PWC, and share information with other organisations such as the Darfur Land Commission for inclusion in their natural resources and land use databases.
- Assess impact of climate change on availability of water resources.
- Review existing policies and strategies with respect to relevance and adequacy for town water supply, sanitation and water resources management needs. This may include service levels, tariff structures and cost recovery, institutional roles and responsibilities, catchment based IWRM approaches to water resources management, adaptation to climate change impacts, etc.

2.4.10 *Feasibility studies*

- Technical analysis of the suitability of various options to meet each of the identified needs. Include the piloting of innovative technologies and approaches for meeting domestic / livelihood water and sanitation needs, and for managing water resources and the impacts of drought.
- Analysis of various options to strengthen governance, including capacity building programmes for the SWC, communities, private sector; and the management of town water and sanitation systems.
- Prepare alternative courses of action or scenarios for each town along with approximate estimates of costs.
- Review the scenarios with key stakeholders and jointly select alternatives that best meet the identified needs.

2.4.11 *Planning and design*

- Prepare outline or preliminary design of selected technological options, along with Bills of Quantities and cost estimates.
- Undertake detailed impact analyses on the investment plans, including: financial and economic evaluation; institutional and capacity building analysis; social and gender analysis; environmental impact study; and sustainability and risks assessment. Revise plans as required.
- Prepare drought preparedness plans including drought mitigation works.
- Prepare implementation plan addressing the institutional arrangements for management and supervision, procurement and contracting arrangements as well as financial management and reporting.
- Design a monitoring and evaluation framework for the downstream works, taking into account current methodologies for M&E used by the SWCs and PWC.
- Validate the bankable investment plans at a stakeholder's workshop, and incorporate inputs into the finalisation of the plans. Submit to AWF for review and comment.
- At the end of the project revise the technical designs, cost estimates and implementation plans as required, taking into account the lessons learned and best practices arising from the implementation of the priority works in the model towns.

2.4.12 *Resource mobilisation*

- Prepare an investment programme for submission to prospective funding agencies.
- Organise a donor's roundtable at the completion of the investment planning component of the project, to secure pledges from donors for the planned works. If necessary, hold another donor's roundtable upon completion of the project to mobilise additional funds.

Component 2: Priority Works design and implementation to meet immediate water and sanitation needs

2.4.13 The largest component of the project, representing 49% of the total financing from AWF, will focus on rehabilitation and expansion of infrastructure to meet immediate water and sanitation needs. As part of the inception phase, one or two model towns will be selected in each State where an integrated approach towards meeting all water needs will be demonstrated. In essence, the project will implement the works outlined in the investment plans for the selected towns, to the extent possible under the available budget. The project team will work closely with SWC and other stakeholders to prioritise the works which will be implemented.

2.4.14 In each model town, the focus will be on rehabilitation of existing water infrastructure of all types, such as water yards, hand pumps, hafirs and small dams, given the cost effectiveness of this approach. Where infrastructure is clearly inadequate to meet immediate needs, or where certain types of works are required to better demonstrate integrated approaches, construction of new infrastructure may be undertaken. The limits in project funding may preclude some of the more costly activities from being included, such as the rehabilitation of dams. An indication of possible works is shown in the cost estimate of Annex 3. In more detail, the activities to be done under this component are as follows:

2.4.15 *Investigations and Assessment*

Undertake additional site investigations as required to enable preparation of the detailed designs, building on those done as part of the investment planning, which may include:

- Detailed site assessments, verifying status of all water infrastructure
- Hydro-geological investigations, including siting of new boreholes if necessary.
- Leakage detection for existing network (if any), and re-assessment of options for rehabilitation or replacement of pipes
- Topographic surveys or development of high resolution DEMs as appropriate.

2.4.16 *Design and tender*

- Undertake feasibility studies of technical options as part of the investment planning process (see 2.4.10), including selection among alternative courses of action.
- Select the priority works in each model town which can be implemented under the available budget. This will be done as part of the preliminary design process of the investment planning component (see 2.4.11).
- Validate the selection of priority works with key stakeholders (as part of the validation of the investment plans), and submit to the AWF for review and comment.
- Prepare detailed designs and cost estimates for the selected priority works in the towns. The designs should take into consideration and be part of the detailed impact analysis which will be done as part of the investment planning (see 2.4.11).
- Prepare tender documents and assistance to the PWC and SWCs for tendering, negotiation and award of contracts.

2.4.17 *Implement works*

The works must be implemented and monitored in accordance with the Implementation Plan and M&E framework, which will be prepared as part of the Investment Planning (see 2.4.11).

- Supervise the implementation of the works by the contractors.
- Link the implementation to the community capacity building in each selected town.

Component 3: Capacity Building of institutions and communities to ensure sustainability

2.4.18 The project will work to strengthen the capacity of local water sector expertise in the Darfur area through a comprehensive capacity building component which will focus on the ability of SWC, communities and other stakeholders to support delivery of water and sanitation services to the towns.

