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A JOINT PROGRAMME BETWEEN THE UNITED REPUBLIC OF
TANZANIA AND THE REPUBLIC OF MALAWI

SONGWE RIVER BASIN DEVELOPMENT PROGRAMME (SRBDP)

DETAILED DESIGN AND INVESTMENT PREPARATION
PROJECT

APPRAISAL REPORT

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AWF
NEPAD-IPPF

February 2010

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LIST OF ACRONYMS

ADB, AfDB	<i>African Development Bank</i>
ANBO	<i>African Network of Basin Organisations</i>
ASDS	<i>Agricultural Sector Development Strategy (Malawi)</i>
AMCOW	<i>African Ministers' Council on Water</i>
AWF	<i>African Water Facility</i>
BOQ	<i>Bill of Quantities</i>
CM	<i>Council of Ministers</i>
EA	<i>Executing Agency</i>
EIRR	<i>Economic internal rate of return</i>
ESAP	<i>Environmental and Social Assessment Procedures (of AfDB)</i>
ESCOM	<i>Electricity Supply Corporation of Malawi Ltd</i>
ESIA	<i>Environmental and Social Impact Assessment</i>
EWURA	<i>Energy and Water Utilities Regulatory Authority (Tanzania)</i>
GOM	<i>Government of Malawi</i>
GOT	<i>Government of Tanzania</i>
ISH	<i>International Shopping</i>
IPPF	<i>Infrastructure Project Preparation Facility</i>
IWRM	<i>Integrated Water Resources Management</i>
JCO	<i>Joint Committee of Officials</i>
JSC	<i>Joint Steering Committee</i>
LFA	<i>Logical Framework Approach</i>
M&E	<i>Monitoring and Evaluation</i>
MEM	<i>Ministry of Energy and Minerals (Tanzania)</i>
MERA	<i>Malawi Energy Regulatory Authority</i>
MDGs	<i>Millennium Development Goals</i>
MoU	<i>Memorandum of Understanding</i>
MW	<i>Malawi</i>
MWFO	<i>Malawi Field Office (of the AfDB)</i>
NCB	<i>National Competitive Bidding</i>
NEPAD	<i>New Partnership for Africa's Development</i>
NGOs	<i>Non-Government Organisations</i>
NPV	<i>Net present value</i>
NSH	<i>National Shopping</i>
NSL	<i>National Short-Listing</i>
NWDP	<i>National Water Development Program</i>
O&M	<i>Operation and Maintenance</i>
PCR	<i>Project Completion Report</i>
PMU	<i>Project Management Unit</i>
RBA	<i>River Basin Authority</i>
REA	<i>Rural Energy Agency (Tanzania)</i>
RFP	<i>Request for Proposals</i>
RMC	<i>Regional Member Country</i>
SADC	<i>Southern African Development Community</i>
SC	<i>Steering Committee</i>
SDC	<i>Swiss Development Cooperation</i>
SESA	<i>Strategic Environmental and Social Assessment</i>
SRBDP	<i>Songwe River Basin Development Programme</i>
SRTCMP	<i>Songwe River Transboundary Catchment Management</i>

	<i>Project</i>
TANESCO	<i>Tanzania Electric Supply Company</i>
TM	<i>Task Manager</i>
TWRM	<i>Trans-boundary Water Resources Management</i>
ToR	<i>Terms of Reference</i>
TZ	<i>Tanzania</i>
TZFO	<i>Tanzania Field Office (of the AfDB)</i>
WRM	<i>Water Resources Management</i>
WSDP	<i>Water Sector Support Project</i>
WSS, WS&S	<i>Water Supply & Sanitation</i>
WWF	<i>World Wide Fund</i>

LOGICAL FRAMEWORK FOR OF THE DETAILED DESIGN AND INVESTMENT PREPARATION PROJECT

HIERARCHY OF OBJECTIVES	EXPECTED RESULTS	REACH BENEFICIARIES	PERFORMANCE INDICATORS	INDICATIVE TARGETS AND TIMEFRAME	RISKS & MITIGATION MEASURES
<p>GOAL: Contribute to improved living conditions of the basin population and the socio-economic development in the two countries.</p>	<p>IMPACT: The objectives of the SRBDP and of the Shared Vision 2010 - 2050 fulfilled in terms of reduced poverty, increased resilience of basin population to changing natural and socio-economic conditions, minimised impacts of floods and droughts, reduced loss of land, increased agriculture and fisheries outputs, enhanced electricity coverage, improved road network and river crossing opportunities, and reduced risks of water disputes.</p>	<ul style="list-style-type: none"> • Inhabitants of the Songwe River Basin in particular, and • Populations of Malawi and Tanzania in general 	<p>Indicators:</p> <ol style="list-style-type: none"> 1. Annual Gross Domestic Product per capita (GDP/capita) 2. Health status of population (under-five mortality rates in the countries) 	<p>Target:</p> <ol style="list-style-type: none"> 1 GDP/capita increased from \$730 for Tanzania and \$731 for Malawi in 2008 to \$1,500 for both countries over the timeframe. 2 Under-five mortality reduced in Tanzania from 118/1000 and in Malawi from 120/1000 in 2008 to 75/1000 for both countries over the timeframe. <p>Time Frame:: 2020-50</p>	<p>Risk:</p> <ul style="list-style-type: none"> - Inadequate mobilisation of funding for capital investments of the SRBDP. <p>Mitigation:</p> <ul style="list-style-type: none"> - Establishment of a joint basin commission will consolidate the good climate of collaboration; - Engage in establishment of a Forum of Financial Partners for financial mobilisation assisted by MWFO, TZFO, and AfDB Regional Departments
<p>OBJECTIVE: Prepare designs and joint investment projects for implementation and to create an effective enabling environment for TWRM in the Songwe Basin</p>	<p>OUTCOMES: Strengthened cooperation governed by joint River Basin Commission and instruments for investment mobilisation for river basin development implementation. Songwe River basin development will lead to:</p> <ul style="list-style-type: none"> • Increased access to electricity for the populations in the basin and the entire two countries; • Increased access to water supply; • Reduced frequency of floods and risks of overtopping of flood plain; • Increased irrigated land and crop yield; • Improved cooperation in Trans-boundary WRM 	<ul style="list-style-type: none"> • Government authorities of the two countries • Local authorities of the Songwe River Basin • SADC member countries 	<p>Indicators:</p> <ul style="list-style-type: none"> • Existence of a functional River basin Commission • Number of approved joint investment projects • Commitment and level of investment resources mobilised 	<p>Target:</p> <ul style="list-style-type: none"> • Songwe River Basin Commission established by 2014 • A joint hydropower and river course stabilization project, joint social infrastructure projects and a joint watershed management project approved by 2014 • At least 50% of the estimated US\$ 478 million cost of initial capital investments is committed by 2014 	<p>Risk:</p> <ul style="list-style-type: none"> • Low level of commitment of funds for capital investments by donor stakeholders. • Inadequate cooperation by one or both of the countries. <p>Mitigation:</p> <ul style="list-style-type: none"> • The establishment, under the project, of an active Forum of Financial Partners for resource mobilisation assisted by MWFO, TZFO, and the AfDB should ensure an adequate level of resource mobilization. • The binding MoU and the Convention establishing the River Basin Commission to be signed under the project will promote continued cooperation between the two countries.

<p>ACTIVITIES</p> <p>Component I : (i) Preparation of a Shared Vision 2050 and (ii) Updating of the SRBDP</p>	<p>OUTPUTS</p> <p>(i) Shared Vision 2050 and SRBDP created and approved in a participatory manner; (ii) A 10 year Songwe River Basin Development Programme (SRBDP) established and approved</p>	<p>Local , national and international stakeholders, civil society, private and public sectors</p>	<p>Indicators: - Shared Vision adopted - Documents submitted and approved according to implementation schedule in the appraisal report Source: Publication, progress reports, supervision missions and project completion report</p>	<p>Target: - Shared Vision effective - (SRBDP) established and approved. Time Frame: 12/2012</p>	
<p>Component II: Updating Feasibility Study, Detailed Design and Preparation for Capital Investments</p>	<p>(i) Detailed designs, tender docs, and capital investment plans developed and approved for construction of the lower dam, hydropower stations, river course stabilisation works, flood attenuation structures and associated investments; (ii) Designs and development plans prepared for social infrastructure investments in rural electrification, roads and river crossings, fisheries & fish farming, water supply and sanitation, and promotion of tourism</p>	<p>Local , national and international stakeholders, civil society, private and public sectors</p>	<p>Indicators: 1. Reports delivered and approved according to Reporting Schedule Source: Minutes from SC meetings, Project completion report, Minutes from development partner forum</p>	<p>Target: Component II completed Time Frame: 12/2012</p>	
<p>Component III: Strategic Environmental & Social Assessment (SESA) and Environmental & Social Assessment (ESIA)</p>	<p>A Strategic Environmental and Social Assessment (SESA); Environmental, and Social Impact Assessment (ESIA) and associated mitigation plans, relocation arrangements, and compensation schemes for each specific Programme intervention</p>	<p>Affected households, stakeholders, at all levels incl. women and children, civil society, private/ public sectors</p>	<p>Indicators: 1. Strategic S&E Assessment completed and approved by SC and GoM/GoT 2. Project specific ESIA completed and approved by SC and GoM/GoT Source: Minutes SC meetings, letters from GoT/GoM, PCR</p>	<p>Target: Component III activities completed Time Frame: 12/2012</p>	
<p>Component IV: Institutional Development (i). Establishment of a River Basin Commission (ii). Instruments and Capacity Building for IWRM</p>	<p>(i) River Basin Commission convention approved by Heads of State and ratified, (ii) Instruments for IWRM capacity building prepared including (a) "Business Plan" for the RBA; (b) Training and capacity building programmes; (c) communication and stakeholder participation (iii) On the job-training :of staff finalised</p>	<p>Local , national and international stakeholders, incl. women and men, civil society, private and public sectors</p>	<p>Indicators: (i) RBA convention signed and ratified, (ii) Instruments for IWRM on the job-training :of counterpart specialists training successfully carried out Source: Progress reports, PCR, Minutes from SC meeting, Supervision missions</p>	<p>Target: Component IV activities successfully completed Time Frame: 12/2012</p>	
<p>Component V: Project Management and Operations</p>	<p>(i) Operational facilities in place, (ii) project, administration. (iii) Work plans implemented. (iv) Reports approved (iv) financial management auditing accomplished, (v) Procurement completed (i) Project mgmt and oversight functioning (ii)TM assigned, counterpart staff seconded and operational resources provided;</p>	<p>Local , national international stakeholders, women & men, civil society, private/public sectors</p>	<p>Indicators: - % of required investments ensured and effective 1. Necessary goods and works delivered 2-8. Project progress reports submitted at agreed intervals Source: Project progress reports, Supervision missions</p>	<p>Target: Project timely and cost efficiently implemented Time Frame: 12/2012</p>	
<p>Financing: AWF €3,549,000; IPPF: € 1,226,295; GoM: 407,610; and GoT: € 596,610. Total Cost: € 5,779,515</p>					<p>Project Duration:32 months</p>

EXECUTIVE SUMMARY

1. The AfDB received a funding request dated 22nd August 2008 from the Governments of The Republic of Malawi and The United Republic of Tanzania for financing the detailed design and implementation of the Songwe River Basin Development Programme (SRBDP). The Bank identified the African Water Facility (AWF) as possible source of finance to respond to the request. Due to the size, the complexity and the cost of the Project as well as its focus on both water infrastructure investments and strengthening of trans-boundary water resources management (TWRM), AWF and NEPAD-IPPF have joined forces to avail resources for joint funding.
2. The overall goal of the proposed Project is to contribute to economic growth, reduced poverty, improved health, better living conditions, and enhanced food and energy security for the people in the Songwe Basin as well as economic development of the two countries. Its objectives are to assist the two countries creating a long-term strategic framework, investment plans, and enabling environment for basin-wide socio-economic development based on joint management of the shared waters. The Project also provides detailed designs and other preparations for capital investments in the order of Euro 400 million, including a multi-purpose dams, and associated hydropower schemes, irrigated agriculture, river stabilisation, flood control, fisheries development, water supply and roads. Two other dams in the river basin will be designed to feasibility level under this study and their detailed designs will be undertaken later on, under the implementation of the Songwe River Basin Development Programme (SRBDP).
3. The Project is structured in five Components: (i) Preparation of a Shared Vision towards 2050 and a 10-year Songwe River Basin Development Programme (SRBDP); (ii) Detailed design and preparation for priority investment projects as a major task; (iii) Environmental and social safeguarding of the SRBDP by means of a Strategic Environmental & Social Assessment and Environmental & Social Impact Assessment for the Programme; (iv) Development of a Joint River Basin Commission and associated IWRM capacity building at local and national level; and (v) Support to Project management and resource mobilisation for the implementation of capital investments under the programme.
4. The overall duration of the Project is 32 months from grant agreement signature, including 8 months for mobilisation, preparatory activities and procurement of a Consultant. Its total costs are estimated to be about € 5,779,515, to be financed by the Government of The Republic of Malawi and the Government of The United Republic of Tanzania, the AWF, and the NEPAD-IPPF. The contribution from the two countries is estimated at a total of € 1,004,220, consisting of € 407,610 from Malawi and € 596,610 from Tanzania. These amounts will go towards the financing of national counterpart experts, local project management staff, the provision of fully equipped office facilities, and Joint Committee Meetings. The proposed AWF and IPPF grants will be €3,540,000 and € 1,226,295 respectively.
5. The proposed Project and the two applicants are eligible and suitable for receiving AWF and NEPAD-IPPF funding. The Project qualifies for support from the two Facilities due to its focus on trans-boundary water resources management and infrastructure development and against the backdrop of the mandate of the Facilities to promote the preparation of, and funding mobilisation for, viable water investments in the RMCs. This intervention will also promote cooperation between riparian states in the management of trans-boundary water resources. The Project will trigger joint capital investments under the long-term Programme that will contribute to the attainment of the socio-economic development goals of the Shared Vision.
6. Based on a comprehensive assessment of the proposed Project taking into consideration its relevance, effectiveness, sustainability, economic viability, and the recipients' capacity, it is recommended that a grant not exceeding €3,549,000 from the AWF and € 1,226,295 from the NEPAD-IPPF be extended to the Governments of the United Republic of Tanzania and the Republic of Malawi. The Grant Agreement will be signed by the Ministry of Finance of the Republic of Malawi on behalf of the two Governments, with the Ministry of Irrigation and Water Development of Malawi designated as the Executing Agency. A Memorandum of Understanding (MoU) attributing these roles to the Republic of Malawi will be signed between the two countries before Grant signature.

1 BACKGROUND

1.1 Origin of the Project

1.1.1 The AfDB received a joint funding request dated 22nd August 2008 from the Governments of The Republic of Malawi and The United Republic of Tanzania for financing the detailed design and implementation of the Songwe River Basin Development Programme (SRBDP). The Bank identified the African Water Facility (AWF) and NEPAD-Infrastructure Project Preparation Facility (IPPF) as possible sources of finance to respond to the request.

1.1.2 The project originated in 2001 when the two countries engaged in a Preliminary Study in 2001 – 2002, followed by a Feasibility Study, started in November 2002 and completed in December 2003, funded by the Nordic Development Fund (NDF). The initial rationale for the Project was to address the frequent shifting of the international border between the two countries due to the random meandering of the lower parts of the Songwe river. Hence, the preliminary study basically focused on developing feasible options for the stabilization of the Songwe River course. The Feasibility Study completed in December 2003 will be updated under the proposed study due in order to take account of any changes that have occurred since then and to fill-in any gaps in information in the previous investigations and analyses.

1.1.3 During the review of the preliminary study report, the two Governments realised that it was not feasible to carry out the river course stabilisation measures as a stand-alone project and that it was necessary to consider the structural investments for river stabilisation in a broader basin development perspective. It was therefore decided to upgrade the Project into a basin-wide and comprehensive Songwe River Basin Development Programme (SRBDP) aimed at supporting economic growth and poverty alleviation in the entire basin. The Feasibility Study prepared in 2003 identified potential areas of intervention in terms of the development of irrigated agriculture, hydropower production, flood control, stabilisation of the river course, upgrading of water supply, fisheries development, promotion of tourism and the need to create an enabling institutional environment for joint management of the shared waters.

1.1.4 From 2004 to 2007 the two governments made significant efforts to mobilise funding for the detailed design and capital investment preparations by approaching different funding agencies such as the European Commission - EU Water Facility and AWF. The first request for funding submitted to AWF in 2006 exceeded the upper limit for AWF grants (EUR 5 million). Consultations continued between AWF and the two Governments to explore co-funding opportunities. Given the size and complexity of the Project and its focus on both water infrastructure investments and enabling environment for TWRM, AWF and NEPAD-IPPF agreed to consider the opportunities for financing of the Project jointly. The two Governments submitted an updated request for funding in 2008 that was entered into the pipelines of the two facilities for appraisal in 2009.

1.1.5 Following an Identification Mission carried out by the AWF in Malawi in early 2008, a joint AWF and NEPAD-IPPF team including the Malawi Field Office (MWFO) carried out a field appraisal mission to Malawi and Tanzania in June - July 2009 including a field visit to the Songwe River Basin together with high-level representatives of both Governments. The mission met with local district authorities, traditional authorities and community representatives as well as other stakeholders on both sides of the river. The outcomes of the mission served as an important input into this appraisal report.

1.1.6 The project will be informed by the lessons learnt so far from the implementation of a number of projects supported by the Bank and other donors in the SADC region. These projects include the Shared Watercourse Support Project for the Buzi, Ruvuma and Save River Basins; the Communicable Diseases Project; the SADC Open and Distance Learning Capacity Building Project.; as well as the the SADC Regional Water Supply and Sanitation Programme financed by the African Water Facility (AWF) and the Groundwater and Drought Management Project financed by the World Bank and implemented by SADC.

1.2 Sectoral Priorities

1.2.1 The Project corresponds well to the focal areas of intervention of the Africa Water Vision 2025 for Equitable and Sustainable Use of Water for Socio-economic Development and the priorities of AMCOW and NEPAD on strengthened cooperative framework arrangements for TWRM, structural investments to enhance water and energy security, and adaptation to climate change and variability risks. The Project's strong connection to NEPAD is also consolidated by the cooperation between AWF and NEPAD-IPPF.

1.2.2 The SADC Protocol on Shared Watercourses¹ is a key strategic instrument for the preparation of the Shared Vision 2050 for the Songwe River and the River Basin Development Programme (SRBDP). The Songwe Project is part of the SADC Regional Strategic Action Plan for IWRM (RSAP-IWRM) aimed at fostering cooperation and equitable sharing of benefits accrued from the joint management and development of the shared/cross-border watercourses.

1.2.3 The two Governments are currently implementing national Water Sector Reforms that will strengthen their IWRM capacity and benefit the joint management of the Songwe River Basin. In Malawi, the reforms are pursued by the National Water Development Program (NWDP) (2009-13) and in Tanzania the Water Sector Support Project (WSSP) 2007-12, under the Water Sector Development Program (WSDP) 2006-25 plays a key role. The project will contribute to the reduction of poverty and achieve the objectives of the Malawi Growth and Development (MGDS) in line with Bank Group Results Based Country Assistance Strategy (RBCSP, 2005-2009/10) under Pillar I. The intervention will respond to Government's emphasis in the MGDS on the infrastructure development to improve the quality of services for the communities in the zone of influence and contribute to poverty reduction.

1.2.4 The irrigation development component of the Project will be duly linked to the relevant policies and strategies in the two Countries. For instance, the National Irrigation Policy and Development Strategy in Malawi and in Tanzania, the Agricultural Sector Development Strategy (ASDS) 2001 and the Agriculture Sector Development programme (ASDP) 2006, including irrigation development channelled through the District Agricultural Development Plans (DADPs).

1.2.5 The Project will also be closely linked to, and benefit from, the hydropower development policies, strategies, and projects in the two countries. The Project will equally be aligned to the countries' policies on watershed management, land-use planning, water reservoirs development for improved water security and reduced floods and droughts as well as strategies on irrigated agriculture, water supply, sanitation and fisheries development. In order to obtain the necessary permits, the Project will cooperate with the relevant regulatory authorities of the two countries, such as the Malawi Energy Regulatory Authority (MERA) and the Energy and Water Utilities Regulatory Authority (EWURA) in Tanzania.

¹ Extract and link to document found in Annex 5

1.3 Problem Definition

1.3.1 The Songwe River Basin has a surface area of 4,200 km² and a population of about 320,000 (2008)². For several decades, the basin has been subject to considerable rural settlement developments and expanding urban centres resulting in increasing pressure on the basin's land and water resources. Up to 80% of the population of the Songwe River Basin consists of rural poor. Some of the main problems and challenges facing the basin comprise:

- i. Frequent shifting of the international border between the two countries in the river delta zone due to the random meandering of the river, resulting to frequent flooding in the lower basin;
- ii. Gender bias: inequitable distribution of land and property affects specially women and the youth;
- iii. Weak institutions: law enforcement and institutional presence in some areas of the Basin is weak.
- iv. Inadequate infrastructure: infrastructure damage and loss of life occur in times of heavy rains; the road network is particularly poor and the use of unsafe life-threatening monkey bridges is common;
- v. Unstable access to fish resources;
- vi. Deforestation, bush burning, and unsuitable cultivation practices in the upper reaches of the river causing erosion and increased sediment transport;
- vii. Agriculture is the most important economic activity in the Basin; however, the agriculture production potential remains largely untapped: the yield of rice for example remains far below the yields obtained under water management regimes;
- viii. The Basin suffers from the deterioration of safe water sources, health and sanitation facilities due to flooding and poor water management; a considerable part of the Basin Population is lacking access to safe water supply: 30% in the Lower Basin, 40% in the Middle and 50% in the Upper Basin;
- ix. Considerable unused hydropower development potential that could contribute to economic growth and alleviation of the severe electricity shortages facing the two countries. Over 75% of the population of the Basin has no access to electricity.