2.4.19 Institutional strengthening and training needs at all levels will be part of a capacity building and human resources development assessment to be prepared during the inception phase. Based on this assessment, a training and capacity building programme will be developed to support the implementation of the physical interventions and ensure sustainability. The assessment will take into account and ensure coordination with other on-going and planned institutional strengthening activities, such as that being done or planned under JICA assistance.

2.4.20 The activities under this component of institution building represent 17% of the AWF financing and will include the following:

SWC training and capacity building

2.4.21 Under this component classroom oriented training will be provided to approximately 50 technical and 30 managerial staff working for the three State Water Cooperation's in Darfur who are working at the state, district/mahalia and community levels to undertake planning, management, operation and maintenance functions for town water supply and sanitation systems.

2.4.22 The training will take place at the Public Water Corporation Training Centre (PWCT) in Khartoum, which is the only national institution capable of undertaking the technical training envisaged. The centre is responsible for preparation and implementation of training courses related to technical and managerial problems facing the water sector in Sudan, and has successfully carried out training of SWC staff from all over the country, including the Darfur. The PWCT was established under a grant from the Japan International Cooperation Agency (JICA), and includes six Japanese experts and all the equipment needed to undertake all the necessary technical training in the water sector. While most of the training will be held in Sudan, options to train some of the staff in nearby countries will be identified and assessed. The proposed training courses will include the following topics; (i) Operations & maintenance of water treatment plants; (ii) Water supply facilities; (iii) Well management; (iv) Water analysis; (v) Pipe network management; (vi) Integrated water resources management; (vii) Ground water modelling; (viii) Financial management and accounting; (ix) Billing and revenue collection; (x) Organisational management; and (xi) Data management/GIS.

2.4.23 The formal training will be complimented by on-the-job training to apply the skills learned in the classroom in practice. This will be done by ensure that staff of the three state Darfur Water corporations work closely with the Consultant and NGOs to strengthen their capacity in investment planning, engineering design, financial management, revenue collection, water resources management, supervision of works, community management, etc.

2.4.24 The project will also address improvements in physical capacity within SWC offices through provision of equipment, which may include provision of hydrological and groundwater monitoring equipment, enhancing the laboratories tasked with ensuring water quality, and strengthening the data management and GIS capabilities at state level. Three vehicles will be provided, one in each State PIU, for use by the SWC and consultant to implement and supervise the project.

Community level training and capacity building

2.4.25 Community level trainings will be undertaken to ensure their full involvement in operation and maintenance, as well as hygiene promotion. CBO and private sector trainings will also be included to ensure that local service providers are available to provide needed services, such as CBO who can

strengthen community management and provide hygiene education, village masons who can construct the latrines, and local hand pump mechanics to undertake repairs.

2.4.26 The project will engage NGOs with local experience to implement most of the community level capacity building. Through the involvement of NGOs with the expertise and skills needed, the project will be able to demonstrate and train others on how water and sanitation infrastructure can be used to meet all types of water needs, thereby increasing capacity. The activities that the NGOs will carry out may include the following:

- Organise community awareness workshops on project objectives and activities.
- Establish water committees and train in undertaking their responsibilities (in line with current policy).
- Build capacity of community to manage their water systems and to undertake simple O&M actions.
- Strengthen town financial management and revenue collection functions to ensure sustainability, such as by introducing innovative approaches such as user fee management concepts.
- Undertake hygiene awareness and promotion in accordance with national policy and best practices. Strengthen demand for improved sanitation facilities using sanitation marketing approaches.
- Provide household training on safe drinking water management practices, and water for multipurpose uses.
- Provide community level training on water resource and environmental management. Sensitise and increase awareness on water conservation and reuse options to reduce demand for water.
- Sensitise residents of the towns on the drought preparedness plans and corresponding actions needed for adapting to negative climate change impacts.
- Strengthen grass roots Community Based Organisations (CBOs) who are involved in supporting communities in meeting their water and sanitation needs.
- Provide support to local private enterprises/individuals such as small scale water and sanitation service providers, latrine masons, and micro-enterprises to deliver services. For those enterprises that use significant volumes of water (i.e. brick-making), provide training on the appropriate and efficient use of available water resources.
- Strengthen skills in making use of available water resources for small-scale farming and micro-irrigation at household, community (gardens) and peasant farmer levels.
- Appropriate use of water to meet needs of livestock (owned by community members or nomadic herdsmen).
- Appropriate actions to ensure that gender and social equity needs are met, including focus on training of women in household water management, hygiene, micro-enterprises, household gardening, etc.

Knowledge management

2.4.27 Knowledge activities will be undertaken to generate lessons learned from the piloting and demonstration of innovative approaches of meeting all water needs and managing water resources. The lessons learned will thereby serve to inform the preparation of the investment plans, as well as serve to build the capacity of the Government at all levels in preparing and implementing these types of projects. Knowledge will be widely disseminated within the Darfur, and at national levels and Africa wide, and will thereby serve to inform the design and implementation of other projects. Study tours and workshops will be organised to enhance learning opportunities. It is anticipated that a learning alliance will be formed to maximise knowledge and advocacy impacts, comprising a wide range of Government and development partners.

Workshops and Study tours

2.4.28 Included under the capacity building component are various types of workshops in support of meeting project objectives, as well as study tours. These may include:

- Launching workshop at national level for PIU, PWC and SWC
- National workshop for validation of inception report
- Regional workshops to validate the investment plans
- Closing workshop and donors roundtable
- Study tours for the senior management to benefit from the experience of regional member countries like Ethiopia, Egypt and Kenya.

Component 4: Project Coordination, Management, Supervision and Reporting

2.4.29 The activities under this component represent 6% of the AWF financing for the project, and will include the following:

- Establish the Project Steering Committee (PSC) and Project Implementation Unit (PIU), and nomination of a Project Coordinator.
- Coordinate project activities at National and State levels.
- Organise and handle logistics, travel arrangements, project allowances, communications.
- Organise workshops and Steering Committee meetings.
- Support launching and supervision missions for the project.
- Manage the procurement process, including preparation of tender documents.
- Prepare and submit progress and audit reports to AWF.

2.5 Risks and Assumptions

2.5.1 There are various risks associated with the implementation of project. These are mainly centred on security and access concerns. Firstly, the security risk could prevent project consultants and contractors from working freely in all areas. This can be mitigated by encouraging use of local consultants, NGOs and contractors who are normally able to pass freely throughout the Darfur, and notifying local government and rebel groups about project activities. As well, should security concerns persist when the priority works are to be implemented, the project can select towns in more secure areas for the priority works.

2.5.2 A related risk is the inability of the AWF or AfDB to undertake site visits to the towns during supervision missions. This can be mitigated by mobilising UNAMID capabilities to provide the necessary protection. Alternately, the AWF could recruit a local consult to undertake site supervision.

2.5.3 A longer term risk is that continuing conflicts in the region may reduce donors' interest in funding large scale projects due to perceived and actual implementation difficulties, as noted above. In response, the investment plans will remain valid for an extended period, requiring only minor updates if implemented at a later date when peace and stability is restored. Given the expected heavy reliance on local partners in all phases of the project, the availability of competent implementation partners who are interested and capable of working in the towns in the Darfur may be a risk. Mitigation will involve use of UNAMID, UNCT, PWC/SWC databases of suppliers of services and works to expedite selection of suitable consultants, NGOs and contractors. The appraisal mission has identified and met with a number of competent local partners with experience in the Darfur, and the assessment is that adequate capacity is available within the country to undertake most project activities. Where consulting capabilities are limited with respect to the more innovative technologies or approaches, such as for drought mitigation, catchment based IWRM, or use of PV powered water pumping or EcoSan technologies, it is expected that local consulting firms will source or partner with regional consultants with the required skills.

2.6 Costs and Financing

2.6.1 The total cost of the project is estimated at Euro 3.4 million. The cost is based on the quotations from recent bid prices implemented by the SWCs and includes allowances for contingencies; quotations from recent training programs conducted by the PWCT; recent cost of TAs and study tours. The AWF will provide grant financing of Euro 3.3 million. The in-kind contributions of the Government of Sudan in terms of PIU salaries, other staff time, office space and utilities is estimated as Euro 118,171 representing 3.5% of project cost. The main components and breakdown of costs are shown in Tables 2.1 and 2.2.

Table 2.1: Project Cost Estimates by Component and Foreign/Local Amounts (Euros)

Component	Total Cost	AWF		GoS Local Costs
		Foreign Costs	Local Costs	
A: Investment Planning	856,234	268,000	588,234	0
B: Priority works	1,516,838	0	1,516,838	0
C: Capacity building	532,143	156,429	375,714	0
D: Project management	202,214	0	94,786	107,429
Total Base Cost	3,107,429	424,429	2,575,572	107,429
Contingency 10%	310,743	42,443	257,557	10,743
Total Project Cost	3,418,172	466,871	2,833,129	118,171
Percentage		13.7%	82.9%	3.5%
Total Foreign/Local		466,871	2,951,300	
Percentage Foreign/Local		13.7%	86.3%	

Table 2.2: Project Cost by Category of Expenditure and Sources of Financing (Euros)

Category of Expenditure	Total Cost	AWF		GoS Local Costs
		Foreign Costs	Local Costs	
Services	1,253,377	289,429	963,948	
Works	1,516,838		1,516,838	
Goods	135,000	135,000		
Project Management	202,214		94,786	107,429
Total Base Cost	3,107,429	424,429	2,575,572	107,429
Contingency 10%	310,743	42,443	257,557	10,743
Total Project Cost	3,418,172	466,871	2,833,129	118,171
Total Contributions		3,300,000		118,171
Percentage Contribution		96.5%		3.5%

3. PROJECT IMPLEMENTATION

3.1 Recipient and Executing Agency

3.1.1 The Government of Sudan (GoS) is the grant recipient. The Public Water Corporation (PWC) is the executing agency for the project. The PWC has solid experience in the implementation of similar smaller projects for the 15 State Water Corporations (SWC) in the country. For example, the PWC has recently implemented various projects for the construction/rehabilitation of boreholes, handpumps, hafirs and dams in the Darfur, with funding from UNICEF, Islamic Development Bank, ADRA and other agencies. The SWC has branches in the capital of Sector North (El Fasher), Sector West (El Geniena) and Sector South (Nyala). As of 2010 the manpower level of key employees of

SWC, consisting of civil, and electrical engineers, technicians, chemists and other support staff, were 121, 266 and 190 for West, North and South Darfur respectively.