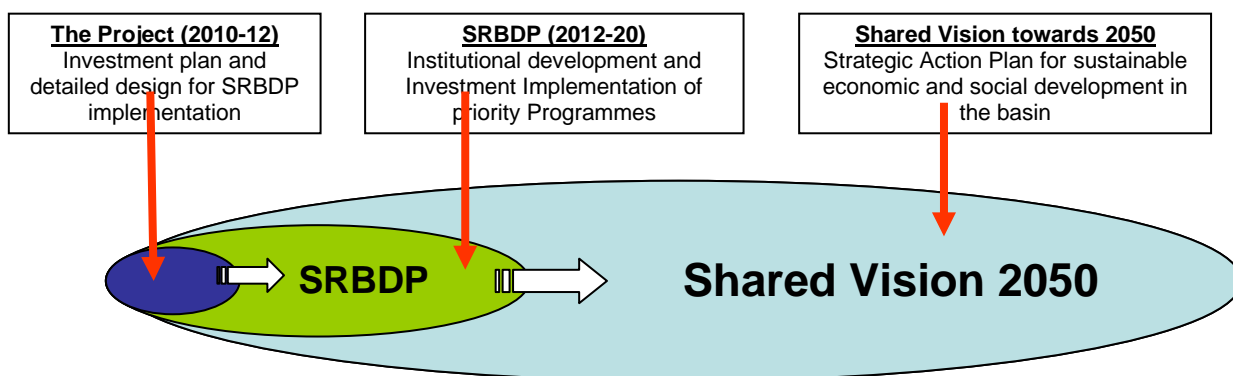
1.3.2 In general, the economy of the basin highly depends on water related sectors and the above cited problems need to be addressed through integrated trans-boundary water resources management and associated capital investments as one of the main challenges of the proposed Project.

1.4 Description and Objective

1.4.1 The strategic framework, structure, and implementation modalities of the Project anchors the Project and the associated Songwe River Basin Development Programme (SRBDP) within the framework of a long term Shared Vision as illustrated in Figure 1.1.

² Feasibility study for the stabilization of the course of the Songwe River, Norplan, 2003.

Figure 1.1: Strategic Framework for Long-term Integrated Development of Songwe River Basin



1.4.2 The goal of the Project is to contribute to improved living conditions of the basin population and the socio-economic development in the two countries. The specific objectives are to prepare designs and joint investment projects for implementation and to create an effective enabling environment for TWRM in the Songwe River Basin.

1.5 Beneficiaries and Stakeholders

1.5.1 The beneficiaries and stakeholders are the entire population of the Songwe River Basin. The institutional stakeholders comprise Government and local authorities of the two countries, community interest groups, private and public sectors, and NGOs (international, national, and local). At national level, the electricity authorities, service providers and the different consumers will be significant beneficiaries.

1.6 Justification for AWF and IPPF Support

1.6.1 The proposed Project falls under the focus areas of AWF and NEPAD-IPPF by supporting improved management of shared watercourses and investments at basin level. The proposed Project is also in line with the themes supported by AWF and IPPF of promoting the preparation of viable infrastructure projects in the view of building the pipeline for future investments in the RMCs. The project activities are meant to trigger investment in viable hydropower projects and other multipurpose projects addressing watershed management, basic water resources information management, flood control and drought management, irrigation, water supply, sanitation and fisheries development. The AWF and IPPF support will enable the two Countries to attract and make effective use of new capital investments that will contribute to the achievement of the national objectives related to the MDGs.

2 THE PROJECT

2.1 Impacts

2.1.1 The overall development impacts of the Project will be its contribution to economic development, reduced poverty, improved health, better living conditions, and enhanced food and energy security for people in the Songwe Basin as well as economic development of the two countries. These impacts are attributed to the structural and institutional framework investments in water reservoirs (improved water security and reduced floods and droughts), hydropower production, irrigated agriculture, stabilisation of the border between the two countries, combined management of land and water resources, and investments in water supply and fisheries development. It will also contribute to increased resilience of the basin population to changing socio-economic and natural conditions, including climate variability and climate change. The

implementation of the envisaged programmes and projects in the horizon of 2030 should contribute to a significant reduction in the poverty incidence in both countries in general and in the SRB in particular.

2.2 Outcomes

2.2.1 The overall outcome of the SRBDP will be the strengthened cooperation between the two governments on the joint development of Songwe river basin governed by a joint River Basin Commission. The project will provide the necessary instruments for investment mobilisation for the construction of major infrastructure for the benefit of the entire basin population and the population of the two countries.

2.2.2 The investment on the water resources development of the basin will lead to::

- (i) Increased access to electricity for the populations in the basin and the entire two countries;
- (ii) Increased access to water supply;
- (iii) Reduced frequency of floods and risks of overtopping of flood plain;
- (iv) Increased irrigated land and crop yield; and
- (v) Improved cooperation in Trans-boundary WRM, through a formal framework.

2.3 Outputs

Component I:

- A Shared Vision 2050 prepared and adopted;
- SRBDP updated, developed and approved, including: (a) Natural Resources and Land Use Management Programme, (b) Community Development Programme (c) Economic Development Programme and Financial Mobilisation, (d) Strategic Capital Investment Plan.

Component II:

- Updated Feasibility Study;
- Designs and investment preparation for major capital investments in the Lower Dam³ and associated hydropower plants, irrigation schemes, river course stabilisation works, flood control, water supply, fisheries and fish farming and roads and river crossings;
- Designs and development plans prepared for social infrastructure investments in rural electrification, roads and river crossings, fisheries & fish farming, water supply, and promotion of tourism.

Component III:

- A Strategic Environmental and Social Assessment (SESA) of the programme;
- Environmental, and Social Impact Assessment (ESIA) and associated mitigation plans, relocation arrangements, and compensation schemes for each Programme intervention finalised.

Component IV:

- River Basin Commission convention approved and ratified by the two countries;
- Instruments for IWRM capacity building prepared including (a) “Business Plan” for the RBA; (b) Training and capacity building programmes prepared; (c) Communication and stakeholder participation functioning;
- On the job-training of counterpart staff.

Component V:

- Project management successfully completed;
- PM assigned, counterpart staff seconded, facilities, equipment, and operational resources provided;
- Resource mobilisation activities carried out;

³ Lower Dam: detailed design and tender documents, Middle and Upper Dam: updating of the feasibility study

- Project timely and cost efficiently implemented.

2.4 Activities

2.4.1 The activities of the Project have been structured under 5 Components. The activities under each component have been described in detail in the ToR for the consultancy assignment, annexed to this report. The activities will address a broad range of TWRM related issues including, technical, institutional, legal, social, economic, and environmental elements. The project inception, methodology and design criteria will include:

- Collecting relevant reports, data and information related to the Songwe River Basin Development Programme (SRBDP) including available baseline physical, biological, social, cultural, economic, institutional, legal, policy, and technical data, studies and information;
- Examining the Feasibility Study and assessing complementary information and data needed to address the different Components of the Project;
- Studying all aspects of water related development plans in the Basin;
- Undertaking field reconnaissance and meeting key stakeholders and beneficiaries to address all areas of concern, especially the physical and human environment, social and economic factors;
- Describe the methodology and design criteria to be adopted by the Consultant under the different components and the development of a detailed work plan and time schedule;
- Preparing an Inception Report for approval.

2.4.2 The main Project activities under the different Components are summarised in the following:

Component I: Preparation of a shared Vision and an updated SRBDP

A timeframe of 30 to 50 years for the shared vision in the basin has been adopted in the Project to take into account the fact that integrated transboundary river basin development requires long-term engagements from the assessing of resources, planning development, establishing frameworks for cooperation and undertaking phased investment programmes. The maturity of some of the multipurpose infrastructure such as dams could require over 20 years from the time of planning, through implementation and the realization of benefits.

Preparation of Shared Vision 2050:

The formulation of the shared vision for the development of the basin will be basin-wide and will include the active participation and the sensitisation of the basin communities, representative authorities, local and regional stakeholders, including the private sector. The scope of the vision up to the planning horizon of 2050 will cover the capital investment programmes to be implemented, the institutional development programmes and cooperative frameworks for harmonized regulatory procedures as well as provisions for the equitable distribution of the benefits from the joint development of the basin.

The following tasks will be carried out under this activity:

- Prepare a plan for the development process for a Shared Vision 2050 with the involvement of communities and representative authorities, the private sector, etc.;
- Prepare a Shared Vision 2050 document for approval after all districts and multiple stakeholders and authorities have been sensitised on the Vision.

Songwe River Basin Development Programme (SRBDP):

- Update the Programme and develop a holistic framework for the management of the Songwe River Basin Development Programme (SRBDP), guided by the Shared Vision 2050, including the following tasks:

- Preparation of a Natural Resources and Land Use Management sub-Programme based on joint management of water and other natural resources and land use to regulate the increasing settlements and activities in vulnerable parts of the watershed to reduce erosion and improve catchment conditions. The SRTCMP⁴ is a valuable source of information in this respect;
- Preparation of a Community Development sub-Programme addressing poverty alleviation, community needs, health and education, gender issues in the context of social development, and the outcomes of the Strategic Environmental and Social Assessment (SESA);
- Preparation of an Economic Development sub-Programme including new economic growth opportunities, economic planning tools; arrangements for management of joint assets, business plan for electricity production and trade and a capital investment implementation plan.

The outputs of this component will form the basis of the objectives to be achieved by the River Basin Commission, whose establishment will be facilitated under Component 4 of the Project. The Convention for the establishment of the Basin Commission and the Business Plan for the Basin Commission will be informed by the results of this Component of the Project.

Component II: Updating Feasibility Study, Detailed Design and Preparation for Capital Investments:

- Update the Feasibility Study based on inputs from all Project Components.

Supplementary Field Surveys for Dams, hydropower and associated infrastructure:

- Review of existing information;
- Supplementary topographical survey and mapping including: surveying for dams and hydropower plant and surveying for infrastructure;
- Supplementary geological and geo-technical investigations including: core drilling seismic refraction investigation, seismic hazard assessment, landslide risks, testing of construction material, and topographical survey for electrical power transmission and distribution;
- Hydrological survey including: volume and surface area curves for reservoirs suspended and bed-load sediment transport study simulation and optimisation of energy production; and
- Recommendation of dam types;

Prepare Detailed Designs and capital investment preparations:

- Optimisation of detailed-design parameters;
- Detailed designs of Lower Dam (and updating of the feasibility studies for the Middle and Upper Dam) and associated hydropower plants such as: (i) intake and water conveyance system, (ii) mechanical and electrical equipment, (iii) turbines, generators and other electrical equipment, (iv) hydraulic steelworks, (v) powerhouse structure and mechanical equipment, (vi) access tunnel, (vii) transmission lines and substations; (viii) diversion, access roads and river crossings, (ix) construction power, construction camp sites and other temporary infrastructure;
- Construction implementation plan.

River Course Stabilisation and Flood Control:

- Review of existing information concerning: (i) river course stabilisation and protecting banks, (ii) protection of excavated channels against scour and erosion (iii) supplementary technical investigations, (iv) hydraulic survey (v) cross-section survey, (vi) and flood control structures from Kyungu River;
- Updating Feasibility Designs;

⁴ Songwe River Trans-boundary Catchment Management Project (SRTCMP) funded by the Swiss Government and implemented by WWF and CDE

- Detailed Design and tender documents for structural investments;
- Construction plans.

Irrigation and Drainage Works:

- Review of existing information;
- Supplementary Investigations: (i) feeder canal topographic survey, (ii) topographic survey of existing and proposed irrigation service areas Kaseye Valley Irrigation Site, Malawi Drain (Runoff from Kyungu River), Floodplain Survey;
- Updating Feasibility Designs;
- Detailed Design and tender documents for feeder canals, irrigation and drainage works;
- Investment and Construction Plans.

Cost Estimate and multipurpose benefit optimisation:

- Cost estimates of capital investments;
- Multipurpose optimisation (economic benefits and social and environmental consequences) of hydropower generation, flood attenuation, irrigated agriculture development etc.

Water related social infrastructure under the SRBDP:

- Review of existing information;
- Rural electrification including identification of potential projects, rural electrification strategy, and rural electrification action plan under the SRBDP;
- Fisheries and fish farming development including stock assessments and identification of sustainable and appropriate technological options for fisheries and fish farming development in the river basin under the SRBDP;
- Water supply development to reach the MDGs including definition of the scope and implementation under the SRBDP;
- Promotion of Tourism including scoping study of opportunities for tourism and recreation development related to water to be included in the SRBDP;
- Roads and River Crossings (included in Component II)
- Preparation of cost estimates for implementation and O&M.

Component III: Strategic Environmental & Social Assessment (SESA) and Environmental & Social Impact Assessment (ESIA)

The SESA and the ESIA are requirements for the approval of the various projects to be implemented under the SRBDP. The SESA will address basin-wide issues, while the ESIA will address project-specific issues and will be based on the general framework provided by the SESA.

Strategic Environmental and Social Assessment (SESA):

- Identification and assessment of the overall and cumulative impacts of the SRBDP, identify appropriate measures to mitigate any negative environmental and/or social consequences of the proposed Program;
- Inclusion of the SESA recommendations in the Songwe River Basin Development Programme (Component I).

Environmental and Social Impact Assessment:

- Scoping and updating of the baseline information legal and institutional environment;
- Socio-economic impact analysis including assessment of impacts on the social, cultural and human environment of the SRBDP projects and recommend mitigation measures;
- Bio-physical environment impacts assessment of impacts of the SRBDP projects and recommend mitigation measures to reduce these potential impacts on water and other natural resources;
- Preparation of Socio-environmental Management Plan, including budgeted monitoring and evaluation programmes for both the construction and the operational phases of the SRBDP; a basin-level M&E system will be designed under the Project, managed in the short term by the PMU and later by the River Basin Commission. The M&E system, which will include hydrological monitoring will be linked to the SADC-HYCOS M&E system as well

as to the national M&E systems and will be based on the logical framework approach and supported by the Management Information System to be setup under the Project.

- Detailed design of resettlement and compensation plans for all sub-projects including cost estimates.

Component IV: Institutional Development

Establishment of a River Basin Commission (RBC):

- Review of Feasibility Study, the SADC Protocol on Shared Watercourses and all information from other available relevant sources, such as the African Network of Basin Organisations (ANBO) in Senegal;
- Examine experience from other basins and sub-basins on the establishment and empowerment of a RBO including contact with ANBO based in Dakar, Senegal;
- Preparation of a draft Convention and related texts and documents for the basin commission under the auspices of the SADC Protocol on Shared Watercourses as a fundamental strategic instrument for integrated management and development of land and water resources between the two countries;
- Validation and approval of the Convention including facilitation of the signing by Heads of State and subsequent ratification by National Assemblies;
- Facilitation of hearing, approval and signing of Convention and associated documents expert group sessions and workshops and support to the establishment of the commission.

SRBC Business Plan and capacity building for IWRM:

- Preparation of “Business Plan” for the Songwe River Basin Commission, including the financing mechanism for the functioning of the Commission;
- Development of Management Information System (MIS);
- Explore opportunities for the continuation of the Songwe River Trans-boundary Catchment Management Project (SRTCMP) and its inclusion into the new Songwe RBC;
- Preparation of training and capacity building programmes for local personnel;
- Strengthening of local institutions including action plan for communication; and basin-wide stakeholder participatory planning and decision-making;
- On the job-training of assigned counterpart specialists from Tanzania and Malawi from different disciplines in the implementation of the Project.

Component V: Project Management and Operations

- Establishment and activation of PMU and oversight bodies;
- Provision of office facilities;
- Assignment of PM;
- Procurement of equipment, vehicles, etc.;
- Assignment of counterpart staff to work with the Consultant;
- Organisation of project oversight meetings and workshops;
- Financial management, accounting, and auditing; Procurement;
- Monitoring of project implementation and reporting.

Financial Resources Mobilisation:

- Establishment of a permanent Forum for Financial Partners assisted by the Bank’s country offices in Malawi and Tanzania and the AfDB regional departments;
- Arrange 1st and 2nd Round Tables for mobilising financial resources for capital investments.

2.5 Risks

2.5.1 The risks threatening the achievement of the objectives of the Project are summarized in the LFA matrix. The different types of identified risks are examined in the paragraphs hereafter:

2.5.2 Inadequate mobilisation of funding for capital investments is one of the major risks facing capital investment programmes like the SRBDP. As a mitigation measure, a Forum for Financial Partners will be established under the Project, to promote the Programme, with the view of mobilising financial resources for the implementation of capital investments. The Bank's country offices in Malawi and Tanzania and the AfDB Regional Departments will participate in the functioning of the Forum and raising financial resources for the capital investments.

2.5.3 Inadequate cooperation by one or both of the countries in the implementation of the Project is potential threat to the attainment of its outcomes. To mitigate this risk, a binding MoU and a Convention establishing the Songwe River Basin Commission, both aimed at fostering continued cooperation between the two countries, will be prepared and signed within the framework of the Project.

2.6 Costs and Financing Plan

2.6.1 The total cost for the Project is estimated at € 5 779 515. Annex 2 gives the detailed estimated Project costs and Table 2.1 gives a summary of costs by components.

Table 2.1 Summary of Project Cost by Component in Euro

Cost Item	Comp I	Comp II	Com III	Comp IV	Comp V	Total
A. Consultancy Services						
A1 Consultancy fee	258 000	1 826 000	346 000	234 000	0	2 664 000
A.2 Travel	11 622	82 252	15 586	10 541	0	120 000
A3 Subsistence and Accommodation	37 732	267 046	50 601	34 222	0	389 600
Total A	307 353	2 175 298	412 187	278 762	0	3 173 600
B Survey, Investigation and Mapping						
B.1 Dam Site and River Channel		190 000	0	0	0	190 000
B.2 Irrigation Area	0	70 000	0	0	0	70 000
B.3 Basin Wide	7 748	94 835	75 390	7 027	0	185 000
Total B	7 748	354 835	75 390	7 027	0	445 000
C. National counterpart staff						
C.1 Basic Salary	8 500	75 000	10 500	6 000	0	100 000
C. 2. Project allowance	17 000	150 000	21 000	12 000	0	200 000
C.3 Enumerators	0	0	20 000	0	0	20 000
Total C	25 500	225 000	51 500	18 000	0	320 000
D. Project Management						
					612 400	612 400
E. Offices, Equipment, Vehicles, and Operations						
E.1 Offices Buildings and Furniture			0	0	180 000	180 000
E.2. Office Equipment	0	0	0	0	139 300	139 300
E.3 Vehicles	16 948	119 951	22 729	15 372	24 000	199 000
E.4 Operations and running cost		0	0	0	130 000	130 000
Total E	16 948	119 951	22 729	15 372	473 300	648 300
F. Training and seminars						
		0	0	0	60 000	60 000
G. Workshops & Meetings						
		0	0	0	245 000	245 000
Total (excluding contingencies)	357 549	2 875 084	561 806	319 161	1 390 700	5 504 300
Contingencies (5%)	17 877	143 754	28 090	15 958	69 535	275 215
Total (Including contingencies)	375 427	3 018 838	589 896	335 119	1 460 235	5 779 515

2.6.2 Table 2.2 and 2.3 show the global budget and funding arrangements, including the contributions from member countries, AWF and NEPAD-IPPF.

Table 2.2: Project Cost Estimate by Category in Euro

Cost Items	Goods	Works	Service	Total
A. Consultancy Services				
A1 Consultancy fee	0	0	2 797 200	2 797 200
A.2 Travel	0	0	126 000	126 000
A3 Subsistence and Accommodation	0	0	409 080	409 080
Total A	0	0	3 332 280	3 332 280
B Survey, Investigation and Mapping				
B.1 Dam Site and River Channel	0	0	199 500	199 500
B.2 Irrigation Area	0	0	73 500	73 500
B.3 Basin Wide	0	0	194 250	194 250
Total B	0	0	467 250	467 250
C. National counterpart staff				
C.1 Basic Salary	0	0	105 000	105 000
C. 2. Project allowance	0	0	210 000	210 000
C.3 Enumerators	0	0	21 000	21 000
Total C	0	0	336 000	336 000
D. Project Management	0	0	643 020	643 020
E. Offices, Equipment, Vehicles, and Operations				
E.1 Offices Buildings and Furniture	0	189,000	0	189,000
E.2. Office Equipment	146,265	0	0	146,265
E.3 Vehicles	208,950	0	0	208,950
E.4 Operations and running cost	0	0	136,500	136,500
Total E	355,215	189,000	136,500	680,715
F. Training and seminars	0	0	63,000	63,000
G. Workshops & Meetings	0	0	257 250	257 250
TOTAL COST	355,215	189,000	5 235 300	5 779 515

Table 2.3: Financial Sources in Euro

Cost Items	AWF	IPPF	GoM	GoT	Total Cost	
					Foreign	Local
A. Consultancy Services						
A1 Consultancy fee	2 797 200	0	0	0	2 797 200	0
A.2 Travel		126 000			84 000	42 000
A3 Subsistence & Accommodation		409 080			0	409 080
Total A	2 797 200	535 080	0	0	2 881 200	451 080
B Survey, Investigation and Mapping						
B.1 Dam Site & River Channel		199 500			42 000	157 500
B.2 Irrigation Area		73 500			0	73 500
B.3 Basin Wide	194 250				84 000	110 250
Total B	194 250	273 000			126 000	341 250
C. National counterpart staff						
C.1 Basic Salary	0		52 500	52 500	0	105 000
C. 2. Project allowance	210 000				0	210 000
C.3 Enumerators			10 500	10 500	0	21 000
Total C	210 000	0	63 000	63 000	0	336 000
D. Project Management	237 300		202 860	202 860	0	643 020

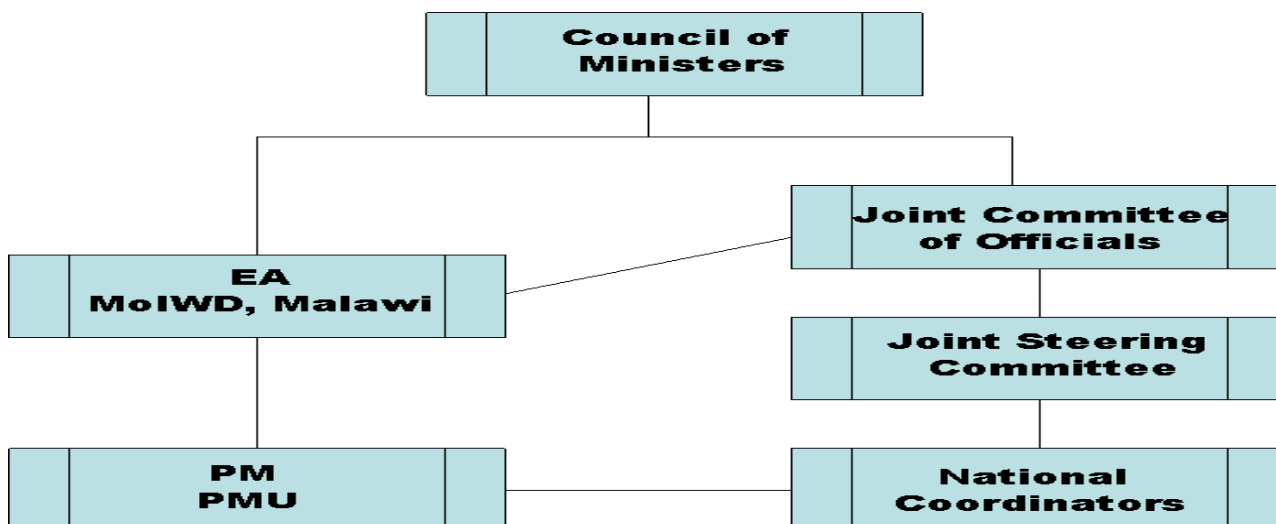
E. Offices, Equipment, Vehicles, and Operations						
E.1 Offices Buildings and Furniture				189 000	0	189 000
E.2. Office Equipment		146 265			146 265	0
E.3 Vehicles		208 950			208 950	0
E.4 Operations and running cost			68 250	68 250	0	136 500
Total E		355 215	68 250	257 250	355 215	325 500
F. Training and seminars		63 000			42 000	21 000
G. Workshops & Meetings	110 250		73 500	73 500	0	257 250
TOTAL COST	3 549 000	1 226 295	407 610	596 610	3 404 415	2 375 100
Percent of total	61%	21%	7%	10%	59%	41%

3 PROJECT IMPLEMENTATION

3.1 Recipient

3.1.1 The Government of The Republic of Malawi and The Government of the United Republic of Tanzania will be the Recipient of the Grant. The Grant Agreement will be signed by the Ministry of Finance of The Republic of Malawi on behalf of the two Governments, with the Ministry of Irrigation and Water Development of Malawi designated as the Project Executing Agency. A memorandum of understanding (MoU) attributing these roles to the Republic of Malawi will be signed between the two countries before Grant signature. The organisational structure for the implementation of the Project is shown below.