3.2 Implementation Arrangements

3.2.1 Coordination and support will be provided at national level by the PWC and GWWD. The SWC at state, district (Mahalia) and town/community level will take the lead in all aspects of implementation. This will be supplemented by the GWWD who will provide expertise in water resources management.

3.2.2 The project will be implemented by a Project Implementation Unit (PIU) hosted at and comprising staff of the PWC. The PIU staff will consist of a Project Coordinator supported by an accountant, procurement officer and a M&E officer. At the State level a smaller PIU will be established in each of the SWCs for supervision and implementation of the project in the three States. The State PIUs will be under the Director General of each SWC and comprise staff of the SWCs. Provisions of transport will be included in the project to facilitate project supervision. The PIU will be supported by existing coordination mechanisms of the water sector institutions at the State level.

3.2.3 To ensure compliance with Government policies and procedures and to harmonise and coordinate among all water sector players, a Project Steering Committee (PSC) will be formed, comprised of the following people or their representatives: Director General of PWC (Chairman); Director of GWWD (Deputy Chairman); Director General SWC of North, South and West Darfur; Director of International Cooperation, Ministry of Finance; a representative from UNAMID; as well as the Project Coordinator. Consideration will also be given by the PSC to the formation of a Consultative Committee comprised of experts representing organisations in Sudan who are active in the many disciplinary areas which the project will address (these may include UNEP, UNICEF, donors, DLC, etc., with actual composition of the committee to be determined by the PSC).

3.2.4 The project will be effectively implemented in a secure manner in all the towns through reliance on Sudanese water expertise of all types. One consulting firm will be recruited to support the PWC in implementing the project. This will include undertaking the investment planning, preparation of detailed designs and tender documents for the immediate rehabilitation works and supervising their implementation, and preparing a capacity needs assessment and undertaking capacity building activities.

3.2.5 The project will count on the continued support of UNAMID to provide assistance as required.

3.3 Implementation Schedule

3.3.1 The duration of the project implementation is 38 months from the date of approval. The detailed implementation schedule is shown in Annex 2. Some of the key activities and milestones are completion of the inception report by month 12, validation of the investment plans by month 19, implementation of the priority works from month 25 to 36, and implementation of the SWC training programme from month 13 to 24 and the community training from month 22 to 36.

3.4 Procurement Arrangements

3.4.1 All procurement arrangements of this project will be in accordance with AWF Operational Procedures, *Bank Rules and Procedures for Procurement of Goods and Works* and *Rules of Procedure for the use of Consultants*. The use of relevant Bank Standard Bidding documents is mandatory. Procurement arrangements are summarised in Table 3.1 and described below.

Table3.1: Procurement Arrangements (all amounts in Euro)

Description	AWF Portion				Other ¹	Total
	QCBS	SSS	NCB	Shopping		
WORKS			1,668,522			1,668,522
North Darfur			556,174			556,174
South Darfur			556,174			556,174
West Darfur			556,174			556,174
GOODS			132,000	16,500		148,500
Vehicles			66,000			66,000
Water equipment			66,000			66,000
Data Management/GIS Equipment				16,500		16,500
SERVICES:	1,139,857	200,357		69,929		1,410,143
Consulting Firm	941,857					941,857
NGOs	198,000					198,000
Training at PWCT		200,357				200,357
Workshops and SC meetings				46,357		46,357
Study Tours				23,571		23,571
PROJECT MANAGEMENT		72,836			118,171	191,007
TOTAL	1,139,857	273,193	1,800,522	86,429	118,171	3,418,172

1) Government in-kind contribution to the project

3.4.2 **Civil Works** contracts amounting to €1,668,522 will consist of the rehabilitation of the water yards, mechanised boreholes, handpumps, hafirs and dams. It will also include the construction of new network (pipes), improved latrines and institution of public latrines. This will be implemented in three contracts of €556,174 each for the three Darfur states, with the procurement of the three Contractors done through National Competitive Bidding (NCB). The difficult location, and the character, size and value of the construction works to be undertaken, are such that they are unlikely to attract international bidders. There are local contractors in Sudan sufficiently qualified and in number sufficient to ensure competitive bidding.