Figure 3.1: Project Management and Oversight Structure



3.2 Project Management Arrangements

3.2.1 Based on the outcomes of the deliberations during the Appraisal Mission, the Government of The Republic of Malawi and the Government of The United Republic of Tanzania have agreed on the necessary arrangement for management and governance of the implementation of the proposed Project as illustrated in Figure 3.1.

3.2.2 The Ministry of Irrigation and Water Development of The Republic of Malawi and the Ministry of Water and Irrigation of The United Republic of Tanzania are designated as the focal

ministries, with Ministry of Irrigation and Water Development of The Republic of Malawi designated as the Project Executing Agency (EA). The Joint Committee of Officials (JCO) will be the highest decision making body of the Project and that will be responsible for management and coordination of the Project and report to the Council of Ministers for policy guidance. The Joint Steering Committee (JSC) will comprise two National Coordinators and representatives from Local Governments, communities, private sector, and major stakeholder groups such as women organisations. The JCO and JSC have already been created. A Project Management Unit (PMU), headed by a full-time Project Manager (PM), will be established to undertake the day-to-day management of the Project. The terms of reference for the Project Manager are found in Annex 4. The Project Manager will be supported by counterpart staff from both countries, besides a PMU Account, a Logistics Expert and Support Staff. The two Governments will sign a legally binding MoU to formalise the implementation arrangement of the Project.

3.2.3 The Project will include the procurement of a consulting firm or consortium of firms (international and local), to carry out the services according to the ToR presented in a separate document. The Consultant will be encouraged to use a balanced team of local and international experts. In addition, the two countries will assign counterpart staff to work with the consultant's team for training and capacity building purposes. The Governments will equally recruit a Project Manager from within the two Countries through competitive bidding in accordance with the requirements of the AfDB rules and procedures.

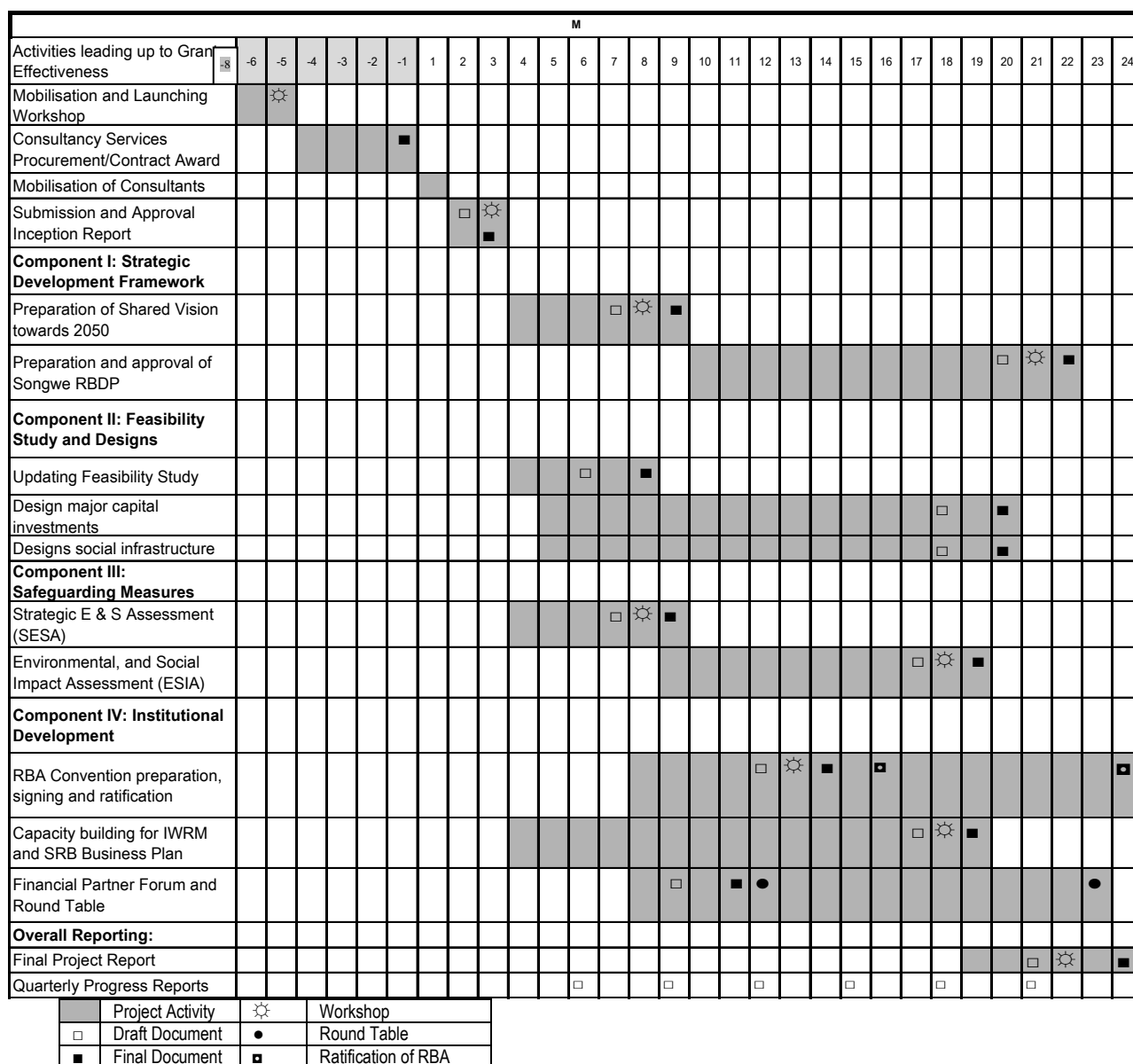
3.2.4 The two Governments agreed to locate the Project Management Office in Kyela Town on the Tanzanian side of the Basin. The Government of the United Republic of Tanzania has undertaken to provide suitable office facilities to accommodate the Project management staff and the Consultant's team.

3.3 Implementation Schedule

3.3.1 The Project is expected to be completed within a period of thirty-two (32) months, comprising 24 months for the implementation of the activities of the consortium of consulting firms and 8 months for the recruitment of the consultant and the carrying of activities leading up to Grant effectiveness.

3.3.2 The proposed schedule and milestones of main Project Components and activities are presented in Table 3.1 where M indicates the date of award of the consultancy contract. The preparatory phase with mobilisation and procurement of consultants and other preparations will start with a Launching Workshop between the Recipients, and AWF-IPPF to clarify and affirm the procedures, reporting schedules, no-objection requirements, and other applicable cooperation arrangements.

Table 3.1 Provisional Implementation and Reporting Schedule



3.4 Performance Plan

3.4.1 The overall implementation schedule is presented in Figure 3.1 and the milestones of the essential Project outputs are summarized in Table 3.2 below.

Table 3.2 Performance Plan and Milestones

Result	Critical Measurable Indicators	Targets
Mobilisation, Launching Workshop	Project mobilised Workshop successfully completed	M-5
Procurement and consultancy award	Consultancy contract awarded	M-1
Inception Report	Report Approved	M+3
Component I: Shared Vision	Shared Vision Document Approved	M+9
Component I: SRBDP	Interim SRBDP report submitted and sensitised	M+22
Component II Updated Feasibility Study and Interim Reports on detailed designs and tender	Updated Feasibility Study Report Approved; Interim (design criteria) report approved	M+21

Result	Critical Measurable Indicators	Targets
documents for major structural investments and on water related social infrastructure		
Component III: SESA	Report submitted and approved	M+9
Financial Partner Forum and Round Table	Financial Partner Forum effective and 1 st Round Table successfully completed	M+12
Component III ESIA	Report submitted and approved	M+19
Component IV: Songwe RBA Convention	RBA Convention Approved	M+14
Component IV: RBA Convention signed	Convention signed by the two countries	M+16
Component IV: RBA Convention ratifies	RBA Convention ratified by National Assemblies	M+24
Capacity building for IWRM and SRB Business Plan	Capacity building successfully implemented and business plan prepared	M+19
Financial Partner Forum and Round Table	Financial Partner Forum effective and 2 nd Round Table successfully completed	M+23
Monthly Progress Reports	Reports submitted and accepted	Monthly
Final Project Report	Draft final report and annexes submitted and presented in workshop, revised and approved	M+24

3.5 Procurement

3.5.1 All procurement of goods, works and acquisition of consultancy services financed by AWF and IPPF shall be in accordance with the respective Operational Procedures, the Bank's Rules and Procedures for the Procurement of Goods and Works or as appropriate, Rules and Procedures for the Use of Consultants, using the relevant Bank Standard Bidding Documents. Procurement arrangements are divided into categories and summarized in the Table 3.3 below.

Table 3.3: Procurement Arrangements (Amounts in Euros)

Cost Items	Source	Short List	Shopping	others	Total
A. Consultancy Services					
A1 Consultancy fee	AWF	2 797 200			2 797 200
A.2 Travel	IPPF	126 000			126 000
A3 Subsistence and Accommodation	IPPF	409 080			409 080
Total A		3 332 280			3 332 280
B Survey, Investigation and Mapping Services					
B.1 Dam Site and River Channel	IPPF	199 500			199 500
B.2 Irrigation Area	IPPF	73 500			73 500
B.3 Basin Wide	AWF	194 250			194 250
Total B		467 250			467 250
C. National counterpart staff					
C.1 Basic Salary	GoM/GoT			105 000	105 000
C. 2. Project allowance	AWF			210 000	210 000
C.3 Enumerators	GoM/GoT			21 000	21 000
Total C				336 000	336 000
D. Project Management	AWF	163 800			163 800
	GoM/GoT	479 220			479 220
Total D		643 020			643 020

Cost Items	Source	Short List	Shopping	others	Total
E. Offices, Equipment, Vehicles, and Operations					
E.1 Offices Buildings and Furniture	GoT			189 000	189 000
E.2. Office Equipment	IPPF		146 265		146 265
E.3 Vehicles	IPPF		208 950		208 950
E.4 Operations and running cost				136 500	136 500
Total E			355 215	325 500	680 715
F. Training and seminars	IPPF		63 000		63 000
G. Workshops & Meetings					
G.1 Report review and validation workshops and Resource Mobilization Roundtables	AWF			110 250	110 250
G.2 Community Sensitization and Joint Committee Meetings	GoM/GoT			147 000	147 000
Total		4 442 550	418 215	661 500	5 779 515

3.5.2 Acquisition of consultancy services shall be processed and contracts awarded, following Short-listing procedures and utilizing the quality and cost based selection (QCBS) process. The Specific Procurement Notice (SPN) for this contract shall be advertised in the UNDB on line and on the Bank's Website in addition to advertising it in at least one newspaper of national circulation in both Malawi and Tanzania, and in any official gazettes or electronic portals of these countries with free access. The Bank's Standard Request for Proposal (RFPs) document shall be used. The Consultancy Firm shall be undertaking the study in accordance with the Terms of Reference presented in Annex 3. The consultancy services are estimated at € 3 332 280 , for i) the preparation of a shared vision and a development programme for the Songwe River Basin; ii) the preparation of detailed designs; iii) the undertaking of ESIA and SESA studies; and iv) carrying out institutional development activities. The undertaking of the surveys, mapping, site investigations, and laboratory services will be part of the Consultancy assignment and are estimated at € 467,250. The consultant will be encouraged to sub-contract these services to local firms and service providers in the two countries, to the extent possible.

3.5.3 Recruitment of the services of an Individual Consultant as Project Manager, shall be undertaken in accordance with the AWF-IPPF Rules for Individual Consultants following short-listing procedures. The request for expressions of interest (EOI) shall be published in at least one newspaper of national circulation in both Malawi and Tanzania and in any official gazettes or electronic portals of these countries with free access as well as in appropriate sub-regional newspapers.

3.5.4 Services related to the organisation of training and seminars estimated at €63,000 as well services related to the organization of workshops and roundtables estimated at €110,252 will be procured locally and directly from the appropriate service providers, by comparison of prices, during the course of the implementation of the study (airlines, hotels, perdiems ...). This method of procurement is justified by the relatively small amount involved and the fact that these service providers are available locally.

3.5.5 Goods funded by the Facilities estimated to cost less than Euro 50,000 per contract and not more than Euro 450,000 in aggregate will be procured under Shopping procedures. Such contracts will be awarded for procurement of office and field equipment and vehicles. The justification of this procedure is the availability of goods and adequate suppliers locally, ensuring competition.

3.5.6 The Appraisal Mission assessed the capacity of the Executing Agency with respect to staffing, accounting and internal control systems in place and found these sufficient. Procurement will be undertaken by the PMU, which will be coordinated by a Project Manager assisted by a Project Account. In the evaluations for the recruitment of these key staff, familiarity with the Bank's procedures will be a criterion.

3.5.7 *Procurement Plan:* The Executing Agency shall prepare and submit a Procurement Plan acceptable to the AWF before effectiveness, setting forth: (a) the particular contracts for the consulting services and goods, during the life of the study; (b) the proposed mode of procurement; and (c) the related AWF review procedures (prior or post review). The Executing Agency shall update the Procurement Plan annually or as needed throughout the duration of the study. Any revisions proposed to the Procurement Plan shall be furnished to the AWF for its prior approval. The Executing Agency shall implement the Procurement Plan in the manner in which it has been approved by the AWF.

3.6 Disbursement Arrangements

3.6.1 The AWF and IPPF funds for the payment of i) National Counterpart Staff Project Allowances; ii) Project management expenditures; and iii) expenditures related to offices, equipment, vehicles and operations will be disbursed using the Special Account method of disbursement. A separate special account will be opened for the funds of each facility. The funds for the study management will be channelled through the Ministry of Finance of the Republic of Malawi, which will open two Special Accounts denominated in foreign currency in a Bank acceptable to the AWF and IPPF. The operation of the accounts will be the sole responsibility of the Ministry of Irrigation and Water Development.

3.6.2 The consultancy services fees and fees related to survey, investigation and mapping services shall be effected through the Direct Payment Method upon verification and certification of invoices by the PMU, in accordance with the Bank's disbursement rules and procedures.

3.6.3 The Special Accounts will be replenished on the condition that the preceding advances have been utilized and justified up to at least 50 percent and that all previous advances have been fully justified. A disbursement schedule based on the activity implementation schedule is presented in Table 3.4 below.

**Table 3.4: Disbursement Schedule - AWF & IPPF Grants in Euro
(Excluding Consultancy Services)**

FINANCING SOURCES	1st Tranche	2nd Tranche	3rd Tranche	Total
AWF	223 020	195 143	139 388	557 550
IPPF	167 286	146 375	104 554	418 215
Total AWF/IPPF	390 306	341 518	243 941	975 765
% of Total	40%	35%	25%	100%

3.6.4 The financial management capacity at the Ministry of Irrigation and Water Development of The Republic of Malawi was found to be adequate considering the relatively small number of financial transactions expected in the study. The Bank Regional Office in Malawi is expected to provide its support for managing the study Special Account. Payments will be made to the Consultant based on the work flow and the performance with respect to the terms of reference (ToR) of the assignment.

3.7 Accounting and Audit Arrangements

3.7.1 The Grant Agreement will include the specific accounting arrangements and requirements for the Recipient opening of a Special Account with a local Bank acceptable to AWF and IPPF from which all eligible payments will be made. The administration of the special account shall be performed by the Ministry of Irrigation and Water Development of The Republic of Malawi.

3.7.2 In the interest of fast tracking the implementation of the Project actions, AWF-IPPF will recruit and retain an auditor to perform ex post evaluation or supporting documents review and audit the Project. The AWF will require that a statement of expenditure and supporting documents review be performed and certified by the independent auditor at least annually or at any time the AWF judges appropriate, to ensure that funds have been utilized in line with the grant agreement. The costs of such audit shall be charged to AWF-IPPF and are not included in the Grant amount.

3.8 Monitoring and Supervision

3.8.1 The basis for the overall project monitoring and evaluation will be the logical framework and a series of key performance indicators, which will form part of the Grant Agreement. The indicators and means of verification shown in the LFA matrix, especially those related to activities and outputs, will serve as a basis for performance monitoring during implementation. The Project will include Baseline Studies to establish relevant performance indicators and to describe the baseline situation and associated indicators.

3.8.2 The implementation supervision of the Project will include regular correspondence with the PMU and the oversight functions, and review of the Progress Reports and Programmes of Activity submitted by the PMU to the oversight bodies and addressed by the Annual Council of Ministers Meetings. AWF-IPPF will consider at any time the need for undertaking field supervision missions to check if the specific outputs of the AWF-IPPF grant funding have been timely delivered with the required quality and if the expenditures are in agreement with the budgets and schedules. The Post Project Evaluation financed by two Facilities will examine the level of achievement in relation to the project objectives and expected results against the Baseline Studies.

4 PROJECT BENEFITS

4.1 Effectiveness and Efficiency

4.1.1 The effectiveness of the proposed Project is related to its overall performance in fulfilling the objectives and expected outcomes stated in the LFA Matrix. It has been noted that the quality of the project preparation and the funding application hold a high standard and was further strengthened during the appraisal. In conclusion, the proposed Project is likely to be implemented with the necessary efficiency required by AWF and IPPF.

4.2 Sustainability

4.2.1 The Project design places specific emphasis on environmental and social safeguarding by means of the Environmental and Social Impact Assessment and the Strategic Environmental and Social Assessment. In addition the SRBDP will be actively addressing environmental and social development issues through the following programme components: “Natural Resources and Land Use Management Programme” and the “Community Development Programme” addressing poverty alleviation, community needs, health and education, gender issues in the context of social development. The River Basin Commission to be established should replace the project management unit and continue to manage the planned investments following, this study.

4.3 Economic and Financial Viability

4.3.1 The economic viability of the Project and its contribution to economic development including revenue generation and creation of local employment opportunities are fundamental factors that have received special attention. 80% of the proposed investment costs of the Programme related to the multipurpose dams and hydropower development, and sales of electricity will be the main source of income. In addition, the dams will generate several multipurpose benefits connected to flood control, irrigation, water supply, tourism and fisheries as well as sustainable water shed management.

4.3.2 According to the Feasibility Study Report of November 2003 (Section 13), the revenue from electricity sales of the lower dam hydropower plant will be about 40 million USD/year (after 5 years) and: 90 million USD/year (after 10 years) from all three dams. The SRBDP will pay attention to the legal and financial arrangements for management of the joint capital investments, especially the sharing of costs and benefits from the hydropower schemes and the establishment of a Forum of Financial Partners, for financial mobilisation that will be in place during the initial phases of the Project.

4.3.3 The economic analysis of the Feasibility Study, following the investigation of 10 alternatives, including the “without project” option, shows that the investment costs for the recommended option including three multi-purpose dams, hydropower (HP), flood control (FC) and river stabilisation is about USD 478 million, a net present value (NPV) of USD 56 million, and an economic internal rate of return (EIRR) in the order of 11.5% (Table 4.1). Hence, the estimated EIRR is above the requirement for public projects, which is 10%.

4.4 Power sector significance of the Project

4.4.1 Table 4.2 indicates that the total estimated electricity production from the three Songwe River hydropower schemes is 1,380 GWh/y i.e. in the order of 37% of the current hydropower production of the two countries combined (3,727 GWh/y) This indicates that the hydropower development under the Songwe RBDP will be an important contribution to the electricity production in the two countries. The power generated will serve the two countries, which have an average access to electricity of only about 10% and the power will equally be connected to the regional electricity grid and sold to other countries in the region, for added benefits.

Table 4.1 Significance of the Songwe Hydropower Development⁵

	Current Situation			Songwe Hydropower			
	Malawi (2005)	Tanzania (2001)	Total	Total	Lower	Middle	Upper
Installed Capacity (MW)				340	150	160	30
Hydropower Production (GWh/y)	1,370	2357	3,727	1,380	630	630	120

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

5.1.1 The Project is aligned with the policies, investment strategies and programs for food security and poverty alleviation in the two countries and the SADC Protocol on Shared Watercourses. The project is also in compliance with the objectives and priority areas described in

⁵ SOURCE: 2004 CIA WORLD FACTBOOK
http://www.immigration-usa.com/wfb2004/tanzania/tanzania_economy.html

mandate and procedures of the African Water Facility and it supports the Bank Group's Strategy which aims to promote economic cooperation and regional integration of RMCs.

5.1.2 The Project is an important and well justified initiative for AWF and NEPAD-IPPF funding considering the many trans-boundary water challenges facing the Songwe River Basin, shared between Tanzania and Malawi. The Project will enable effective trans-boundary water governance and development of the shared water infrastructure. This will have bearings on the political, economic, and public activities in the Basin and is expected to contribute to enhanced food security and agricultural outputs, hydropower production, flood attenuation, river course stabilisation, water supply and sanitation, fisheries, and mitigation of the effects of climate change and variation.

5.1.3 An essential feature of the AWF-IPPF supported Project is to facilitate the establishment of the Songwe River Basin Commission, which once established will be directly engaged in the implementation of the Songwe River Basin Development Programme including the construction of priority hydraulic infrastructure and future O&M of the common assets shared between the two countries.

5.1.4 Both Facilities have identified support to improved trans-boundary water resources management and development as a priority area. Assessments of the eligibility of the Recipient and the Project is found to be in accordance with the criteria laid down in Procedures and Guidelines of the two Facilities and the anticipated efficiency, effectiveness and sustainability of the Project are found acceptable. The project has a duration of 32 months, of which 8 months will be attributed to project mobilisation and procurement of a Consultant to undertake the detailed design and investment preparation studies.

5.2 Recommendations

5.2.1 Based upon a critical assessment of the relevance, effectiveness, and sustainability of the Project, as well as the credibility and capacity of the two Recipient countries, it is recommended that a grant not exceeding €3,549,000 from the AWF and € 1 226 295 from the NEPAD-IPPF be extended to the Governments of the United Republic of Tanzania and the Republic of Malawi. These amounts represent 82% of the total project cost of € 5 779 515.

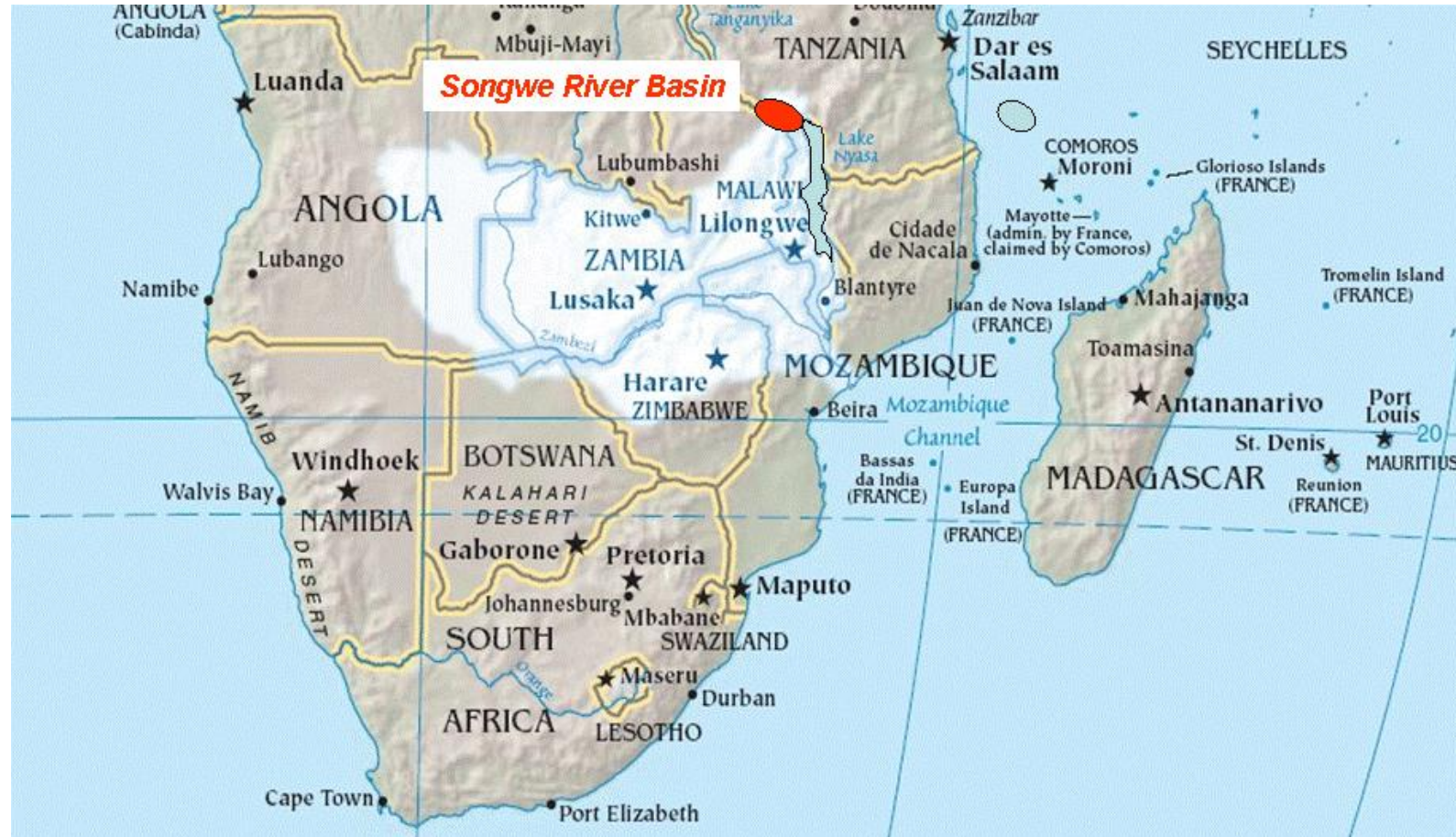
5.2.2 The signature of the Grant Agreement will be subject to the signing of the Memorandum of Understanding (MoU), acceptable to the Bank, between the two Governments (§3.1.1).

5.2.3 The Grant Effectiveness will be subject to the two Governments undertaking to provide furnished suitable office facilities at Kyela for the PMU and the Consultant.

5.2.4 The conditions precedent to the first disbursement are: (i) the appointment of a Project Manager, acceptable to the Bank; (ii) the opening of two special accounts for the disbursement of the AWF and NEPAD PPF Grants and the designation of signatories acceptable to the Bank. Other conditions for subsequent disbursement are: (ii) evidence of transfer of funds from the two Governments to the Project account; (iii) an undertaking on the assignment and deployment of the counterpart staff to Kyela.

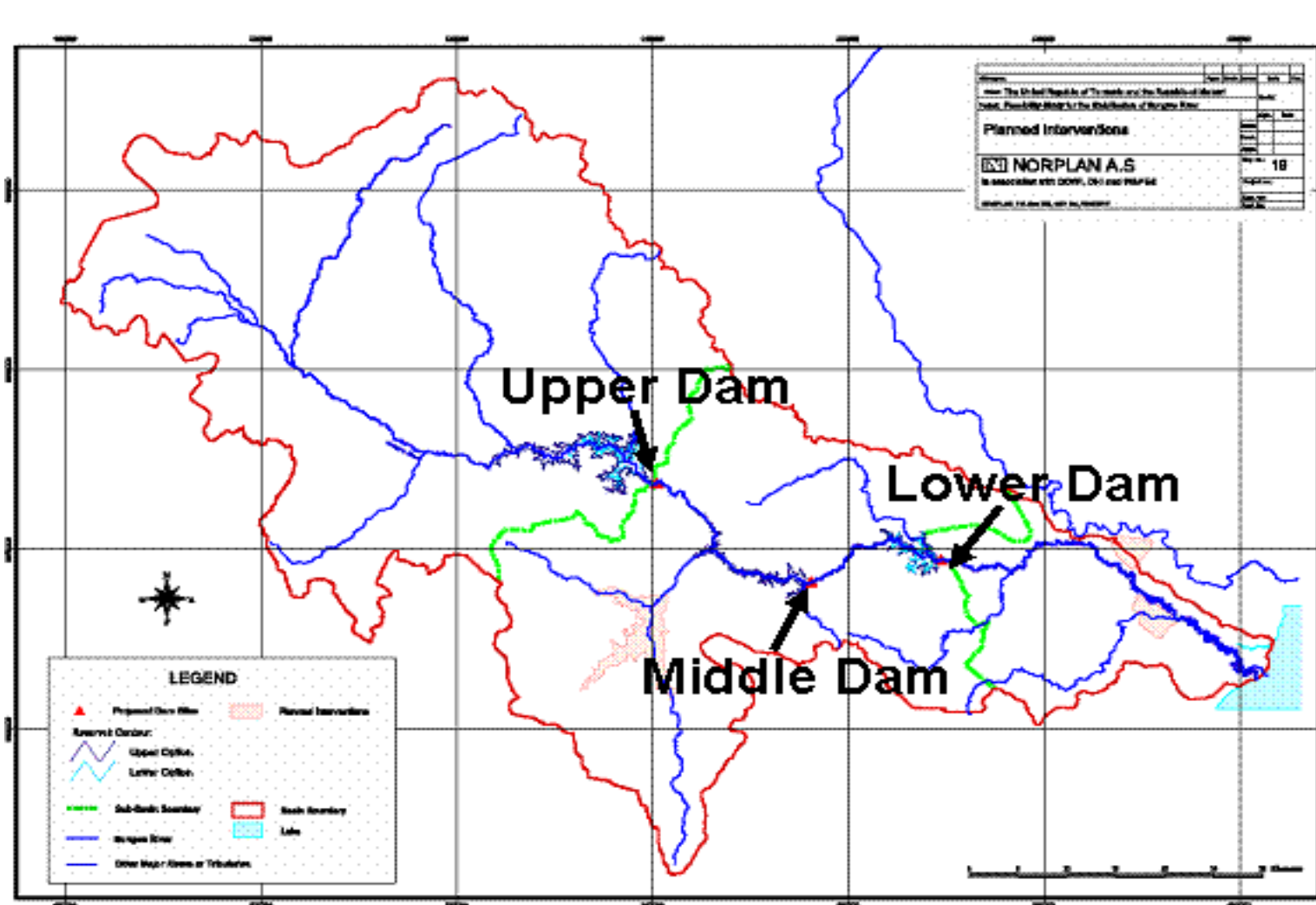
ANNEXES

ANNEX 1: SONGWE RIVER BASIN LOCATION AND BASIN MAP



Disclaimer

These maps have been drawn by the African Development Bank Group exclusively for the use of the readers of this Appraisal Report to which it is attached. The names used and the borders shown do not imply on the part of the Bank and its members any judgment concerning the legal status of a territory nor any approval or acceptable of these borders



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ANNEX 2: PROJECT COST ESTMATE IN EURO

A2.1: CONSULTANT STAFF REQUIREMENTS (Man-Months)

	Expertise	Comp I		Component II			Comp III	Comp IV	TOTAL
		Vision 2050 & SRBDP	Dams & HP	River Stabilization	Irrigation & Drainage	Other infra structure	SESA & ESIA	Institutional Development	
A. CONSULTANT STAFF									
1.	Senior Water Resources Engineer - Team Leader	4	4	2	4	3	3	4	24
2.	Water Resources Engineer	3	2	2	2				9
3.	Water Supply & Sanitation Engineer					5			5
4.	Geologist/Geomorphologist		6	3	2	1			12
5.	Geotechnical Engineer		6	2		1			9
6.	Road Engineer					5			5
7.	Hydrologist	2	4	2					8
8.	Hydraulic Engineer		3	4	4	1			12
9.	Chief Dam Design Engineer		3	1					4
10.	Dam Design Engineer		12						12
11.	Electrical Engineer		6			4			10
12.	Hydropower Engineer/Mechanical Engineer	1	6			1			8
13.	Soil expert				11		1		12
14.	Irrigation and Drainage Engineer	1			12		2	1	16
15.	Agronomist	1			5	2	1		9
16.	Environmental Expert	1					12	1	14
17.	Sociologist/Gender Expert	2	2	1	2	2	4	1	14
18.	Land Use Planner	1		2	2	5	1	1	12
19.	Fisheries expert		1	2			1		4
20.	Tourism Expert					2	1		3
21.	Economist Business Planner	4	3		4	2	1	2	16
22.	Financial analyst		2		2				4
23.	International Water Rights Expert	1						4	5
24.	Institutional Expert						1	5	6
25.	GIS Specialist	1	2	2	2	2	2	1	12

A SUB TOTAL	23	65	24	54	27	31	21	245
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A.2.2 : NATIONAL COUNTERPART STAFF REQUIREMENT (FROM MALAWI AND TANZANIA) in MM

	Expertise	Comp I	Component II			Comp III	Comp IV	TOTAL	
		Vision 2050 & SRBDP	Dams & HP	River Stabilization	Irrigation & Drainage	Other infra structure	SESA & ESIA		Institutional Development
1	Water Resources Engineer	4	4	2	4	3	3	4	24
2	Hydropower Engineer		8						8
3	Hydrologist	3	4	2			1		10
4	Hydraulic Engineer		3	3	4				10
5	Electrical Engineer		6			6			12
6	Geotechnical Engineer		6	2	2				10
7	Sociologist/Gender Expert	2	2	2	2	2	2		12
8	Environmentalist Expert	2					10		12
9	Land Use Expert				2	4	2		8
10	Soils Scientist				12				12
11	Agronomist				8				8
12	Irrigation and Drainage Engineer				12	2			14
13	Legal Expert						1	5	6
14	Land Surveyors		2		2	6			10
15	Civil Engineer		4	2	4	2			12
16	Economist	4	2		6	4		2	18
17	GIS Specialist	2	2	2	2	3	2	1	14
B. TOTAL COUNTERPARTS		17	43	15	60	32	21	12	200

A2.2.3: PROJECT MANAGEMENT AND COORDINATION STAFF REQUIREMENT in MM

43	Project Manager PMU								30
44	Logistics Expert								30
45	PMU Accountant								30
46	Support Staff								90
47	Coordinator Malawi								30
48	Coordinator Tanzania								30
C. TOTAL PROJECT MANAGEMENT									240

A2.4 : Project Cost Estimate IN EUROS

ITEM		Unit	Foreign	Local	Foreign	Local	Foreign	Local	Total Cost	Funding source
	A. Consultancy Services									
	A1 Consultancy fee									
1	Senior Water Resources Engineer - Team Leader	MM	24		12 000		288 000	0	288 000	
2	Water Resources Engineer	MM	14		10 000		140 000	0	140 000	
3	Geologist/Geomorphologist	MM	12		10 000		120 000		120 000	
4	Geotechnical Engineer	MM	14		10 000		140 000		140 000	
5	Hydrologist	MM	8		12 000		96 000		96 000	
6	Hydraulic Engineer	MM	12		12 000		144 000		144 000	
7	Chief Dam Design Engineer	MM	4		12 000		48 000		48 000	
8	Dam Design Engineer	MM	12		10 000		120 000		120 000	
9	Electrical Engineer	MM	10		10 000		100 000		100 000	
10	Hydropower Engineer	MM	8		12 000		96 000	0	96 000	
11	Soil expert	MM	12		10 000		120 000	0	120 000	
12	Irrigation and Drainage Engineer	MM	16		12 000		192 000	0	192 000	
13	Agronomist	MM	9		10 000		90 000	0	90 000	
14	Environmental Expert	MM	14		12 000		168 000	0	168 000	
15	Sociologist/Gender Expert	MM	14		10 000		140 000	0	140 000	
16	Land Use Planner	MM	12		10 000		120 000	0	120 000	
17	Fisheries expert	MM	4		10 000		40 000	0	40 000	
18	Tourism Expert	MM	3		10 000		30 000	0	30 000	
19	Economist Business Planner	MM	16		12 000		192 000	0	192 000	
20	Financial analyst	MM	4		10 000		40 000	0	40 000	
21	International Water Rights Expert	MM	5		12 000		60 000	0	60 000	
22	Institutional Expert	MM	6		10 000		60 000	0	60 000	
23	GIS Specialist	MM	12		10 000		120 000	0	120 000	
	Sub Total A.1						2 664 000	0	2 664 000	AWF
	<i>Total Staff months:</i>		245	0						
	A.2 Travel									
1	International Air Travel (Return tickets)	No	40	0	2 000		80 000	0	80 000	
2	Local travel	L/S	0	1		40 000	0	40 000	40 000	
	Sub Total A.2						80 000	40 000	120 000	IPPF

	A3 Subsistence and Accommodation									
1	Subsistence allowance	MM	0	243		1 200	0	291 600	291 600	
2	Local Accommodation	MM	0	245		400	0	98 000	98 000	
3	Sub Total A.3						0	389 600	389 600	IPPF
4	Total A						2 744 000	429 600	3 173 600	AWF+IPPF
	B Survey, Investigation and Mapping									
	B.1 Dam Site and River Channel									
1	Core drilling and testing	L/S		1		80000	0	80 000	80 000	IPPF
2	Seismic refraction surveys	L/S	1		50 000		40 000	0	40 000	IPPF
3	Geotechnical investigation	LS		1		40 000	0	40 000	40 000	IPPF
4	Geological laboratory test & analysis	L/S		1		30 000	0	30 000	30 000	IPPF
5	Sub Total B.1						40 000	150 000	190 000	
	B.2 Irrigation Area									
6	Soil laboratory test and analysis	L/S		1		20 000	0	20 000	20 000	IPPF
7	Water quality tests	L/S		1		10 000	0	10 000	10 000	IPPF
8	Soil survey and mapping	LS		1		40 000	0	40 000	40 000	IPPF
	Sub Total B.2						0	70 000	70 000	
	B.3 Basin Wide									
9	Mapping, Imagery, Aerial photos	LS		1	80 000	0	80 000	0	80 000	AWF
10	Topographic survey and Mapping	LS		1		40 000	0	40 000	40 000	AWF
11	Environmental Laboratory services	LS		1		25 000	0	25 000	25 000	AWF
12	Socioeconomic survey	LS		1		40 000	0	40 000	40 000	AWF
13	Sub Total B3						80 000	105 000	185 000	
14	Total B						120 000	325 000	445 000	
1	C. National counterpart staff									
2	C.1 Basic Salary	MM		200		500	0	100 000	100 000	GoM/GoT
3	C. 2. Project allowance	MM		200		1 000	0	200 000	200 000	AWF
4	C.3 Enumerators	LS		1		20 000		20 000	20 000	GoM/GoT
5	Total C						0	320 000	320 000	
	D. Project Management									
1	<i>Project Manager</i>	MM		24		6 500	0	156 000	156 000	AWF
	PMU Accountant	MM		28		2 500	0	70 000	70 000	AWF
2	Coordinator Malawi	MM		15		4 000	0	60 000	60 000	GoM/GoT
3	Coordinator Tanzania	MM		15		4 000	0	60 000	60 000	GoM/GoT

4	Administration and logistics	MM		28		1 500	0	42 000	42 000	GoM/GoT
5	Cashier	MM		28		1 000	0	28 000	28 000	GoM/GoT
6	Store Keeper	MM		28		800	0	22 400	22 400	GoM/GoT
7	Secretaries (2)	MM		60		1 000	0	60 000	60 000	GoM/GoT
8	Drivers	MM		120		700	0	84 000	84 000	GoM/GoT
10	Messengers/cleaners	MM		60		500		30 000	30 000	GoM/GoT
11	Total D						0	612 400	612 400	
1	E. Offices, Equipment, Vehicles, and Operations									
2	E.1 Offices Buildings and Furniture									
3	Rehabilitation Existing Offices	m2		100		100	0	10 000	10 000	
4	Construction New Office Block	m2		400		300	0	120 000	120 000	
	Office furniture	LS		1		50 000	0	50 000	50 000	
5	Sub Total E.1						0	180 000	180 000	GoT
	E.2.Office Equipment									
1	PC	Unit	8			2 000	16 000	0	16 000	
2	Laser Printer	Unit	3			2 500	7 500	0	7 500	
3	Flat Bed Plotter with 8 Pen	Unit	2			2 500	5 000	0	5 000	
4	Desk Top Plotter with 8 Pen	Unit	2			1 500	3 000	0	3 000	
5	Digitizer	Unit	2			2 500	5 000	0	5 000	
6	Desk Top Digitizer	Unit	2			200	400	0	400	
7	UPS	Unit	4			600	2 400	0	2 400	
8	HD Photocopier	Unit	2			5 000	10 000	0	10 000	
9	Software	LS	2			10 000	20 000	0	20 000	
10	Field investigation equipment	LS	1			40 000	40 000	0	40 000	
11	Camping Equipment	LS	1			10 000	10 000	0	10 000	
12	Office Supplies	LS	1			20 000	20 000	0	20 000	
13	Sub Total E.2						139 300	0	139 300	IPPF
	E.3 Vehicles									
1	4 WD Station Wagon	No	2			25 000	50 000	0	50 000	
2	4 WD Double Cabin	No	4			20 000	80 000	0	80 000	
3	4 WD Single Cabin	No	3			15 000	45 000	0	45 000	
4	Saloon	No	2			12 000	24 000	0	24 000	
	Sub Total E.3						199 000	0	199 000	IPPF
	E.4 Operations and running cost									

1	Office running cost	Mo		30		500	0	15 000	15 000	
2	Communication cost	Mo		24		500	0	12 000	12 000	
3	Report Production	LS		1		40 000	0	40 000	40 000	
4	Reports distribution	LS		1		15 000	0	15 000	15 000	
5	Fuel and maintenance	Mo		24		2000	0	48 000	48 000	
6	Sub Total E.4							130 000	130 000	GoT/GoM
	Total E						338 300	310 000	648 300	
	F. Training and seminars									
	Short term staff training	No	8	0	5 000	0	40 000	0	40 000	
	On site seminars	L/S	0	1	0	20 000	0	20 000	20 000	
	Total F						40 000	20 000	60 000	IPPF
	G. Workshops & Meetings									
1	Report review and validation workshops	No		4	0	15 000	0	60 000	60 000	AWF
2	Resources mobilisation round tables	No		3	0	15 000	0	45 000	45 000	AWF
3	Community Sensitization	No		4	0	10 000	0	40 000	40 000	GoM/GoT
4	Joint Committee meetings	LS		4	0	25 000	0	100 000	100 000	GoM/GoT
5	Total G						0	245 000	245 000	
	Total Base Cost						3 242 300	2 262 000	5 504 300	
1	Contingency (5% of base cost)						162 115	113 100	275 215	
	TOTAL PROJECT COSTS						3 404 415	2 375 100	5 779 515	

ANNEX 3: DRAFT TERMS OF REFERENCE

TERMS OF REFERENCE

**SONGWE RIVER BASIN DEVELOPMENT
PROGRAMME (SRBDP)**

DETAILED DESIGN AND INVESTMENT PREPARATION

**A JOINT PROGRAMME BETWEEN THE GOVERNMENTS OF
THE UNITED REPUBLIC OF TANZANIA AND THE REPUBLIC
OF MALAWI**

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PART A: INTRODUCTION AND OBJECTIVE

1.0 BACKGROUND

1.1 Origin of the Project

The Songwe River Basin has an area of about 4,200 square kilometers, the area of which covers parts of Chitipa and Karonga Districts in Malawi, Kyela, Ileje, Mbozi and Mbeya Districts in Tanzania. The basin offers such opportunities as agricultural development; hydropower; fisheries; water supply and sanitation, and recreation. On the other hand, the basin has its own challenges such as higher population densities which are above the national averages, frequent flooding during the rainy seasons which usually affects up to about 15,000 hectares and about 52,000 people in the basin and a meandering river course (mostly during floods) which leads to the shifting Malawi/Tanzania boundary.

The Project originated in 2001 when the two countries engaged in a Preliminary Study in 2001 followed by a Feasibility Study in 2002-2003 funded by the Nordic Development Fund (NDF). The initial rationale for the Project was to address frequent shifting of the international border between the two countries due to the random meandering of the lower parts of the river. Hence, the preliminary study basically focused on developing feasible options for the stabilization of the Songwe River course. The Songwe River Course Stabilization Project, which has led to the Songwe River Basin Development Programme, is viewed by the two Governments as one of the most successful bi-lateral programmes so far under implementation in accordance with the General Cooperation Agreement of 1991

During the review of the preliminary study report, the two Governments realised that it was necessary to consider the structural investments for river stabilisation in a broader basin development perspective. It was therefore decided to upgrade the Project into a basin-wide and comprehensive Songwe River Basin Development Programme (SRBDP) aimed to support economic growth and poverty alleviation in the entire basin. The Feasibility Study identified potential areas of intervention in terms of the development of irrigated agriculture, hydropower production, flood control, stabilisation of the river course, upgrading of water supply, fisheries development, promotion of tourism and the need to create an enabling institutional environment for joint management of the shared water resources.