3.4.3 **Goods** contracts amounting to €132,000 which will cover the procurement of hydro-geological monitoring and water quality control equipment, and vehicles for the three State PIUs to implement and supervise the project. The procurement method proposed for this item is National Competitive Bidding (NCB). Given the limited cost of the packages of goods, and the difficult and dispersed nature of their delivery to locations within the Darfur region, it is unlikely that these activities will attract international tenders. There are also a sufficient number of qualified local suppliers to ensure competitive bidding. Agents of qualified foreign suppliers shall be invited to bid under national shopping to ensure competition and fairness. The procurement of the data management/GIS equipment amounting to €16,500 shall be through Shopping due to the availability of the goods in the local market. These are very small items which would not attract international bidders.

3.4.4 **Consultancy Services** contract amounting to €941,857 for the design and investment planning shall be procured through Quality and Cost Based Selection (QCBS). The consultancy services contract will be procured by limited competition using international short listing and evaluation method based on technical quality with price considerations.

3.4.5 **Consultancy Services** contracts amounting to €198,000 for the organisation of the community level training and capacity building shall be procured through QCBS using a short list of NGOs with extensive experience in the Darfur. This will be implemented in three contracts of €66,000, with one NGO operating in each State.

3.4.6 **Consultancy Services** contract amounting to €200,357 for the training of the 50 technical and 30 managerial staff of the Darfur State Water corporations shall be procured through Single Source Selection (SSS). The training shall take place at the JICA established Public Water Cooperation Training Centre (PWCT) in Khartoum. A comprehensive training program with the details and justifications of the courses and costs established between the project management team and the training centre, shall be included as part of the inception report to be submitted to the AWF for prior review and approval.

3.4.7 **Workshops** and Steering Committee meetings amounting to €46,357 will be procured through Shopping or Direct Negotiation as appropriate. These workshops include those for project launching, validation of the inception report and investment plans, knowledge and donor's roundtable. **Study tours** for senior management amounting to €23,571 shall be procured through Shopping or Direct Negotiation as appropriate with specific institutions with relevant experience. The proposed institutions with justifications of their selection and proposed programs will be submitted for AWF approval as part of inception report.

3.4.8 **Project Management expenses** amounting to €72,836 shall be procured through Direct Negotiation. These expenses comprise the coordination allowances for the staff of the PIUs at the Public and State Water Corporations.

3.4.9 **Prior Review:** Contracts for Consultancy Services or Works of value higher than €100,000 will be subject to prior review by the AWF. The following documents are subject to prior review and approval by the AWF before promulgation; Specific Procurement Notices (SPN), tender/ bid documents or requests for proposals from consulting firms, tender/bid evaluation reports or reports on evaluation of consultants' proposals.

3.4.10 **Post Review:** Contracts for Consultancy Services or Works of value less than €100,000 will be subject to post review by the AWF, and will be processed under the full responsibility of the PWC. Ex-post technical verification and ex-post financial control systems will be used in these instances to enable the PWC to expedite procurement of goods, works and to acquire consulting services. Procurement documents will be kept by the PWC for periodic review by the AWF supervision missions or special audits.

3.4.11 **Advertising:** General and Specific Procurement Notices (GPN and SPN) for goods, works and services will be prepared by the PWC and subject to review and no objection by the AWF before submission for publication in UNDP Development Business and advertised in local media, in accordance with the Bank's procurement rules and procedures.

3.4.12 **Executing Agency:** The PWC in collaboration with the three Darfur SWCs will be responsible for the procurement of works, goods and services. To support this role the PIU will include a procurement officer appointed by the GoS. The PWC has implemented many development projects throughout Sudan for a variety of donors (UNICEF, IsDB, ADRA, etc.), and its senior management are familiar with the harmonised MDB procurement procedures. In addition, a multilateral procurement environment has already been set-up within the GoS as part of the operating procedures of the multi-donor Trust Fund. In view of its previous experience in implementing several multilateral donor projects, the capacity of the PWC to undertake procurement under this project has been judged to be adequate.

3.4.13 **Procurement Plan:** The Recipient shall, prior to Grant Effectiveness, prepare and submit a Procurement Plan acceptable to the AWF, setting forth (a) the particular contracts for goods, works and consulting services during the life of the project; (b) the proposed modes of procurement; and (c) the related AWF review procedures (prior or post review). The Procurement Plan shall also set out in

detail the miscellaneous items to be paid for from the Special Account. In order to expedite procurement activities, advance procurement actions will be utilised by the project where appropriate, and shall be noted in the Procurement Plan. The Recipient shall update the Procurement Plan annually or as needed throughout the duration of the project. Any revisions to the Procurement Plan will be subject to prior approval by the AWF.

3.5 Disbursement Arrangements and Expenditure Schedule

3.5.1 The proposed disbursement arrangement for the project as indicated in the table below will be under the Special Account Method. The Government of Sudan will open a Euro account for the project in a reputable Bank acceptable to the African Development Bank. The mission noted that the current on-going AfDB project for *Institutional Capacity Building for Poverty Reduction and Good Governance* has a Euro Account opened in the Central Bank of Sudan. It is proposed to transfer the funds to the project account in four tranches, according to the schedule shown in Table 3.2. Obligations of the AWF to make the first disbursement of the Grant shall be conditional upon the nomination acceptable to the AWF of the Project Coordinator and assignment of a PIU, opening of a Special Euro Account for the project, and preparation of a procurement plan. The replenishment of the tranches will be subject to AfDB financial regulations. Conditions for second and later disbursement will include an update to the Cash Flow Projections for the remainder of the project.