1.2 Problem Definition

In general, the economy of the basin highly depends on water related sectors and the above cited problems need to be addressed through integrated trans-boundary water resources management and development.

For several decades, the basin has been subject to considerable rural settlements development and expanding urban centres resulting in increasing pressure on the basin's land and water resources. Up to 80%, of the population of the Songwe River Basin, consists of rural poor. Some of the main problems and challenges facing the basin that will be addressed by the Project comprise:

1. Frequent shifting of the international border between the two countries in the river delta zone due to the random meandering of the river, that can be alleviated by flood control and river course stabilization investments;
2. Frequent flooding in the lower basin;
3. Unstable access to fish resources that can potentially be mitigated by fish farming;

4. Deforestation, bush burning, and unsuitable cultivation practices in the upper reaches of the river causing erosion and increased sediment transport;
5. Untapped agriculture production potential due to unregulated river flow with large flow fluctuation in terms of floods and droughts;
6. A considerable part of the Basin Population is lacking access to safe water supply e.g. 30% in the Lower Basin, 40% in the Middle and 50% in the Upper Basin;
7. Considerable unused hydropower development potential that could contribute to economic growth and alleviation of the severe electricity shortages facing the two countries.

1.3 Project Description and Objective

The Project will prepare and initiate a Songwe River Basin Development Programme (SRBDP) within the framework of a long term Shared Vision 2050 as illustrated in the figure below.

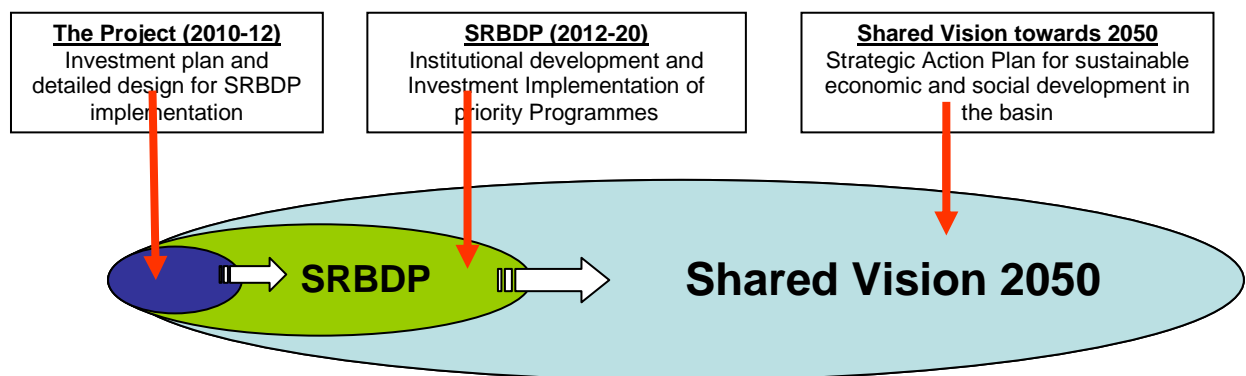


Figure 1: Strategic Framework for Long-term Integrated Development of Songwe RB

The Goal of the Project is to contribute to improved living conditions of the basin population and the socio-economic development in the two countries. The objective of the Project is to prepare detailed designs and financial mobilisation for capital investments and to strengthen trans-boundary water resources management in the Songwe River Basin.

1.4 Scope of Assignment:

The consultant shall among other tasks be required to prepare design drawings, cost estimates and tender documents. The Assignment comprises the following elements:

- Inception, Methodology, and Design Criteria;
- Component I: Preparation of a Shared Vision 2050 and a Songwe River Basin Development Programme (SRBDP);
- Component II: Updating of the Feasibility Study and preparation of Detailed Designs for capital investments;
- Component III: Strategic Environmental & Social Assessment (SESA) and Environmental & Social Impact Assessment (ESIA);
- Component IV: Institutional Development.

PART B: COMPONENT I: PREPARATION OF SHARED VISION 2050 AND SONGWE RIVER BASIN DEVELOPMENT PROGRAMME (SRBDP)

1.0 SCOPE OF WORK FOR THE PREPARATION OF A SHARED VISION 2050

1.1 Review of Existing Information

In connection with the Inception Phase, the Consultant shall:

- a) Review the Feasibility Study Report and all other available, relevant reports, data and information related to the Songwe River Basin Development Programme (SRBDP);
- b) Identify and recommend which detailed studies will be necessary in order to fully complete the feasibility study report as well as the detailed design and programming;
- c) Identify and undertake any additional analysis and investigations identified in the Inception Report.

1.2 Shared Vision Formulation

The Consultant shall:

- a) Prepare a plan for the development process of a Shared Vision 2050 with the involvement of communities and representative authorities since the sustainability of the development interventions will greatly depend on the support and understanding of the local and regional stakeholders, including the private sector;
- b) Conduct the process for a basin-wide and participatory formulation of the “Shared Vision” for the development of the Basin having in mind that such a process will greatly contribute to achieving the needed acceptance and support from local communities, where local communities and leaders will play a pivotal role; to the forthcoming activities and investments;
- c) Submit a final Shared Vision 2050 document after it has been sensitised with multiple stakeholders and authorities.

2.0 SCOPE OF WORK FOR THE SONGWE RBDP

The updating and implementation of a SRBDP takes into consideration the Shared Vision 2050, which aims to contribute to the improvement of the living conditions of the Basin population. The Programme shall respond to a wide range of challenges and opportunities that concern the inhabitants of the Basin.

2.1 Review of Existing Information

In connection with the Inception Phase, the Consultant shall:

- a) Review the Feasibility Study Report, the outputs of the Swiss (SDC) funded Songwe River Transboundary Catchment Management Project (SRTCMP), and other available, reports, data and information related to the SRBDP;
- b) Describe required additional analysis and investigations;

2.2 Natural Resources and Land Use Management Programme

This part of the consultancy will include, but not necessarily be limited to, the following activities:

- a) Updating of the Baseline survey of the Bio-physical Environment of the Basin presented in the Feasibility Report with a practical focus on project-relevant issues;
- b) Examine the applicable laws and current practices concerning land use planning including security of tenure with special attention to gender relations as important aspects of water resource management and sustainable socio-economic development in the basin;
- c) Develop methodology for addressing challenges and opportunities related to cadastral land surveying, property rights, compensation arrangements, and resettlement issues; and propose and implement a pilot to demonstrate and document this methodology in one of the Project's high impact areas;
- d) Review the activities and outputs of the SRTCMP and explore opportunities for the further continuation of this Project including adaptation and inclusion of its systems and atlas into the operations of the new Songwe River Basin commission;
- e) Prepare a Songwe River Basin Natural Resources and Land Use Management Programme under the auspices of the SRBDP based on the outcomes of the above activities.
- f) Design an appropriate Water Resources Management Information System (MIS) for the basin that can be co-shared by the two Governments. The consultant will prepare the plans and specifications of the MIS and its supporting data base systems, for the operation and management of the water resources, flood control and management.
- g) Procure and use digital orthophoto maps of the whole basin to support land use planning, land registration and the design of infrastructure under other projects in the programme;
- h) Prepare a plan for land consolidation and formalization of tenure in the basin in conformity with the applicable laws for the two countries;
- i) Prepare the land information management system for the basin based on the existing projection systems used by the two countries.
- j) Carry out investigations to establish soil characteristics that determine optimum use of the different types of land in the basin;
- k) Prepare detailed land use plans for all villages which will be directly impacted by the programme intervention; and
- l) Link up with other projects to identify people who will be adversely affected by those projects and prepare compensation schedules.

2.3 Community Development Programme

Poverty Profile

- a) Carry out a baseline survey with focus on livelihoods, assets, access and control etc.
- b) Conduct a demographic update;
- c) Identify the regional poverty line as compared to the national poverty line of the two countries;
- d) Identify resource gaps, such as credit, training, literacy, extension and other services, etc. and suggest appropriate and effective poverty reduction strategies and mechanisms needed in place;
- e) Examine on last census of the two countries including poverty data;
- f) Examine other relevant poverty mapping activities if any;
- g) Summarise the findings in quantitative and qualitative information on the socio-economic characteristics of poor family/individual in terms of education, health, access and ownership of resources, land, technology, etc.

Population

- a) Describe the socio-cultural, institutional, historical and political context in the region;

- b) Present qualitative descriptions and quantitative indicators of development trends relevant to the Project, such as significant demographic changes, patterns of asset ownership and livelihoods, external political or economic environment, etc.;
- c) Describe the most significant social and cultural features that differentiate social groups in the Basin and describe their vested interests in the proposed SRBDP and associated sub-projects;
- d) Identify and analyse the evolving demographic situation;
- e) Carry out an analysis of the civil and traditional political background relevant to the study area.

Participatory Community Needs Assessment

- a) Assess and analyse, within a gender disaggregated framework, the community needs and priorities expressed by the people;
- b) Document the key priorities of the communities, particularly those of most vulnerable and poor including youth and types of existing social and economic infrastructure in the communities;
- c) Examine existing traditional and formal institutional arrangements for addressing development issues;;
- d) Analyze mechanisms at the village level to ensure viability and sustainability for organization and management of the local level institutions.
- e) Assess peoples' perception concerning the need for flood attenuation or if they are satisfied living in flooding areas:

Health and Education

- a) Assess the current provision of basic education (formal and non-formal), health and nutrition status of the people in the region, with particular focus on malaria, HIV/AIDS, drinking water, hygiene and sanitation;
- b) Provide a draft plan of action and mitigation strategies for the relevant health issues to be addressed in the sub-project. This should be done in close collaboration and consultation with the communities and the local government.

Gender Issues and Analysis

- a) Analyse gender roles, relations, socio-economic issues and division of labour, in the region, with specific reference to the agriculture sector;
- b) Describe and assess institutions, NGOs and other agencies promoting gender mainstreaming in agriculture sector and development; analyse gender issues regarding availability of and access to extension, credit and other productive facilities to women;
- c) Identify activities to improve the position of women and gender mainstreaming through the SRBDP;
- d) Review the relevant national and regional legislation and regulations pertinent to the promotion of gender equity in the sub-project. Specific attention will be given to laws and regulations influencing the access of poor and vulnerable groups to goods, services and opportunities.

2.4 Economic Development Programme

The SRBDP will provide economic and business development opportunities not present in the Basin today as well as opportunities for improving existing economic activities.

Basic Assessment and Modelling

- a) Develop economic planning and consensus building tools; and Improvement of agricultural systems;
- b) Promote networking and organization of potential businessmen/entrepreneurs; by incorporating the national and local business communities in the Shared Vision process;
- c) Develop a basin-wide multi-sectoral economic assessment aimed at upgrading the information on the regional economy;

- d) Obtain key economic indicators for the Basin based on disaggregate national and regional statistics (since, there are no specific statistics for the SRB);
- e) Elaborate a “Regional Social Accounting Matrix” for the Songwe River Basin as a statistical base for the elaboration of an economic model for the regional economy: “the Songwe River Basin Economic & Natural Resources Model” as a river basin-wide multi-sectoral economic model to examine indirect economic, social and environmental effects of different policies and projects at the basin-wide level;
- f) Make an assessment of the impacts of the upgrading of the road network and new river crossing opportunities in terms of improved communication, access to markets, enhanced income generation potential of local people, and social interactions across the river;
- g) Carry out modelling and assessment of the direct and indirect economic outcomes of the SRBDP interventions on the basin-wide economy;
- h) Use the above model to undertake an assessment of economic development opportunities in the Basin by simulating different development scenarios;
- i) Prepare a Songwe River Basin Economic Promotion Programme under the SRBDP to promote investments and economic activities.

Framework Plan for Management of Joint Assets

- a) Prepare a Framework Plan for the future management of joint infrastructure and commercial operations including: (i) the guiding principles; (ii) modalities; and (iii) associated legal agreements and administrative instruments as a basis for common management of the new infrastructure owned by the two countries under the SRBDP;
- b) Facilitate approval of the Framework Plan that will serve as a guide for the negotiations and signing of each particular agreement that regulates the mutual responsibilities and profits.

Business Plan for Electricity Production and Marketing

- a) Establish the forecasts of electricity demand and supply in the two countries;
- b) Undertake a local, regional and national market analysis of the hydropower and transmission lines options for the optimisation, timing and appropriate staging of the hydropower development;
- c) Analyse alternative viable arrangements for (i) sharing the produced electricity including arrangements for “export” to the regional or national grids and (ii) provision of electricity for rural electrification within the basin;
- d) Make an assessment of the challenges and opportunities related to different power transmission and power trade alternatives;

Facilitate strategic dialogues between the authorities of the two countries in the view to create a joint policy, strategy and planning platform for the transmission and use of produced electricity taking into account the energy legislation, policies and development strategies in the two countries and their engagement in the East African and the Southern Africa Power Pools.

Investment Plan

- a) Prepare a phased investment plan for the implementation of all structural and non-structural investments under the SRBDP;
- b) Prepare a financial plan based on the results of the Financial Partnership Forum initiative

2.5 SRBDP Report

- a) Prepare a SRBDP Report including the above four sub-Programmes (Natural Resources and Land Use Management, Community Development, and Economic Development);
- b) Define the applicable tendering methods for structural investments and services concerning procedures, preconstruction activities, logistics etc.;

- c) Prepare a project implementation schedule highlighting the key and major events and critical activities;
- d) Design a programme management structure that shall be embedded in the future Songwe River Basin commission, which will be responsible for the overall promotion and managing the implementation of the SRBDP.

PART C: COMPONENT II: UPDATING FEASIBILITY STUDY, DETAILED DESIGN, AND PREPARATION FOR CAPITAL INVESTMENTS

1.0 SCOPE OF WORK FOR UPDATING OF THE FEASIBILITY STUDY

As indicated in the ToR the relevant parts of the Feasibility Study will be examined under the Review of Existing Information sections of the different components. Hence, the main task of this activity will be to synthesise the outputs of the single reviews and prepare the updated Feasibility Study Report.

2.0 SCOPE OF WORK FOR DETAILED DESIGN OF THE LOWER DAM, HYDROPOWER AND ASSOCIATED INFRASTRUCTURES

Hydropower is the major contributor to the positive economic viability of the entire SRBDP. The Feasibility Study examined three potential dams. The Project will include detailed design and tender documents up to bankable level for the Lower Dam. Concerning the Middle and Upper dams and related hydropower and infrastructure hydropower plants the detailed designs will be carried out at a later stage of the SRBDP so for these two schemes the Project will include the updating of the feasibility study information.

The consultant will analyse environmental, hydrological and climatic data for the region to establish the trend over the last thirty years and incorporate the risk in the design of the structures for optimum economy and climate resilience in line with the African Development Bank's Climate Risk Management and Adaptation Strategy.

In these detailed designs, the Consultant will make use of enhanced hydrological investigations, considering in-flows into the reservoir site, hydrographs, sediment transport; topography of the catchment areas to a scale of 1/50 000; the determination of lay-out alternatives; evaluation of hydrological data for the proposed works, filling curves of the reservoirs (1/50 000 or 1/20 000), evaluation of spillway flows; and the determination of the energy production and installed power.

2.1 Review of Existing Information

- a) Review the Feasibility Study Report and validate the modelling, assessments and recommendations of this study;
- b) Examine all other relevant available, reports, data and information with a view of extracting all data pertaining to Project;
- c) Identify and recommend which validations and detailed studies will be necessary in order to update the feasibility study report, the detailed design and programming;

- d) Present the proposed additional activities to the client for agreement before proceeding;
- e) Update Feasibility Study findings and recommendations concerning designs and development plans water related social infrastructure;
- f) Make an assessment of required additional topographic surveys and field investigations in the proposal and a programme for this work shall be further detailed and updated and reported.

2.2 Investigations and Detailed Design of Lower Dam and related hydropower and infrastructure

2.2.1 Supplementary Land Surveying

- a) Validate existing maps from the Feasibility Study;
- b) Examine the needs for and carry out additional topographical mapping to support design and construction taking into consideration the following aspects and other aspects as found necessary: (i) pre-marked ground control; (ii) Aerial photography covering reservoir areas, at a scale allowing for activity c), Section 2.2.2 below; (iii) Mapping of reservoir areas, at a scale of 1:10 000 with a 5-metre contour interval; (iv) Ground control at dam sites and at other areas as needed; (v) more detailed aerial photography of necessary, selected sites; (vi) mapping of selected sites (e.g. dam sites etc.) at a of scale 1:1 000 with a 1-metre contour interval; (vii)levelling and other geodetic surveys.

2.2.2 Supplementary Geological and Geo-technical Investigations

The Consultant will undertake geological and geotechnical investigations to ensure adequate capacity to support the dams and reservoirs, including: detailed air photograph studies, geological interpretation and geological cartography; design adjustments taking into account environmental and social concerns; design of site works and cofferdams: materials sources and borrow-pits opportunities. Carry out the design of hydraulic works and civil works for the major components of the hydropower plant and analyze the stability of the dam using structural analysis.

The supplementary geological and geo-technical investigations will include the activities to the extent considered necessary by the Consultant as suggested in the following:

- a) Carry out the core drilling for dams, tunnels and powerhouse including rock stress measurements in the headrace and powerhouse area comprising: (i) Core drilling, augering and test pit excavations, (ii) diamond core drill holes with core sampling and water leakage tests drilled along the proposed dam axis, in the power house area and in critical sections along the tunnel alignments;
- b) Undertake Seismic refraction surveys in order to (i) obtain information on rock weathering and soil overburden depth; (ii) obtain information/indications on variation in soil overburden strata; (iii) localise any fault zone in the bedrock; (iv) obtain information on the depth of open fractured bedrock; (v) obtain data on rock mass quality;
- c) Carry out a Seismic Hazard Assessment including an earthquake hazard study for the Project sites, providing earthquake-loading estimates as a function of annual exceeding probability;
- d) Evaluate Landslide Risks including geo-technical features and risks of landslides in the reservoirs;
- e) Perform test pit and trench excavations in the dam and reservoir areas and at potential source sites for construction materials to: (i) identify nature of soil overburden types with respect to slope stability, future foundation design and excavation works;(ii) investigate to the extent necessary the potential material sources for filter and

impervious cores in embankment dams; (iii) investigate potential aggregate materials; (iv) evaluate stability of banks in the future reservoir(s); (v) assess depth of loose and weak materials to be removed at dam foundations; and (vi) allow for disturbed and undisturbed soil sampling for laboratory testing.

f)

2.2.3 Surveys for Electrical Power Transmission and Distribution

- a) Carry out the necessary supplementary topographic and geotechnical survey of the transmission line alignments and substation sites as required;
- b) Perform necessary supplementary site investigations by trial pits for design of the transmission line and substation foundations as required.

2.2.4 Supplementary Hydrological Survey

- a) Examine and validate all available historical hydrological information collected during and after the Feasibility Study;
- b) Provide an updated long-term daily runoff record;
- c) Simulate catchment runoff as a required input to multipurpose project optimisation modelling that involves energy production, flood control, irrigation, fisheries, WSS, and environmental water needs.

2.2.5 Volume and Surface Area Curves for Reservoirs

- a) Update the reservoir volume analysis and surface extension as a function of water depth;
- b) Produce input for the power-generation simulation model for the river;
- c) Provide input to the environmental and social impact assessments in the form of maps of the reservoir(s) extension, indicating inundated areas for the various potential project designs as a basis for the planning of resettlement and compensation arrangements for people living in areas that will be inundated or harmed by the new dams.

2.2.6 Suspended and Bed-Load Sediment Transport Study

To the extent necessary, the contents of this activity are to:

- a) Design and implement a needed sampling station for monitoring of suspended sediment transport;
- b) Assess the amount of sediments, which can be expected to be accumulated in different alternative reservoirs;
- c) Assess the influence of future land use within the catchment, in order to evaluate the risks for increased sediment transport due to deforestation, increased agricultural activities etc.;
- d) Determine appropriate methods to reduce the sediment inflow to the reservoirs such as soil conservation, reforestation programmes, erosion control, vegetation protection etc.;
- e) Determine the nature of the sediments that can be expected to enter the Project's waterways, in order to facilitate design and choice of equipment;
- f) Assess the need for and, if found necessary, determine the design of, de-sanders, in order to economically reduce the accumulation of sediments in the reservoirs and entry of sediments into the Project's waterways.

2.2.7 Simulation and Optimisation of Energy Production

- a) Analyse and optimise the energy production versus reservoir size and design flow based on a multi-purpose benefit modelling approach;

- b) Make a separate production calculation for each relevant project configuration, including alternative ways of connecting to the national grid, identifying additional necessary investment costs in the power network.

2.3 Detailed Designs

2.3.1 Lower Dam and associated infrastructure

- a) Review the recommended dam types of the Feasibility Study and conclude the selection of dam types to be used as a basis for the detailed design;
- b) Optimise the Detailed-Design Parameters in terms of (i) Storage reservoir size; (ii) Size of flood-regulation reservoir, (iii) Spillway capacity; (iv) Dam height, slopes and other key dam data; (v) Design head; (vi) Design discharge; (vii) Tunnel and gate sizes; (viii) Type and number of units; ix) Design the corresponding saddle dams and the reservoir;
- c) Validate the dam site recommended by the Feasibility Study using an internationally approved method;
- d) Design of spillway based on the optimal solution in terms of construction and operation;
- e) Undertake detailed design of intake and water conveyance system including tailrace tunnel and/or headrace tunnel solution, and surge tank considering advantages and disadvantages in costs, construction time, efficiency, environmental impact, etc.;
- f) Undertake design of electro-mechanical equipment and works to establish cost estimates for turbines, generators, hydraulic steelworks and other electro-mechanical equipment for the scheme;
- g) Evaluate and confirm the recommended turbines in terms of type and number in the updated feasibility and prepare for final specifications and integration in the hydropower plant design;
- h) Make the final selection of main characteristics for the generating unit based on a technical/ economical evaluation;
- i) Work out efficiency curves for the entire operating range for the various turbine alternatives to be included in the energy- generation modelling and optimisation exercise;
- j) Design/Develop safety measures;
- k) Designs of tunnels, powerhouse, hydro-mechanical equipment, cooling water and drainage systems, electrical installations, intakes to the power plants and associated facilities;
- l) Carry out design of the generators, the main and auxiliary transformers, the high voltage and medium voltage switchgear, the system for auxiliary power supply and the control equipment. The capacity of the equipment should be defined with sufficient accuracy to allow for a detailed cost estimate of the installations.
- m) Undertake design of the steel works including trash racks, stop logs etc.;
- n) Prepare the design of the power house and waterways including suitable equipment for the power-house crane, ventilation and heating system as well as cooling systems for the generating equipment;
- o) Design/Develop a control room for operating the lower dam and provide an emergency power source (e.g. diesel engine) and all weather lighting;
- p) Design/Develop a mechanism for preventing and controlling aquatic weeds in the reservoir and at the intakes;
- q) Carry out design of access tunnel with portal building.