Table 3.2: AWF Disbursement Schedule

	Tranche 1	Tranche 2	Tranche 3	Tranche 4	Total
Amount (Euros)	330,000	1,000,000	1,000,000	1,000,000	3,300,000
Percentage	10.0 %	30.3 %	30.3 %	30.3%	100%
Approx. time from approval	6 months	13 months	20 months	27 months	

3.6 Financial Management Arrangements

3.6.1 The financial management of the project will be carried out by the PWC, who shall be responsible for budgeting, accounting, internal control, funds flow and financial reporting. The internal controls of the PWC will apply, with the accounting to be done in line with international accounting standards. In accordance with the foregoing, the PWC will be required to produce financial reports for the project every six months in a format to be agreed with the AWF. The reports will be submitted to the AWF for review no later than 45 days after the end of each six month period, as part of the semi-annual progress report.

3.6.2 The Bank financial regulations require the project accounts to be kept separately for the project, indicating expenditure by component category and source of financing. Statements of expenditure and supporting documents will be presented by the consultants and contractors of each State to the PIU and copied to the PSC, and should be kept for review by the Bank and for submission for justification during the request for replenishment. These documents, as well as the financial reports, shall be reviewed by an independent auditor at predetermined intervals to ensure that the funds provided have been spent for the intended purpose. The AWF will recruit and retain an auditor for this purpose, and will cover the cost from its administrative budget. Financial management will also be part of the AWF supervision missions (see 3.7.2).

3.6.3 To support this role of the PWC, the PIU will include an accountant appointed by the GoS. In view of its previous experience in implementing several multilateral donor projects, the capacity of the PWC to undertake financial management under this project has been judged to be adequate. In addition, the Bank is currently funding an institutional capacity building project in Sudan which uses a

Special Account with funds channeled through the Ministry of Finance. This project was assessed during the appraisal mission to be proceeding well, providing evidence that the Recipient has adequate capacity to manage the project’s Special Account.

3.7 Monitoring and Reporting Arrangements

3.7.1 The on-going monitoring of project activities will be done by the Project Implementation Unit. For project supervision and reporting, the PIU at national level has the capacity to supervise in all three states, and the project is planning an allowance for this type of activity. The Steering Committee will review implementation progress through its regular meetings. The Logical Framework matrix included in this Appraisal Report, and as modified in the Inception Report, shall serve as a basis for the result based assessment of the outputs of the project during implementation and after completion.

3.7.2 The AWF will also monitor project implementation through communication and correspondence with the consultants and contractors, as well as review of the progress reports. In addition, the AWF may undertake field supervision missions as the need to do so arises, with the assistance of UNAMID. Should the security situation prevent field visits by the AWF to the towns, the Facility will examine other options for supervision, such as recruiting a local consulting firm or individuals with recent record of work in Darfur.

3.7.3 The PWC shall adhere to the reporting requirements and schedule outlined in Table 3.3. The AWF Progress and PCR reporting formats will be used in preparing these reports.

Table 3.3: AWF Reporting Requirement

Documents to be Submitted to the AWF	Prepared By	Reporting Schedule	AWF Action
1. Inception report	PWC/SWC/ Consultant	Upon completion of PSC review, month 11	Review and approve
2. Investment plans and priority works	Consultant/ PWC/SWC	Month 19	Review and comment
3. Procurement documents	PWC	As required	Review and “no objection”
4. Semi-annual progress report (with financial reports)	PWC/SWC	Months 10, 16, 22, 28, 34	Review and comment
5. Project completion report	PWC/SWC	By end of month 36	Review and acceptance
6. Consultant monthly reports	Consultant	Upon presentation to PIU	For information
7. Minutes of Steering Committee meetings	PWC	Within 7 days of meeting	Review and comment
8. Minutes of any other meeting	PWC/SWC	Within 7 days of meeting	For information
9. Reports on workshops	PWC/SWC	Within 14 days of workshop	Review and comment

4. EFFECTIVENESS, EFFICIENCY AND SUSTAINABILITY

4.1 Effectiveness and Efficiency

4.1.1 All technical and implementation related alternatives were carefully reviewed and analysed during the mission, which included extensive field discussions with over 15 key institutions (comprising 80 individuals) in the sector, both in Darfur and Khartoum. The alternatives selected was deemed to be the most viable, effective and efficient method of proceeding. Furthermore, the project has gone through standard AWF internal review processes, and the GoS through the PWC has also reviewed and endorsed a draft version of this appraisal report.