2.3.2 Transmission Lines

- a) Map out and conclude the most viable alternative for connecting the projects to the regional, national and local grids;
- b) Establish technical parameters for the transmission lines based on the final selection of the plant design, and on considerations regarding substations and grid connections;
- c) Obtain detailed information on the existing network situation, operation and maintenance experience as well as future renovation and extension plans as well as standards and practices used by TANESCO and ESCOM, as basis for the design;
- d) Define the transmission line routes adjusted to the access-road alignment, if necessary and map the transmission line route in detail completed with geological data and other relevant information concerning the routing of the line;
- e) Prepare application for construction permit, detail land-take needs, and required socio-environmental mitigation;
- f) Prepare final design including detailed location drawings and longitudinal profile of the transmission line and substations.

2.3.3 Roads and related Infrastructure

The Consultants shall carry out the following:

- (i) Prepare detailed designs for road network, construction and upgrading of around 210 kilometers of roads, taking into consideration of the Environmental Impact Mitigation measures recommended in the Environmental Impact Assessment for SRBDP. The road to the lower dam site should be of tarmac; and
- (ii) The Consultants shall design the roads infrastructure including appropriate drainage system in such a way that the roads shall have standard cross sections of 13.5 meters and carriage ways of 6.5 meters, with road reserves of minimum 30 meters in accordance with the Laws of the two States. The rest will be left for road services and future widening including construction of climbing lanes when necessity arises in a long run.
- (iii) Prepare detailed design drawings suitable for tender documents for procurement of works and goods;
- (iv) Prepare a budgetary cost estimate for the entire scope of works; and
- (v) Prepare complete sets of tender documents in accordance with the recommended international procurement guidelines for International Competitive Bidding (ICB).
- (vi) Carry out an assessment of the access-road alignments suggested in Feasibility Study and confirm the optimal alignment corridors;
- (vii) Prepare design of roads and other infrastructure (e.g. housing, water and sanitation) design to make sufficiently accurate construction-cost estimates for the economic evaluation;
- (viii) Analyze the traffic conditions, carrying capacity and available materials;
- (ix) Locate and prepare designs of the required drainage system, culverts and other structures;
- (x) Prepare plan/profile drawings, illustrating the horizontal and vertical alignment and describe typical cross sections and road-construction principles;
- (xi) Identify and design river crossings.

2.3.4 Temporary structures

- a) Prepare the final optimisation of the diversion arrangement i.e. dimensions of bypass tunnel/canal, and height of coffer-dams. The use of a diversion tunnel as a future bottom outlet or by-pass should be considered;

- b) Prepare design of the temporary power supply system to cover the needs during construction;
- c) Identify, and map construction camp sites and associated temporary facilities needed during the construction period. In spite of their temporary nature, these sites cause such significant impacts in regards to the ESIA studies.

2.4 Investment and Construction Plan

- a) Prepare in collaboration with ESCOM, TANESCO a tentative investment and construction plan for all stages of implementation including (i) Procurement of contractors; (ii) Detailed design; (iii) Construction; (iv) Construction supervision; (v) Commissioning;
- b) Prepare a schedule for review of studies and design, legal applications and permitting procedures, including ESIA consultations, required by the pertinent regulatory authorities MERA in Malawi and EWURA in Tanzania.

2.5 Designs and Plans for Water Related Social Infrastructure

Carry out feasibility updating and prepare designs and development plans for water related social infrastructure to the extent considered necessary for their inclusion in the SRBDP:

- a) Rural electrification including identification of potential projects, rural electrification strategy, and rural electrification action plan under the SRBDP;
- b) Fisheries and fish farming development including updating of the stock assessments of the Feasibility Study and identification of sustainable and appropriate technological options for fisheries and fish farming development in the river basin under the SRBDP;
- c) Water supply development to reach the MDGs including definition of the scope and implementation under SRBDP;
 - (i) Conduct survey to determine the proportion of the supply area to which the transmission of water will be either by gravity or pumping as outlined in the Feasibility Study report;
 - (ii) Prepare outline designs of intake works, treatment plant, transmission mains, storage facilities and distribution networks for the Water Supply in the Project area.
- d) Promotion of tourism including scoping study of opportunities for tourism and recreation development related to water to be included in the SRBDP;
- e) Preparation of cost estimates for implementation and O&M.

3.0 SCOPE OF WORK FOR RIVER STABILISATION AND FLOOD CONTROL

3.1 Review of Existing Information

- a) Review of the Feasibility Study Report and validate the findings, assessments and recommendations of this study;
- b) Examine all other relevant available, reports, data and information with a view of extracting all data pertaining to Project;
- c) Identify and describe necessary supplementary investigations and studies considered necessary for the consultancy;
- d) Describe additional topographic surveys and field investigations;
- e) Validate and update the feasibility designs as a basis for preparation of final design.

3.2 Supplementary Technical Investigations

3.2.1 Hydraulic Survey

- a) Make river discharge measurements from Mwandenga during a peak flood event in order to validate the established theoretical discharge rating curve;
- b) Carry out a cross-section survey to validate the feasibility study conclusion by measuring a few cross-section lines (across river bends, including the banks) continuously during a flood event at different river discharges;
- c) Undertake visual investigations to identify impaired river reaches of the network and their stressors and define a protocol for the assessment of impairment to representative river reaches. The visual assessment shall include, but not be limited to bank stability, vegetative protection, riparian buffer zones, channel alignment and condition, and stream habitat diversity.

3.2.2 River stabilisation and flood control

Based on further investigations and hydrological data the Consultant shall:

- a) Investigate whether bank erosion can be reduced by managing the frequency of flood events (non-structural measures to control erosion);
- b) Review and update the hydraulic modelling of the flood plain by: (i) Hydrological model update, in particular of the Kyungu River basin; and (ii) Hydraulic model update,; (iii) Morphologic model update, in particular of the 2-D bank erosion prediction;
- c) Prepare drawings of the Project layout of all project components required at the feasibility level.

3.2.3 Basin flood monitoring

- a) Implement a hydrological monitoring programme covering the entire basin with a long time horizon as part of a Basin Development Programme for managing the water resources, including dam operation.

3.3 Detailed Design and Investment Planning

3.3.1 Detailed Design

The layout of the work for river stabilisation and flood control agreed from the updated Feasibility Study shall be done to a detail design level scale. The activities will include:

- a) Carrying out final design and planning of bank protection works: The detailed design shall show the location, construction method and cross sections of all bank protection works;
- b) Determining the locations of the spillways and carry out final design and planning of the spillways provided this is found to be a viable option;
- c) Preparing tender documents and specifications for the bank protection and spillway works for tendering as appropriate;
- d) Preparing detailed engineers estimates.

3.3.2 Investment and Construction Plan

- a) Prepare a tentative construction plan for all stages of implementation for the river training works up to commissioning and full operation of the works;
- b) Prepare provisional schedules for detail design and construction including time allowed for review of studies and design, legal applications and permitting procedures, required by the regulatory authorities.

4.0 SCOPE OF WORK FOR IRRIGATION AND DRAINAGE WORKS

4.1 Review of Existing Information

- a) Review of the Feasibility Study Report and validate the findings, assessments and recommendations of this study;
- b) Examine all other relevant available, reports, data and information with a view of extracting all data pertaining to Project;
- c) Identify and describe necessary supplementary investigations and studies considered necessary by the Consultant;
- d) Describe additional topographic surveys and field investigations;
- e) Validate and update the feasibility designs as a basis for preparation of final design.

4.2 Supplementary Investigations

4.2.1 Feeder Canal Topographic Survey

- a) Carry out a topographical survey of the canal line, based on the preliminary feasibility design of the canal covering cross sections, 100 m long at 100 m centres with the centre of the cross section at the calculated centre line of the canal. The feasibility line of the feeder canal has been prepared on the basis of topographical mapping at a scale of 1:20,000 with 5 metre contours;

4.2.2 Feeder Canal Soil Survey

- a) Determine the soil conditions at the inverted siphon valley crossings to ascertain if it is possible to lay the pipe in a trench, if the material can be excavated, the siphon can be laid in a trench under the watercourse. On the other hand if there is rock at a shallow depth, it is usually more economical to opt for an aqueduct.
- b) Check and correct if necessary the assumptions of the feasibility design that there is material along the canal line that can be excavated using normal machinery and can be used in the fill for the canal embankment construction;

4.2.3 Existing Irrigation

- a) Assess and confirm information about existing irrigation and drainage schemes including the feasibility information, available data and relevant studies within the study area;
- b) Carry out field visits to assess existing schemes with regards to functionality, efficacy, ownership and stakeholder relations.

4.2.4 Proposed Irrigation Service Areas

- a) Examine the proposed irrigation schemes in Malawi and Tanzania that have been recommended for implementation under the Project;
- b) Identify issues responsible for the limiting level of service in existing schemes and shall develop strategy and methodology for additional data collection, analysis and design in the current Project;
- c) Carry out surveys to the full irrigated service area in Tanzania of 1,800 ha since the socio-economic survey and the soil survey were carried out on the basis of a preliminary layout of a 500 ha pilot project;
- d) Confirm that 3,000 ha is the practicable limit of irrigation development on the Tanzania floodplain or determining the actual practicable limit, bearing in mind the availability of water for irrigation;
- e) Define the service area to be irrigated;

- f) Carry out complimentary soil survey on the area which was not covered under the feasibility study;
- g) Carry out socio economic survey with current users (male and female) of the land in the service area, in particular to assess the current cropping systems and the access to and control over resources (land, crops, water, labour, technology etc.);
- h) Prepare an outline irrigation layout for the remainder of the service area taking into account the findings of g) and the interests and needs of both female and male farmers.

Crop Production Plan

The Consultants shall prepare a sound, manageable and sustainable irrigated crop production plan which will include the following:

- (a) Crops and cropping pattern taking into account high yielding and high value crop varieties including fruits, vegetables, green maize and spices for each individual site;
- (b) Water requirement for the earmarked crops;
- (c) Appropriate farm inputs for selected crops;
- (d) Appropriate marketing and agro-processing systems;
- (e) Appropriate mechanization plan;
- (f) Appropriate farmers organization and management;
- (g) Crop production guidelines for the selected crops and cropping patterns;
- (h) Marketing and Agro processing Framework;
- (i) Site specific guidelines for irrigation scheduling of all the selected crops to be grown in the designed irrigation schemes; and
- (j) Simple farm business models of selected crops attractive to farmers.

4.2.5 Kaseye Valley Irrigation Site

- a) Update several Feasibility study activities of the current assessment of the Kaseye Valley Irrigation Site in Chitipa district on the Malawian side into a final design taking into account the findings of g) and the interests and needs of both female and male farmers;

4.2.6 Runoff from Kyungu River

- a) Carry out a geotechnical investigation of the Kyungu River to determine the actual material of its bed and banks as a basis for the detail design in order to validate the assumptions made in the Feasibility Study concerning the resistance to erosion of the proposed drainage channel;

4.2.7 Floodplain Survey

- a) Undertake mapping of the location and dimensions (i.e. cross-section survey) of existing natural drainage channels to complement the photogrammetric survey and the digital elevation model that was done in the Feasibility Study.

4.2.8 Updating Feasibility Designs

- a) Identify and recommend which detailed studies will be necessary in order to complete the Feasibility Study as a basis for the detailed design and programming;
- b) Validate and update the feasibility designs as a basis for preparation of detail design, specifications and tender documents;

- c) Prepare design of efficient irrigation systems using the best appropriate irrigation methods and preferable cropping pattern seen from the perspective of the local populations. Present all design drawings and specifications to feasibility level scale;
- d) Estimate of the total projected water requirements (net, gross and peak season demands) of each scheme with the available water quantity of each identified source, in order to determine the maximum net irrigable area;
- e) Estimate crop water requirement for possible cropping pattern and cropping intensity;
- f) Identify problems of drainage, seepage, flooding, salinity or others wherever such problems occur or expected to occur in the course of operation of irrigation scheme,
- g) Propose proper solutions such as appropriate drainage designs, geo-membrane or other lining materials, flood protection measures, land reclamation and soil management practices to ensure sustained economic operation of the Project and determine the access requirements both to and with in the area.

4.3 Detailed Design and Investment Planning

The physical design and planning of irrigation shall take into account the social dynamics of irrigated agriculture and all that comes with this by interlinking this activity with the ESIA activities of the assignment.

4.3.1 Detailed Design

- a) State all parameters and assumptions used in the design;
- b) Prepare required design of cross/head regulators, drop structures, off takes, division boxes, service roads with bridges and culverts, and gates;
- c) Prepare designs for the feeder canals on the basis of the topographical surveys, the plan and longitudinal section of the canals. Designs will be prepared for the inverted siphons as well as cross drainage structures and aqueducts;
- d) Prepare a detailed layout of the Tanzania irrigation and drainage area showing the location of all structures drains and canals and including details of all different types of associated structures;
- e) Prepare a detailed layout of the Malawi irrigation and drainage area showing the location of all structures drains and canals and details of all different types of associated structures.

4.3.2 Investment and Construction Plan

- a) Prepare a tentative construction plan for all stages of implementation for the feeder canals, irrigation and drainage works up to commissioning and full operation of the works;
- b) Prepare provisional schedules for detail design and construction. The construction planning should also outline the time allowed for review of studies and design, legal applications and permitting procedures, required by the related regulatory authorities in Malawi and Tanzania;
- c) Prepare detailed engineers estimate.

5.0 SCOPE OF WORK FOR WATER RELATED SOCIAL INFRASTRUCTURE

5.1 Review of Existing Information

- a) Review the Feasibility Study regarding the development of the following water related social infrastructures: (a) rural electrification; (ii) Fisheries and Fish Farming; (iii) Water Supply; (iv) Promotion of Tourism; and (v) Roads and river crossings (included under section 2.5).

- b) Review of the Feasibility Study Report and validate the findings, assessments and recommendations of this study;
- c) Examine all other relevant available, reports, data and information;
- d) Identify and describe necessary supplementary investigations and studies considered necessary by the Consultant.

5.2 Designs and Development plans

5.2.1 Rural Electrification

This activity will be to create a rural electrification strategy and action plan. To the extent considered necessary, the main activities of this component will be to:

- a) Identify potential rural electrification projects in cooperation with key stakeholders; including local and national Government agencies, the private sector, community based groups, and non-governmental organisations;
- b) Prepare a rural electrification strategy for the entire SRB to stimulate rural economic and social development;
- c) Create a full bankable feasibility study⁶ to the level of basic designs for rural electrification of Songwe River Basin for further development and implementation under the auspices of the SRBDP.

5.2.2 Fisheries and Fish Farming

- a) Analyse and update the fish stock assessments of the Feasibility Study recognising that opportunities may exist for increased production of fish in both the existing natural riverine and lacustrine systems, and in forthcoming reservoirs;
- b) Describe the aquatic environment and identify needs for improvement of the fish resource knowledge base;
- c) Identify the existing patterns of fish distribution and marketing;
- d) Analyse fisheries infrastructure needs including extension services and inputs
- e) Identify appropriate technological and institutional options for fisheries development in the river basin;
- f) Assess to what extent the interventions under the SRBDP will pave the way for new development opportunities concerning the fisheries sector;
- g) Assess opportunities for fish farming development in the reservoirs and in separate water bodies fed from the reservoirs developed in separate programs.
- h) Analyse the effects (positive and negative) of the planned flood control measures and altered water discharge into the river on the fish habitat, fish stock development and fish migrations.
- i) Examine existing fisheries institutions, for research, monitoring, and regulating fishing activities.

5.2.3 Water Supply and sanitation

Provisional estimates made by the Feasibility Study show that there may be some 30%, 40%, and 50% of the population lacking access to safe sources of water supply in the Lower, Middle and Upper basin, respectively. The water supply undertakings of the Project are not necessarily linked to the new dams and the Project shall explore opportunities for equitable basin development under the SRBDP giving priority to the crucial needs. The Consultant shall:

- a) Verify the findings and recommendations of the Feasibility Report through supplementary information and investigations in the identified project areas. The

⁶ The Full Bankable Feasibility Study is a study up to and including basic design, but not beyond this. This is an adequate level of preparation in case an interested investor wants to develop its own detailed design for a project.

delineated key investments and non-structural measures on water supply are the point of departure to for the validation of the design assumptions and recommended solutions;

- b) Make an evaluation of needs for improved or extended water supply services in different segments of the basin.
- c) Assess, in consultation with the communities, alternative way of serving the targeted population, such as: (i) the rehabilitation and augmentation of the existing gravity fed piped water schemes which source water from Songwe River tributaries, (ii) construction of new gravity schemes from the tributaries, and (iii) drilling new boreholes in areas where gravity-fed piped water is not feasible;
- d) Review information of planned and ongoing WS&S MDGs projects in the Basin, and explore opportunities for synergies and harmonisation of these projects efforts under the SRBDP;
- e) Establish final scope and implementation modalities of the water supply development interventions of the Project with emphasis on community involvement throughout the stages of planning, design, implementation, operation and maintenance;
- f) Prepare the design, specifications and implementation plans for the structural and non-structural water supply improvement activities under the SRBDP.

5.2.4 Promotion of Tourism

Propose a scoping study of opportunities for tourism and recreation development, focusing on identification of:

- a) The nature and size of existing tourism sector in the Basin;
- b) The aspects of the Basin that represents tourism potential and what is the target groups;
- c) The kind of tourism development that would be relevant and viable;
- d) Potential activities to facilitate the development of the tourist sector;
- e) The actors and service providers who are involved in the tourist business and potentially new actors who could be attracted;
- f) Assess the potential of the planned projects and sub-projects of the SRBDP to promote enhanced tourism in the Songwe Basin, which will depend on the implementation of the other subprojects;

5.3 Design an Investment Planning and Cost Estimates

- a) Carry out the required design and development plans for the identified social infrastructure investments for implementation under the SRBDP.

6.0 MULTI PURPOSE BENEFIT OPTIMISATION

Based on the new findings from the investigations, the Consultant shall optimize the Project's general arrangement, the sizing, and operational strategies of the project components. This includes the optimization of the Project in terms of capacity, energy generation and flood mitigation in conjunction with the economic and environmental evaluation. The multi-purpose benefit analysis will cover Economic, Social and Environmental factors related to the 3 dams

6.1 Multi-Purpose Optimisation

The optimization of the project components will cover the following aspects:

6.1.1 Economic Evaluation

The Consultant shall:

- a) Establish the economic merit of the Lower Dam project as well as the subsequent implementation of the two other dams by considering their viability as part of the development of the Songwe River Basin on the basis of their contributions to the national economies in the two countries.
- b) Calculate the costs in economic terms, local market prices being converted into economic costs based on available standard conversion factors. The Environmental and Social Impact Assessment (ESIA) of the Projects shall provide input, detailing the environmental and socio-economic cost and benefit and contributing a costed mitigation programme, to be considered in the economic evaluation of the scheme.
- c) Determine the Project's NPV and EIRR of each project applying a generally accepted measure of the value of the additional electricity supplied by the scheme for domestic and industrial use. Projected revenue from exports of surplus energy, if any, should be added, together with any environmental or other benefits quantified within the framework of the environmental assessment.
- d) Prepare the necessary inputs for a collective economic evaluation and optimisation;
- e) Analyse and optimise the collective/multi-purpose economic viability of the investments. The analysis shall be presented in sufficient detail to satisfy the requirements of the major lending agencies;
- f) Explore the possibilities for inclusion of CO₂ credits in the Project;
- g) Carry out sensitivity analyses out for changes in main parameters.

6.1.2 Financial Analysis

The consultant shall:

- a) Carry out a Financial Analysis to determine the financial viability of the identified investment projects based on market prices and the average electricity tariff in the two countries for the interconnected system;
- b) Assess the soundness of the project(s) from the perspective of the prospective investor/owner;
- c) Calculate the average unit cost, in financial terms, of the scheme will permit a comparison with the prevailing tariffs;
- d) Carry out sensitivity analyses for all realistic alternatives;
- e) Prepare total investment costs broken down into foreign and local components. Together with the implementation schedule, and including physical and price contingencies, a basis for the establishment of a financial plan should be provided;
- f) Undertake a financial evaluation of the dam, hydropower projects and associated multi-purpose benefits from other identified projects that shall provide input to the overall financial evaluation of the entire SRBDP.

6.1.3 Water Resources Optimisation

- a) Analyse different competing scenarios, uses and combinations for the most effective and optimum water utilization between irrigation, storage, hydropower, release for downstream and environmental use, etc.;
- b) Prepare indicative development scenarios with guidelines for water allocation under normal conditions and extreme event years.

PART D: COMPONENT III: STRATEGIC ENVIRONMENTAL & SOCIAL ASSESSMENT (SESA) AND ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA)

1.0 ASSIGNMENT OBJECTIVES

1.1 SESA

The objectives of the Strategic Environmental and Social Assessment (SESA) are to:

- a) Identify and assess the overall and cumulative impacts to be expected as a result of the implementation of the SRBDP, identify appropriate measures to mitigate any negative environmental and/or social consequences of the proposed Program (positive and negative) as well as mechanisms for ensuring equitable benefit sharing and optimisation of positive synergies;
- b) Ensure that findings and recommendations are well understood by all concerned authorities and stakeholders, and that the proposed mitigation measures are appropriately addressed and fully included in the development plans and institutional frameworks underpinning program implementation from the earliest stage of decision-making on a par with social and economic considerations.

1.2 ESIA

The objectives of the Environmental and Social Impact Assessment (ESIA) are to:

- a) Enhance the sustainability of the proposed projects by identifying and assessing the possible impacts of each of the specific SRBDP sub-components, and by incorporating mitigation measures into the project design and future operations;
- b) Provide the Governments of Malawi and Tanzania with advice on how the project detailed design or plan may be changed or adapted to avoid or mitigate negative impacts and to better capture anticipated environmental and social benefits.

2.0 SCOPE OF WORK FOR THE STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT

2.1 Review of Existing Information

In connection with the Scoping, the Consultant shall:

- a) Review the Feasibility Study Report and all other available, relevant reports, data and information⁷ related to the Environmental and Social Impact Assessment (ESIA) and the Strategic Environmental and Social Assessment (SESA);
- b) Identify and recommend which detailed studies (e.g. better understanding of socio-economic context, including access to and control over resources etc.) will be necessary in order to complete the full feasibility study as well as the detailed design and programming.