4.1.2 Project design has attempted to balance needs with the current AWF strategic priorities. For example, under the new AWF strategy, all projects must have some relevance to leveraging resources. For this reason the project is focused on investment planning. Furthermore, the scope of civil works and the approach taken to their implementation has been selected to link with the investment planning, by serving as model towns to demonstrate innovative approaches which will be part of the plans. In this regard, since the AWF is not mandated nor set up to be an emergency response facility, the project has not focused on emergency rehabilitation.

4.1.3 The implementation arrangements noted in section 3.2, with a PIU established at the PWC and tasked with coordinating and overseeing the implementation of the project, and undertaking procurement, and smaller PIU in each of the three States, were selected as the most viable way of executing the project. The Fragile State Facility (FSF) guidelines were also reviewed for their suitability, particularly with respect to the use of specialized agencies. While this is an interesting option, there is no need to revert to it since the necessary capacity exists in Sudan to implement the project as proposed. In fact, local agencies (SWC, local government, local NGOs) have the proven ability to implement water projects in the Darfur region, and the project has learned from this valuable experience in selecting a similar approach. Furthermore, it was assessed that the use of UN or other specialized agencies is not the most viable way of implementing the project due to their high profile and cost. As well, using specialised agencies is not sustainable. A major component of project is to support local institutional capacity building, and using other agencies will defeat this purpose.

4.1.4 Similarly, while the special procedures/mechanisms as contained in the FSF guidelines are an option which could help expedite procurement actions, these will not be used since it is deemed more important to maximize economy and efficiency, ensure transparency and maintain proper fiduciary control in all procurement activities, especially given that the Bank has limited track record in Sudan and with the PWC. This can best be done by following standard Bank procedures, which the national level PWC has the capacity and experience to implement. And over the longer term, this approach will also set an example as to how to effectively implement the planned downstream projects. However, given the urgency of the project, all possible ways will be used to reduce the project duration. For this reason actions such as advance procurement have been incorporated in the project design.

4.2 Sustainability

4.2.1 To ensure long term sustainability of the water and sanitation systems, the SWC will take responsibility for operation and maintenance of the water and sanitation facilities in each town. Regular review of tariffs to reflect operation and maintenance costs of systems will ensure availability of funds for O&M. Sustainability will require significant additional investments in the sector to increase the number of customers served and the revenue base. In this regard, the investment planning under this project will pave the way for the mobilisation of additional resources for the implementation of planned downstream projects.

4.2.2 The strengthening of the SWCs will improve their ability to implement the downstream projects, and also provide a degree of confidence in potential donors which will facilitate their funding of the investment plans. As well, institutional capacity building strategies will focus on mechanisms to attract and retain key staff to operate and maintain the water systems, including provision of competitive perks and remuneration packages.

4.2.3 Various measures will be undertaken at community level to ensure project sustainability. In the course of constructing and rehabilitating water infrastructure, training and mentoring will be done with beneficiaries to impart the sense of ownership to them. In some cases, such as the development of hafirs or water yards, the beneficiaries will be directly involved in the construction and will be

encouraged to provide materials and labour for the construction, which will strengthen community capacity to maintain water infrastructure after the close of the project.

4.2.4 The sustainable availability of water resources in the 15 to 20 towns is one of the main issues which will be addressed in the technical approaches selected. The project includes the design and implementation of a water monitoring programme which will feed into the ongoing efforts to ascertain ground water availability and sustainable aquifer yields on a regional basis. The need for additional hydro-geological investigations and drilling programmes will also be identified and included in the investment plans. The project will also address storage and use of scarce surface resources, especially where adequate groundwater is not available; demand side efficiency measures, water conservation and reuse; and water resource management needs for environmental protection, groundwater recharge and river/stream erosion. As well, drought mitigation plans are featured in the project.

4.2.5 The detailed impact analyses prepared as part of the investment planning process, which will include environmental and social impact assessments, financial and economic evaluations, institutional analysis, and sustainability/risk assessment, will help ensure sustainability of the priority interventions to be implemented under the project, as well as the interventions proposed in the investment plans which will be implemented later under other funding.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 The project has been designed to achieve optimum impact within its relatively limited resources in comparison to overall needs. It will:

- Act as a catalyst to leverage the \$50 to \$100 million in financing required to meet longer term needs in 15 to 20 towns, through the preparation of bankable investment plans for funding.
- Meet priority water and sanitation needs for domestic and livelihood purposes in a carefully selected group of 3 to 6 model towns, and through the piloting of innovative approaches to the implementation of the priority works, demonstrate how to meet all types of water needs in an integrated manner.
- Build the capacity of the State Water Corporations and communities to sustainably manage their water resources and effectively deliver water and sanitation services, and to implement the downstream works, through a comprehensive capacity building programme.

5.2 As well, the project will have a significant impact on the ongoing conflict resolution and early recovery efforts, and thereby respond to the overall objective of using water as an instrument for peace building, by: reducing conflicts over scarce water resources through the provision of water for all segments of the population; promoting return or resettlement of IDPs to the towns; and supporting recovery of water based livelihoods.

5.3 It is recommended that a grant not exceeding **Euro 3,300,000** from the AWF resources be extended to the Government of Sudan for the implementation of the project described in this appraisal report.

Annex 1: Administrative Map of Darfur



Annex 3: Cost Estimate (amounts in Euro)

Description	Unit	Quantity	Unit Cost	Total	Foreign Costs AWF	Local Costs AWF	Local Costs In-Kind
INVESTMENT PLANNING							
Remuneration							
Team Leader	m/m	28	7,000	196,000	196,000		
Water and Sanitation Engineers	m/m	24	3,500	84,000		84,000	
Hydrogeologist	m/m	12	3,500	42,000		42,000	
Electro-Mechanical Engineer	m/m	6	3,500	21,000		21,000	
GIS and Remote Sensing Expert	m/m	6	6,000	36,000	36,000		
Environmentalist, Climate Change	m/m	6	6,000	36,000	36,000		
Technician (CAD)	m/m	24	2,000	48,000		48,000	
Supervisory Engineers	m/m	36	2,500	90,000		90,000	
Institutional Development, Capacity Building	m/m	3	3,500	10,500		10,500	
Gender and Social Equity	m/m	3	3,500	10,500		10,500	
Financial Analyst	m/m	8	3,500	28,000		28,000	
Secretarial/Administrative	m/m	72	500	36,000		36,000	
Sub-total Remuneration				638,000	268,000	370,000	0
Reimbursable Expenses							
Allowance (per-diem, accommodation)	m/m	156	1,000	156,000		156,000	
Survey	Item	3	10,000	30,000		30,000	
Transport, fuel	Item		27,000	27,000		27,000	
Communications, documentation	Item		5,234	5,234		5,234	
Sub-total Reimbursable Expenses				218,234	0	218,234	0
TOTAL INVESTMENT PLANNING				856,234	268,000	588,234	0
PRIORITY WORKS							
Rehab of water yards (incl. pump, tank)	No.	12	33,929	407,143		407,143	
Rehab of mechanised boreholes (incl. pump)	No.	12	17,857	214,286		214,286	
Rehab of handpump boreholes (incl. HP)	No.	24	5,714	137,143		137,143	
Rehab of hafirs (w/o treatment)	No.	6	50,000	300,000		300,000	
Rehab of dams	No.	0	224,296	0		0	
Construction of network (pipes)	m	30000	4.2	126,667		126,667	
Improved latrines (household)	No.	700	222	154,933		154,933	
Institutional or public latrines & handwashing	No.	30	5,889	176,667		176,667	
TOTAL PRIORITY WORKS				1,516,838	0	1,516,838	0
CAPACITY BUILDING							
Training at PWCT							
SWC technical staff	No.	60	1,429	85,714		85,714	
SWC managerial staff	No.	30	3,214	96,429		96,429	
Workshops and Study Tours							
Launching workshop	No.	1	7,143	7,143		7,143	
Knowledge Workshops - regional	No.	3	2,143	6,429		6,429	
Study tours of senior management	No.	6	3,571	21,429	21,429		
NGOs							
Community management				Incl.		Incl.	
Hygiene promotion/outreach				Incl.		Incl.	
Training on water for multipurpose uses				Incl.		Incl.	
Private sector service providers training/support				Incl.		Incl.	
Equipment							
Hydrogeological monitoring equipment	Item			30,000	30,000		
Water quality lab. equipment	Item			30,000	30,000		
Data management and GIS equipment	Item			15,000	15,000		
Vehicles	No.	3	20,000	60,000	60,000		
TOTAL CAPACITY BUILDING				532,143	156,429	375,714	0

PROJECT MANAGEMENT & COORDINATION							
PIU NWC (4 staff half time)	Months	52	714	37,143			37,143
PIU Coordination Allowance	Months	52	429	22,286		22,286	
SWC (9 staff half time)	Months	123	571	70,286			70,286
SWC Allowances	Months	123	357	43,929		43,929	
Inception report validation workshop	No.	1	7,143	7,143		7,143	
Investment plans validation workshops - regional	No.	3	2,143	6,429		6,429	
Donor roundtable	No.	1	2,143	2,143		2,143	
Steering Committee Meeting	No.	6	2,143	12,857		12,857	
Operating expenses							
TOTAL PROJECT MANAGEMENT				202,214	0	94,786	107,429
TOTAL				3,107,429	424,429	2,575,572	107,429
CONTINGENCY 10%				310,743	42,443	257,557	10,743
GRAND TOTAL				3,418,172	466,871	2,833,129	118,171
Percent of Grand Total					13.7%	82.9%	3.5%
CONTRIBUTIONS						3,300,000	118,171
Percent Contribution						96.5%	3.5%

Resources to State PIU

Transportation/Fuel for Assessment
Transportation/Fuel for Supervision
Perdiems for Assessment
Perdiems for Supervision
Stationary/Drawing paper

External Resources

Survey and Design services
Detailed drawings

Establish Sub-Office in New States

Vehicle for Federal PIU

1 No. 4X4 Double Cabin Pick-up

Annex 4: Organisation Chart