2.2 Specific Tasks

The Consultant's tasks will cover, but not necessarily be limited to:

- a) Carrying out scoping, defining the boundaries of investigation, assessment and assumptions required to initiate a practical process for strategic assessment of the environmental and social issues in the Songwe River Basin and present an overview of the information requirements, quality and data gaps;
- b) Making a reconnaissance and assess the state of the environmental and social conditions likely to be significantly affected;

⁷ The multi-disciplinary data and information base established by the Swiss (SDC) funded Songwe River Transboundary Catchment Management Project (SRTCMP) provides a valuable source

- c) Determining the likely (non-marginal) environmental and social impacts;
- d) Investigating the potential gains of the environmental and social benefits and possibilities for avoiding and or mitigating the adverse environmental and social impacts;
- e) Identifying the required information and indicators that will be necessary for policy makers, planners, funding agencies, investors, etc. at different implementation stages of the SRBDP and how this information should be generated and disseminated;
- f) Preparing indicators for monitoring the implementation of the macro level changes induced by the SRBDP and prepare a plan for the monitoring of environmental and social effects;
- g) Preparing a SESA report with recommendations that comply with the safeguarding requirements to the two Governments and AfDB;
- h) Preparing an Executive Summary of the report in non-technical language for information of stakeholders and the public and its integration into the convention and statutes of the new RBA.

3.0 SCOPE OF WORK FOR THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

3.1 Scoping

In connection with the Scoping, the Consultant shall:

- a) Review and analyse relevant Tanzanian and Malawian laws and regulations affecting the Project;
- b) Establish a check-list and schedule for the necessary permits and application procedures involved in obtaining all relevant licenses to build and operate the projects under the SRBDP;
- c) Review the Feasibility Study Report and all other available data, statistics and information relevant to the Environmental and Social Impact Assessment (ESIA) and the Strategic Environmental and Social Assessment (SESA);
- d) Identify detailed investigations etc. that will be necessary to update the ESIA of the Feasibility Study;
- e) Describe required additional analysis and investigations and prepare a schedule for the necessary detailed investigations for inclusion in the Scoping Report;
- f) Identify and characterize key stakeholders groups and interview representatives from different groups.

3.2 Baseline Information including for Clean Development Mechanism (CDM) Support to the Project

This activity will provide baseline information applicable to the environmental and social impacts assessments⁸. The Consultant shall:

- a) Define key baseline information for ESIA;
- b) Describe the socioeconomic baseline (population; land use; education; community structure; access to and control over resources, gender relations, employment; distribution of income, basic services; assets and land tenure, public health; ethnicity; customs etc);
- c) Describe the biophysical baseline, geology (general description of the overall study area and details for land application sites); topography; soils (general description for

⁸ The multi-disciplinary data and information base established by the Swiss (SDC) funded Songwe River Transboundary Catchment Management Project (SRTCMP) provides a valuable source

- overall study area); monthly average temperatures, rainfall and runoff characteristics; description of receiving waters as to how it affects the project activities;
- d) Identify and review Malawi and Tanzania policies, legal and institutional frameworks and requirements. These will be reviewed in order to ensure that necessary measures be included in the design and implementation of the Project;
 - e) Identify and make consultations with key stakeholders responsible for wetlands, fisheries, forestry, agriculture, trade and industries local communities etc; and
 - f) Collect and compile the following baseline information for the Clean Development Mechanism (CDM) support to the Project:
 - i. The sources of energy for different uses by the population of the Basin;
 - ii. The quantities of the different types of fuels used by the population and the percentage of the population using each source of energy identified;
 - iii. The estimated additional population that will benefit from the surplus hydropower to be fed into the national and regional grids;
 - iv.

3.3 Impact Assessments

3.3.1 Assessment of Socio-economic Impacts

The below list of partly interrelated Socio-economic factors shall serve as a check-list for the Consultant for consideration in terms of relevance and examination of possible implications of the planned project interventions.

- a) The impacts of the project interventions concerning:
 - access to, and control of resources;
 - income patterns and distributional issues;
 - cultural societal fabric;
 - access to markets;
 - decision-making traditions and norms;
 - land tenure;
 - health issues (malaria, STDs, others as relevant);
 - communication;
 - Institutional issues; etc.
- b) Project-induced losses, and gains, of environmental services and associated costs and benefits;
- c) Impacts of project interventions in relation to potential conflicts;
- d) The effects of the projects on the public health and hygiene situation; including domestic water supplies and health impact assessment (HIA) should be included in a future ESIA;
- e) Need for resettlement and compensation of people;
- f) Effects of the Project on soil erosion, land loss and floods;
- g) The numbers of people and households affected by all project activities, segregating between those to be relocated and those to lose land and other property. Where people will be displaced, indicate which will be physically displaced and those that will be economically displaced;
- h) Impacts of Project on potential for tourism in the basin;
- i) The projects impacts on the proportion of subsistence and commercial crop production;
- j) The projects effects on appropriate institutional arrangements for participation of the local population in decision making and as beneficiaries of a future project: Existing local structures special purpose committees/user associations, NGO's and interest organisations;
- k) The effects of the Project on the reduction of the rate of deforestation in the uplands;

- l) Description and assessment of the impact of the Project on the role of women in agriculture and households;
- m) The projects contribution to gender mainstreaming strategy;
- n) Impact of the interventions on the change of population distribution patterns (in-migration) and conservation status of the wildlife, including endemic endangered species.

3.3.2 Bio-physical Environment impacts to be considered

The below list of partly interrelated Bio-physical factors will serve as a check-list for the Consultant for consideration in terms of relevance and examination of possible implications of the planned project interventions.

- a) Propose an appropriate approach to this study;
- b) Impacts of the project interventions on water quality including sediment content/transport and erosion;
- c) Impacts of projects on down-stream hydrology and estimation environmental flow needs;
- d) Impacts of projects on vulnerable animal and plant species; ecological connectivity/fragmentation issues concerning aquatic fauna (special focus on fish) due to dam wall;
- e) Impacts of projects on other flora/fauna due to other project-originating infrastructure and; pests (impact on and from the Project);
- f) Impacts on biodiversity resources in the river basin area, especially presence of any species of conservation value or special conservation;
- g) Impacts of the project interventions on water and sanitation related morbidity; environmental problems in the project area; wetland degradation and water pollution; project design parameters and impacts on soil, air and water resources for the river basin and Lake Malawi/Nyasa;
- h) Identification and prediction of the impacts of the Project on pollution of land and water by agro-chemicals (pesticides and fertilisers), changes in water quality due to irrigation and drainage, changes in surface and ground water and incidence of water-borne and water-related diseases;
- i) Impacts of discharge of sediments and the magnitude of the changes in water quality projected quantitative changes in beneficial uses, such as fisheries, industrial use etc. sanitation and public health benefits anticipated;
- j) Impacts of the project interventions on fish resources of the Songwe River, including their ecology, feeding and breeding biology. Extinction of some fish species due to increased siltation (disturbance to the aquatic environment). Need to analyse the extent to which the natural aquatic environment will be disturbed as a result of project activities and which important species could be affected. Determine the actual value of fish in the Songwe;
- k) Determine the environmental flows required to sustain the downstream uses and ecology including biodiversity.

3.3.3 Assessment and Valuation of Residual Impacts

The assessment of residual impacts shall clearly describe the impacts, positive and negative, as to their nature, location, duration and magnitude. All impacts should be subjected to a valuation exercise. This should, as far as possible, be of a quantitative nature. Close co-operation with the economic/financial experts is necessary in order to facilitate the inclusion of socio-environmental impacts into the cost-benefit analysis of the Project.

3.4 Social Safeguarding and Environmental Mitigation Plans

3.4.1 Compensation and Resettlement Plan

The resettlement action plan is the guidelines by which people who lose land, physical assets, or rights of access to resources necessary for their income, whether temporarily or permanently, are compensated for their losses and afforded realistic opportunities to increase or at least to restore their incomes and standards of living.

Analysis:

- a) issues of population diversity and existing community organizations;
- b) existing types and forms of farmer groups/ organisations/ cooperatives/ associations, including any other groups which have been formed for economic benefits;
- c) existing nature of participation, leadership, and institutional networks including existing interface with local governments and other external institutions;
- d) capacity of external institutions to facilitate communities identify, prioritize, plan/design, and implement sub-projects;
- e) existing traditional participatory structures and authorities, (vi) identify various interest groups, for mobilization and organization, to be formed into respective participatory committees, including a resettlement committee, with special focus on women's interests and needs.

Resettlement Action Plan:

- a) Identify and quantify the potential households for resettlement and compensation, as well as prepare an in-depth gender disaggregated profile of each household for future valuation;
- b) Identify compensation packages and other measures necessary to assist affected people to improve or restore living standards;
- c) Devise a participation plan for a participatory approach to planning and implementation of resettlement;
- d) Formulate grievance procedures that include clear procedures for resolution of disputes taking into account traditional dispute settlement measures and judicial recourse;
- e) Establish Institutional arrangements to carry out and coordinate resettlement activities;
- f) Prepare a Resettlement Action Plan (RAP) in accordance to the laws of the two countries on land acquisition, other specifications and requirements of the African Development Bank (AfDB), other lending agencies and Donors, on resettlement and other relevant applicable policies and guidelines shall be consulted;
- g) Design an Internal-monitoring plan for regular monitoring of compensation exercise and implementation of resettlement strategies based on indicators to measure inputs, outputs and outcomes of resettlement activities.

3.4.2 Environmental and Social Management Plan

- a) Prepare an Environmental and Social Management Plan (ESMP) for the construction, operation and decommissioning of the Project the ESMP must be practical and cost effective.
- b) Prepare the cost estimates for the implementation of the ESMP, including all capital, operating and training costs.
- c) Identify the information needed to guide management decisions and the current costs and sources of financing for the ESMP and its monitoring tasks.
- d) Indicate responsibilities for lead agencies, stakeholders and any training needs that should be undertaken to ensure the proper implementation of the ESMP
- e) Propose an effective, comprehensive public consultation strategy which includes at least its objectives, an initial list of stake-holder or audiences to be consulted, methods

for reaching these stake-holder/audiences, the scheduling of consultation activities, and how the consultation efforts will be analysed.

PART E: COMPONENT IV: INSTITUTIONAL DEVELOPMENT

The purpose of this activity is to facilitate the development of a Convention that shall serve as a foundation for the establishment of an effective Songwe River Basin commission (SRBCSRBC) and preparation of a Road Map for the forthcoming ratification of the Convention and preparation of SRBCSRBC. The Project activities include expert group sessions, one national workshop in each of the two riparian countries, a final bi-lateral workshop, and a final Council of Ministers meeting.

The Consultant will design a basin-level M&E system under the Project; this will be managed in the short term by the PMU and later by the River Basin commission. The M&E system, which will include hydrological monitoring should be linked to the SADC-HYCOS M&E system as well as to the national M&E systems and should be based on the logical framework approach and supported by the Management Information System to be setup under the study.

1.0 SCOPE OF WORK FOR THE ESTABLISHMENT OF A JOINT SONGWE RIVER BASIN commission

1.1 Review of Existing Information

- a) Review the Feasibility Study Report, the SADC Protocol on Shared Watercourses and all other available, relevant reports, data and information related to the establishment of the RBA;
- b) Examine experience from other basins and Sub-basin on the establishment and empowerment of a RBO including contact with African Network of Basin Organisations (ANBO) based in Dakar, Senegal;

1.2 Establishment of a River Basin commission

In order to pursue and facilitate the planned establishment of a river basin commission, the Consultant is required to undertake the following:

1.2.1 Preparation of Convention and Associated documents

- a) Preparation of a draft Convention and related texts and documents for the basin commission under the auspices of the SADC Protocol on Shared Watercourses as a fundamental strategic instrument for integrated management and development of land water and other natural resources between the two countries under the leadership of SRBCSRBC - (further consultations within the two Governments is needed);
- b) Develop a Road Map for the development and approval of the Convention towards the signing by Heads of State and subsequent ratification by National Assemblies.
- c) Validation and approval of the Convention including facilitation;
- d) Facilitation of hearing, approval and signing of Convention and associated documents expert group sessions and workshops and support to the establishment of the commission.

1.2.2 Validation, approval and signing of the Convention

- a) Organise national workshops with the major stakeholders on the first draft version for the amendment and validation of the draft Convention;
- b) Facilitate the organisation of the 1st meeting of Council of Ministers of the Songwe Basin for Presentation and dialogue on the draft Convention;

- c) Organise the second session of the committee of experts to produce the amended and validated version;
- d) Organise a broad based bi-lateral workshop for the validation of the amended version and preparation of final draft Convention and Road Map; and
- e) Facilitate the organisation of the 2nd meeting of Council of Ministers of the Songwe River Basin for signing of Convention by Heads of State and subsequent ratification by National Assemblies.

1.2.3 Preparation of Final Documents

- a) Prepare the final Convention and associated documents relating to: (i) Mandate; (ii) Organogram; (iii) Operational Procedures; (iii) Job Descriptions; (v) Business Plan and (vi) Budgets needed for the establishment and initial operation of the commission;

1.2.4 Preparation for the Establishment of the River Basin commission

- a) Facilitate the preparations for the establishment of the commission.

2.0 SCOPE OF WORK FOR INSTITUTIONAL CAPACITY BUILDING

2.1 Instruments and Capacity Building for IWRM

The River Basin commission will be the centre piece of the implementation of the SRBDP and in order to ensure effective performance of its mandated responsibility, the commission will need to have at its disposal various operational instruments. The development of these instruments will be closely linked to the preparation of the various components of the SRBDP under Component I. In order to prepare the ground for the effective operations of the commission the Consultant is required to:

- a) Prepare a “Business Plan” for the Songwe RBO to perform its mandated functions, comprising:
 - Design an appropriate Water Resources Management Information System for the basin that can be co-shared by the two Governments
 - Regulatory functions;
 - Operation and management of information systems and services (water, land natural resources, socio-economic);
 - Decentralisation and stakeholder involvement;
 - Communication & public relations strategy;
 - Development of a database of planned and identified projects;
 - Management of joint assets;
 - Support to IWRM institutional capacity building in the basin;
 - Formulation of development plan for Human Resource Development;
 - Income generation and securing financial sustainability of TWRM at basin and local level;
 - Preparing a programme on water resources data acquisition, processing, analyzing, transmission and dissemination to Basin and National Water Resources Databases in Malawi, and Tanzania, including data and information on planned and emergency measures;
 - Design a network of surface water and groundwater monitoring stations by optimizing the existing network coverage. This should also incorporate real time flood forecasting and early warning mechanism for the communities living downstream
- b) Prepare for the integration of the GIS based information systems and knowledge base including the Atlas generated by the Swiss (SDC) funded Songwe River

Transboundary Catchment Management Project (SRTCMP) into the new Songwe River Basin commission; and

- c) Prepare training and capacity building programmes to ensure that personnel and skills are available to implement and operate the information, knowledge, and data collection systems for TWRM.

2.2 Strengthening of Local Institutions

The Consultant is expected to:

- a) Initiate a systematic dialog regarding the institutional arrangements that will be required for the management of the shared waters of the Songwe River. This activity should review the legal and institutional framework for water management at national, district and local level in both countries and recommend the amendments or arrangements that will facilitate the implementation of the WRDP;
- b) Develop instruments and mechanisms for enhanced sector coordination and collaboration at local, district and basin levels; and
- c) Develop a methodology and action plan for communication and basin-wide stakeholder participatory planning and decision-making.

2.3 On-the-job training

A part of the Capacity building efforts will be directed at local expertise from the two countries by their participation in the implementation of the Project. This will add value to the Project beyond its immediate results in terms of knowledge transfer through learning by doing. Part of the site investigations and other project interventions should be performed with the assistance of staff from the respective authorities and competence centres in the two countries. In the different project activities there will be a large portion of on-the-job training, of different categories to be selected and appointed by the two governments. ..

2.4 Partnership Forum for Financial Mobilisation

The purpose of this activity is to assist the two Governments and the forthcoming Songwe River Basin commission (SRBC) in mobilizing funding and financial partners for the SRBDP investments. The Feasibility Study suggested developing the basis for the organization of a “Songwe River Basin Private Development Network” under the SRBDP. Recognising that mobilization of investment partners and financial resources for large investments projects takes time and concerted efforts, it is important to start this activity early in the Project. The Consultant is expected to:

- a) Develop and initiate, in cooperation with authorities and stakeholders, an action plan for the establishment of a “Consultative Group of Financial Partners” with the purpose of promoting cooperation between funding partners and the two Governments, mobilise public and private sector funding, and generate support to, and engagement in, the upcoming infrastructure investments in the Basin. The plan should have a long-term perspective under the auspices of the SRBDP; and
- b) Facilitate the constitution and activation of the financial mobilization by organising a round-table conference with key international development cooperation funding agencies, private financial institutions and private sector investors to present the prospects of the upcoming bankable projects and promote the involvement of the financial partners, and establishment of the proposed Partnership Forum.

3.0 COST ESTIMATES RELATED TO COMPONENT IV

3.1 Scope

The cost estimate should cover:

- a) All project components, physical works, consulting services, physical contingencies, administration;
- b) Taxes and duties, if applicable;
- c) The training of staff;
- d) Operation and maintenance;
- e) Price contingencies and price escalation; and
- f) Local and foreign components separately.

3.2 Basis for Cost Estimates

The consultant shall establish a list of cost items relevant to Component IV based on international competitive-bidding prices for recently completed similar projects, During the course of the study, the list of cost items should be updated and refined, as more information is collected regarding:

- a) Development of international pricing of similar projects.
- b) Possibilities for enhanced input from local suppliers and service providers.

This information should be used to enable a correct separation of the costs into local and foreign components.

PART F: COST ESTIMATES IMPLEMENTATION ARRANGEMENTS AND SCHEDULES

1.0 COST ESTIMATES FOR ALL COMPONENTS

1.1 Cost Estimates

The purpose of this activity is to establish the total costs of all Project Components for the economic and financial evaluation of each specific intervention of the SRBDP. Concerning the interventions (dams, hydropower, transmission and associated investments (under Component II), the cost estimate will be at detail level for the Lower Dam and at feasibility level for the two other dams. The cost estimates should cover:

- a) All project components, engineering services, physical contingencies, administration;
- b) Environmental mitigation measures and land acquisition, compensation and resettlement;
- c) Taxes and duties, if applicable;
- d) The training of operational personnel;
- e) Operation and maintenance for the structural investments;
- f) Price contingencies and price escalation;
- g) Local and foreign components separately.

1.2 Basis for Cost Estimates

The consultant shall establish a list of cost items relevant to each component based on international competitive-bidding prices for recently completed similar projects, During the course of the study, the list of cost items should be updated and refined, as more information is collected regarding:

- a) Development of international pricing of similar projects.
- b) Possibilities for enhanced input from local suppliers and service providers.

This information should be used to enable a correct separation of the costs into local and foreign components.

2.0 EXPERTISE REQUIRED

For the execution of the Project as one contract, the Consultant shall provide a broad range of expertise as indicated in the table below, and the team should preferably have a balanced composition of local and international experts. The consultant shall make available personnel with the qualifications and experience necessary to perform project tasks to a high standard necessary for the completion of each project component and the entire Project. It will be advantageous for the consultant to provide experts who are knowledgeable in more than one discipline such that the various crosscutting issues of the Project could be managed efficiently.

Profile of Experts

The SRBDP is an integrated development initiative that requires a multi-sectoral approach on its implementation. As such, the Team Leader shall have a multi-disciplinary experience in the interventions on the detailed design works of projects/programmes. In particular, He/She should have:

- (a) At least a Masters Degree in Water Resources Engineering or Civil Engineering with a minimum of 20 years in relevant fields;
- (b) Proven capabilities in handling multi-disciplinary donor funded projects of this nature;
- (c) Must have worked in African or Developing countries especially SADC Region and preferably in Malawi and/or Tanzania; and
- (d) Knowledge of River Basin organization or Commission with at least 10 years experience as a Manager.

The other experts of the Consultant's team will have the following profiles:

- (i) A Component Leader having at least a Masters degree in Water Resources with a minimum experience of 15 years in the relevant field and should have a minimum of 5 years experience in River Basin Organization;
- (ii) A Component Leader for SESA and ESIA with at least 15 years of relevant field experience in conducting these studies;
- (iii) An Environmental Specialist with at least a Masters degree in Environmental Management with 10 years relevant experience in water related projects;
- (iv) A Water Resources Economist with at least a Masters degree and with at least 10 years relevant experience in water resources planning;
- (v) A Hydrologist with a Masters Degree in Engineering Hydrology or equivalent and at least 10 years of relevant experience in water resources management.
- (vi) A Component Leader having at least a Masters degree in Hydraulic Engineering with a minimum of 15 years relevant experience in design, construction and supervision of dams construction, river training and bank protection, but also in team leadership in projects of similar and or large size;
- (vii) A Dam Design Engineer with at least a Masters degree in Civil Engineering or equivalent and at least 10 years relevant experience (conventional dams, run-of-river dams, river diversion etc) or a BSc in Civil Engineering or equivalent with at least 15 years experience;
- (viii) A Geo-technical Engineer with at least a Masters degree in Civil Engineering specializing in geo-technical works with 10 years experience, or a BSc in Civil Engineering with at least 15 years experience in geo-technical works;

- (ix) A Social Economist with at least a Masters degree in Social Economics with at least 10 years relevant experience in handling water related issues;
- (x) An Electrical Engineer with at least a Masters Degree and not less than ten (10) years experience in the relevant field;
- (xi) An Irrigation Agronomist with at least a Master of Science degree with relevant experience of at least 10 years in irrigation projects;
- (xii) A Geometrics Engineer with at least a Masters degree and 10 years experience in the relevant field;
- (xiii) A Mechanical Engineer with at least a Masters degree in the relevant field with experience of at least 10 years in hydropower design;
- (xiv) A Civil/Irrigation Engineer with a Masters Degree in Civil/Irrigation Engineering with at least 10 years experience in the relevant field.
- (xv) A Road Engineer with at least a Masters degree in the relevant field with experience of at least 10 years in Road design;
- (xvi) An Ecologist with at least a Masters Degree in Ecology or Biology or Forestry with a minimum of 10 years relevant experience in water related projects;
- (xvii) An Information, Education and Communication Expert with at least a Masters degree in Mass Communication or Journalism with a minimum of 10 years experience in handling water related projects;
- (xviii) Component Leader shall be an Institutional Development Specialist with at least a Masters degree in Human Resources Development with 15 years relevant experience in institutional and human resources development;
- (xix) A Legal Specialist with at least Masters in International Law or Hydro-Politics with at least 10 years relevant experience in handling water related projects; and
- (xx) Business and Marketing Specialist with a Masters degree with at least 10 years experience.

A group of international, Tanzanian and Malawian consultants in co-operation is foreseen, covering at a minimum the indicted subjects. A complete overview of the SRBDP consultancy is shown in the table below.

Indicative Overview of Required Expertise for the Assignment

	Expertise	Input in Man month
	A. CONSULTANT STAFF	
1.	Senior Water Resources Engineer - Team Leader	24
2.	Water Resources Engineer	9
3.	Water Supply & Sanitation Engineer	5
4.	Geologist/Geomorphologist	12
5.	Geotechnical Engineer	9
6.	Road engineer	5
7.	Hydrologist	8
8.	Hydraulic Engineer	12
9.	Chief Dam Design Engineer	4
10.	Dam Design Engineer	12
11.	Electrical Engineer	10
12.	Hydropower Engineer	8
13.	Soil expert	12
14.	Irrigation and Drainage Engineer	16
15.	Agronomist	9

16.	Environmental Expert	14
17.	Sociologist/Gender Expert	14
18.	Land Use Planner	12
19.	Fisheries expert	4
20.	Tourism Expert	3
21.	Economist Business Planner	16
22.	Financial analyst	4
23.	International Water Rights Expert	5
24.	Institutional Expert	6
25.	GIS Specialist	7
26.	Geometrics Engineer	5
	TOTAL	245

One of the international experts should function as team leader. For reasons of effective capacity building, the team should include international Tanzanian and Malawian senior consultants in key specialist categories. It is, however, possible that one individual can be responsible for more than one category. The team of consultants shall be supported by counterpart professional staff from the authorities of the two countries.

As a part of the socio-environmental studies, the active participation of representatives of the local population of the basin is foreseen, for which purpose a participatory working group should be established. This group should be made up of community leaders supported by a local sociologist, representatives from the consultant, representatives from local government authorities and corporations.

For purposes of capacity building and continuity, the two countries shall provide counterpart Staff to the Consultant during the relevant scheduled periods of the study. The Consultant shall propose categories of counterpart staff to match its own staff including the responsibilities of each staff and timing for the consideration and decision by the two countries.

3.0 TIMETABLE AND REPORTING SCHEDULE

The total duration of the assignment is estimated to be 24 months from the date of commencement that will take place one month after Signing of the Contract for mobilization of the Consultant's team. The consultants may however propose a work programme with a shorter duration should they deem it feasible. The four project components will be developed interactively and partly overlapping with the following tentative activity schedule:

Overall Tentative Reporting Schedule

Result	Critical Measurable Indicators	Targets
Mobilisation, Launching Workshop	Project mobilised Workshop successfully completed	M-5
Procurement and consultancy award	Consultancy contract awarded	M-1
Inception Report	Report Approved	M+3
Component I: Shared Vision	Shared Vision Document Approved	M+9
Financial Partner Forum and Round Table	Financial Partner Forum effective and 1 st Round Table successfully completed	M+12
Component I: SRBDP	Interim SRBDP report submitted and sensitised	M+22

Result	Critical Measurable Indicators	Targets
Component II Updated Feasibility Study	Updated Feasibility Study Report Approved	M+21
Component II: Interim Reports on detailed designs and tender documents for major structural investments and on water related social infrastructure	1. Interim Reports submitted and accepted on detailed designs, tender documents, drawings for capital investment projects: <ul style="list-style-type: none"> ▪ Dams, hydropower and associated infrastructure ▪ River Training Stabilisation and Flood Control: ▪ Irrigation and Drainage Works: ▪ Cost Estimates and multipurpose benefit optimisation: 2. Interim Reports submitted and accepted on designs and development plans for water related social infrastructure: <ul style="list-style-type: none"> ▪ Rural electrification ▪ Fisheries and Fish Farming ▪ Water supply development ▪ Promotion of Tourism ▪ Roads and river crossings 	M+20
Component III: SESA	Report submitted and approved	M+9
Component III ESIA	Report submitted and approved	M+19
Component IV: Songwe RBA Convention	RBA Convention Approved	M+14
Component IV: RBA Convention signed	Convention signed by Heads of State Conference	M+16
Component IV: RBA Convention ratifies	RBA Convention ratified by National Assemblies	M+24
Capacity building for IWRM and SRB Business Plan	Capacity building successfully implemented and business plan prepared	M+19
Financial Partner Forum and Round Table	Financial Partner Forum effective and 2 nd Round Table successfully completed	M+23
Quarterly Progress Reports	Reports submitted and accepted	Quarterly
Final Project Report	Draft final report and annexes submitted and presented in workshop, revised and approved	M+24

Provisional Implementation and Reporting Schedule (Months)

	M																													
	-8	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mobilisation and Launching Workshop		☀																												
Consultancy Services Procurement/Contract Award						■																								
Mobilisation of Consultants							■																							
Submission and Approval Inception Report								□	☀	■																				
Component I: Strategic Development Framework																														
Preparation of Shared Vision towards 2050													□	☀	■															
Preparation and approval of Songwe RBDP																										□	☀	■		
Component II: Feasibility Study and Designs																														
Updating Feasibility Study												□		■																
Design major capital investments																									□		■			
Designs social infrastructure																									□		■			
Component III: Safeguarding Measures																														
Strategic E & S Assessment (SESA)													□	☀	■															
Environmental, and Social Impact Assessment (ESIA)																									□	☀	■			
Component IV: Institutional Development																														
RBA Convention preparation, signing and ratification																	□	☀	■	■	■	■	■	■	■	■	■	■	■	■
Capacity building for IWRM and SRB Business Plan																								□	☀	■				
Financial Partner Forum and Round Table																□	☀	■	●											
Overall Reporting:																														
Final Project Report																										□	☀	■		
Monthly Progress Reports												□			□		□				□		□			□				

■	Project Activity	☀	Workshop
□	Draft Document	●	Round Table
■	Final Document	■	Ratification of RBA

4.0 REPORTS

4.1 Inception Report

The Inception Report shall be submitted at the end of month M+1 according to the Implementation and reporting schedule. The draft Inception Report will be submitted in 15 hard copies and in electronic format to the PMU for further distribution to the designated approval bodies and donors. The final version shall be corrected on the basis of the observations and recommendations of the review process and submitted to PMU at the end of month M+3. The Report will be submitted in 16 hard copies and in electronic format.

4.2 Shared Vision 2050 (Component I)

The Shared Vision Report that will be a result of a participatory process involving a broad range of public and private stakeholders shall be submitted to PMU at the end of month M+5 in 30 copies plus electronic format. On the basis of the hearing and approval process that will be organised by PMU that consultant shall submit 30 copies and electronic format of the final report to PMU.

4.3 The Songwe River Basin Development Programme (SRBDP) (Component I)

The reports will be submitted and approved according to the Provisional Implementation and Reporting Schedule. The final report of these sub-components shall be submitted in 16 hard copies and electronic formats to the PMU for distribution and arrangements for approval with the designated steering bodies.

4.4 Updated Feasibility Study (Component II)

The Updated Feasibility Study Report shall be submitted and approved as shown in the Provisional Implementation and Reporting Schedule. The final version shall be corrected on the basis of the observations and recommendations of the review process and be submitted in 20 hard copies and in electronic format.

4.5 Detailed Designs Interim Reports (Component II)

The Updated Feasibility and Detailed Design Reports will be prepared as Interim reports according to the Reporting Schedule. The reports shall contain all drawings, specifications, and annexes for the contract packages and be supported by a report containing the design parameters. The reports shall contain necessary plans and modalities for making the projects bankable and the Tender Documents shall contain, for each of the contract packages, information about: (i) Instructions to bidders; (ii) Conditions of contract; (iii) Detailed Specifications; and (iv) Drawings. The Interim Reports will be presented as annex documents that will serve as a basis for the respective Chapters in the Final Project Report. Each report will be submitted to PMU in 10 hard copies and in electronic format.

4.6 SESA and ESIA Reports (Component III)

The Strategic Environmental and Social Assessment (SESA) and the Environmental and Social Impact Assessment (ESIA) will be submitted as independent reports shown in the Reporting Schedule. Environmental authority requires 15 hard copies of draft final report for review and five copies of the final report. However, sufficient extra copies shall be submitted to the client for internal use. Each report shall be submitted also in soft copies on CD-ROM.

4.7 Songwe River Basin commission Documents (Component IV)

4.7.1 Preparation of a River Basin commission

This component will require the preparation of

- f) a draft/final Convention and related texts and documents for the basin commission under the auspices of the SADC Protocol on Shared Watercourses as a fundamental strategic instrument for integrated management and development of land and water resources between the two countries;
- g) Preparation of a Road Map for the development and approval of the Convention towards the signing by Heads of State and subsequent ratification by National Assemblies; and
- h) Facilitation of hearing, approval and signing of Convention and associated documents expert group sessions and workshops and support to the establishment of the commission.

The documents will be submitted and approved according to the Provisional Implementation and Reporting Schedule.

4.7.2 SRB Business Plan and capacity building for IWRM

The preparation and approval of the “Business Plan” for the emerging Songwe River Basin commission, training and capacity building programmes, and action plan for communication will take place as stated in the Implementation and Reporting Schedule. .

Documents to be submitted in draft and final form as shown in the Provisional Implementation and Reporting Schedule and the Institutional Capacity Building Report to be submitted in draft and final form as indicated in the Schedule. The number of copies to PMU will be 30 in each case plus electronic versions.

4.7.3 Partnership Forum for Financial Resources Mobilisation

The Consultant shall prepare a Guideline for the Forum of Financial Partners and the proceedings from the Roundtable as shown in the Provisional Implementation and Reporting Schedule.

4.8 Final Project Report

The Draft Final Report for the Assignment shall be submitted as shown in the Provisional Implementation and Reporting Schedule and will contain a summary of the work carried out under this assignment contract accompanied by annex reports from each of the Components. The Final Report shall comprise an integrated executive synthesis of the outcomes of the 4 Project Components. The Consultant shall also prepare a public oriented presentation (pamphlet) of the SRBDP and the agreed long term Shared Vision for joint management and development of the Songwe River Basin. The final version shall be corrected on the basis of the

observations and recommendations of the review process and submitted to PMU at the end of month 24 The Report will be submitted in 30 hard copies and in electronic format. The number of copies to be printed of the PR publication will be decided.

4.9 Progress Reports

Quarterly Progress Reports will be prepared and submitted in 6 hard copies and in electronic format throughout all the phases of the assignment. They will outline the status and progress of work during each quarter and will be submitted within seven days of the end of the relevant period and contain the following details:

- (a) Work completed;
- (b) Information pertaining to adherence to timetable, staff plan, major variation of services approved during the period (if any), payment situations;
- (c) Photographs of any relevant features of the assignment;
- (d) Register of Consultants' staff, giving the number in each grade;
- (e) Inventory of quantities and types of material in stock; and
- (f) A summary of information about the geotechnical works, such as the weather, incidents, delaying factors, safety etc.

5.0 ORGANISATION AND MANAGEMENT

The figure below shows overall project management and oversight structure. The Ministry of Irrigation and Water Development of The Republic of Malawi and the Ministry of Water and Irrigation of The United Republic of Tanzania are designated as the focal ministries, with Ministry of Irrigation and Water Development of The Republic of Malawi designated as the Project Executing Agency (EA). The Joint Committee of Officials (JCO) will be the highest decision making body of the Project and hence responsible for the management and coordination of the Project and the Programme and report to the Council of Ministers for policy guidance. The Joint Steering Committee (JSC) will comprise two National Coordinators and representatives from Local Governments, communities, private sector, and major stakeholder groups such as women organisations. A Project Management Unit (PMU) headed by a full-time Project Manager (PM) will be established to undertake the day to day management of the Project.

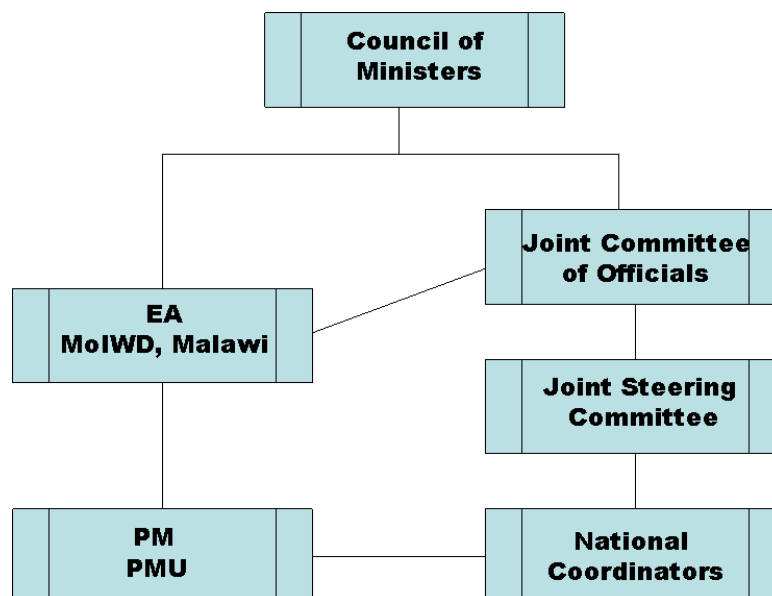


Figure 2: Project Management and Oversight Structure

6.0 OBLIGATIONS OF THE CLIENT

The two Governments will assist the Consultant on the following:

6.1 Reference Materials and Information

- (i) Information on customs, taxes and import duties and restrictions to be imposed by the Government of The Republic of Malawi and the Government of The United Republic of Tanzania;
- (ii) Copies of previous study reports and any other relevant documents; and
- (iii) Consultation with relevant Ministries and other relevant institutions.

6.2 National Counterpart Staff from Malawi and Tanzania

The two Governments will each provide counterpart staff to be trained and utilized in this project. The Consultant shall produce a programme for the knowledge transfer to the counterpart staff to be approved by the Client before commencement of the assignment. The Counterpart staff will be in the following areas of expertise:

National Counterpart Staff from Malawi and Tanzania

	Expertise	TOTAL
1	Water Resources Engineer	24
2	Hydropower Engineer	8
3	Hydrologist	10
4	Hydraulic Engineer	10
5	Electrical Engineer	12
6	Geotechnical Engineer	10
7	Sociologist/Gender Expert	12
8	Environmental Expert	12
9	Land Use Expert	8
10	Soils Scientist	12
11	Agronomist	8
12	Irrigation and Drainage Engineer	14
13	Legal Expert	6
14	Land Surveyors	10
15	Civil Engineer	12
16	Economist	18
17	GIS Specialist	14
	B. TOTAL COUNTERPARTS	200

6.3 Liaison

The two Governments will provide liaison through the Project Management Unit (PMU) and will ensure that the Consultant has access to all information required for timely execution of the assignment.

6.4 Immigration, Residence Permits and Work Permits

The two Governments will provide the Consultant with any assistance required to obtain necessary immigration and residence work permits for the approved expatriate personnel and their dependants.

6.5 Project Offices and Location

The Client will provide a fully furnished office premises for the Project to accommodate the Project management staff and the Consultants' team at Kyela, Tanzania.

7.0 OBLIGATIONS OF THE CONSULTANTS

- (i) The Consultants shall provide competent personnel required to execute their assignment in a timely and efficient manner;
- (ii) The Consultants shall provide accommodation to his personnel; and
- (iii) The Consultants are expected to be fully self sufficient in all respects for undertaking the assignment and is therefore expected to procure all the necessary office equipment, supplies, tools and vehicles for use, all of which should be in acceptable quality and standards, and shall all the time in the course of the assignment be used with due care including proper management and maintenance.

At the completion, the Consultants shall handover to the Client all the equipment, tools and vehicles procured under the project.

ANNEX 4: TERMS OF REFERENCE FOR PROJECT MANAGER

**SONGWE RIVER BASIN DEVELOPMENT
PROGRAMME (SRBDP)**

DETAILED DESIGN AND INVESTMENT PREPARATION

**PROCUREMENT OF THE SERVICES OF A
PROJECT MANAGER**

TERMS OF REFERENCE

A JOINT PROGRAMME BETWEEN THE GOVERNMENTS OF

THE UNITED REPUBLIC OF TANZANIA

AND

THE REPUBLIC OF MALAWI

Introduction

The Songwe River Basin has an area of about 4,200 square kilometres, the area of which covers parts of Chitipa and Karonga Districts in Malawi, Kyela, Ileje, Mbozi and Mbeya Districts in Tanzania. The basin offers such opportunities as agricultural development; hydropower; fisheries; water supply and sanitation, and recreation. On the other hand, the basin has its own challenges such as higher population densities which are above the national averages, frequent flooding during the rainy seasons which usually affects up to about 15,000 hectares and about 52,000 people in the basin and a meandering river course (mostly during floods) which leads to the shifting Malawi/Tanzania boundary which is marked by the thalweg of the Songwe River.

The two Governments took bold steps in implementing the Songwe River Basin Development Programme in 2004 by establishing management and monitoring institutions on three levels namely: Council of Ministers for political and policy direction, the Joint Committee of Officials for programme management and coordination and the Joint Steering Committee for programme operation. Besides the above, the two governments jointly initiated the Preliminary and Feasibility Studies from 2001 to 2003 from which the following areas of intervention have been identified to have potential for improving the socio-economic status of the inhabitants of the basin and stabilizing the course of the Songwe River:

- (i) Dams for flood control and hydropower, and river course training for channel stabilization;
- (ii) Hydropower generation and transmission;
- (iii) Agricultural development;
- (iv) Fisheries development and management;
- (v) Feeder roads network development and tourism;
- (vi) Water supply and sanitation for domestic and industrial use;
- (vii) Land use, management and security of land tenure; and
- (viii) Institutional development.

The two Governments believe that implementation of the SRBDP will promote sustainable economic growth in the Songwe River Basin and thus improve the social and economic welfare of the people living in and around the basin and in the two countries as a whole. The Songwe River Course Stabilization Project which has led to the Songwe River Basin Development Programme is viewed by the two Governments as one of the most successful bi-lateral programmes so far under implementation in accordance with the General Cooperation Agreement of 1991. It is therefore the desire of the two Governments that Cooperating Partners, collectively and/or individually will take part in the implementation so that the aspirations of the SRBDP are realized.

The two Governments further wish to procure the services of a Project Manager to coordinate the implementation of the detailed design studies and prepare the investment plans of four identified components of the programme namely: i) Preparation of a Shared Vision 2050 and a Songwe River Basin Development Programme (SRBDP); ii) Updating feasibility study, detailed design and preparation

of capital investment projects; iii) SESA and ESIA and iv) Institutional Development. The services of the Project Manager will be financed with grant resources from the African Water Facility.

Scope of Services

The Project Manager will principally be responsible for heading the Project Management Unit that will be set up to coordinate the activities of the consortium of consulting firms (“the consultant”) whose services will be procured under the Project for carrying out all the studies of the Project. In this regard, the Project Manager once in place shall coordinate all activities related to the recruitment of the consultant.

The Project Manager’s other responsibilities will include the preparation and the dissemination to all stakeholders of Project Progress Reports, namely the quarterly progress reports and the Project Completion Report. The Project Manager will equally facilitate all the meetings and participate in the preparation and the dissemination of reports of the working sessions of the organs of the organizational structure of the Project Management and oversight. These organs include the Council of Ministers, the Joint Committee of Officials, the Joint Steering Committee and the National Coordinators.

The Project Manager will be responsible for the management of the funds and all other assets of the Project and will in this respect, procure and pay for all goods and services required for the implementation of the study in accordance with the approved procurement rules and procedures. He/she will also prepare the financial statements of the accounts of project and facilitate the auditing of these statements by independent auditors.

Time Frame

The Project is expected to be completed within a period of thirty-two (32) months, comprising 24 months for the implementation of the activities of the consortium of consulting firms and 8 months for the recruitment of the consultant and the carrying out of activities leading up to Grant effectiveness.

A yearly assessment will be carried to evaluate the performance of Project Manager and determine his/her suitability to continue the assignment.

Expertise Required

The SRBDP is an integrated development initiative, which requires a multi-sectoral approach to its implementation. As such, the Project Manager shall have a multi-disciplinary experience in the detailed design of water related infrastructure with adequate experience in the management of river basin projects/programmes. The Project Manager should be a Tanzanian or a Malawian, in particular, she/he should have:

- (i) At least a Masters Degree in Water Resources Management or Civil Engineering with a minimum of 20 years experience in the management of river basin projects/programmes;
- (ii) Familiarity with the procedures of the African Development Bank is a requirement;
- (iii) Proven capabilities in handling multi-disciplinary donor funded projects of this nature;
- (iv) Must have worked in Africa or other developing countries especially in SADC Region and preferably in Malawi and/or Tanzania;
- (v) Proven capabilities in and knowledge of River Basin organization;
- (vi) And will have excellent communication skills and be fluent in English.

ANNEX 5: SADC PROTOCOL ON SHARED WATERCOURSES [EXTRACT]

Revised **Protocol on Shared Watercourses in the Southern African Development Community (SADC)**

PREAMBLE

We, the Heads of State or Government of:

The Republic of Angola
The Republic of Botswana
The Democratic Republic of the Congo
The Kingdom of Lesotho
The Republic of Malawi
The Republic of Mauritius
The Republic of Mozambique
The Republic of Namibia
The Republic of Seychelles
The Republic of South Africa
The Kingdom of Swaziland
The United Republic of Tanzania
The Republic of Zambia
The Republic of Zimbabwe

BEARING in mind the progress with the development and codification of international water law initiated by the Helsinki Rules and that the United Nations subsequently adopted the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses;

RECOGNISING the relevant provisions of Agenda 21 of the United Nations Conference on Environment and Development, the concepts of environmentally sound management, sustainable development and equitable utilization of shared watercourses in the SADC Region;

CONSIDERING the existing and emerging socio-economic development programmes in the SADC Region and their impact on the environment;

DESIROUS of developing close co-operation for judicious, sustainable and coordinated utilization of the resources of the shared watercourses in the SADC Region;

CONVINCED of the need for coordinated and environmentally sound development of the resources of shared watercourses in the SADC Region in order to support sustainable socioeconomic development;

RECOGNISING that there are as yet no regional conventions regulating common utilization and management of the resources of shared watercourses in the SADC Region;
MINDFUL of the existence of other Agreements in the SADC Region regarding the common utilization of certain watercourses; and

IN ACCORDANCE with Article 22 of the Treaty, have agreed as follows:

Article 2 ; Objective

The overall objective of this Protocol is to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilization of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation. In order to achieve this objective, this Protocol seeks to:

- a) promote and facilitate the establishment of shared watercourse agreements and Shared Watercourse Institutions for the management of shared watercourses;
- b) advance the sustainable, equitable and reasonable utilization of the shared watercourses;
- c) promote a coordinated and integrated environmentally sound development and management of shared watercourses;
- d) promote the harmonization and monitoring of legislation and policies for planning, development, conservation, protection of shared watercourses, and allocation of the resources thereof; and 3
- e) promote research and technology development, information exchange, capacity building, and the application of appropriate technologies in shared watercourses management.”

Article 3 : General Principles

For the purposes of this Protocol the following general principles shall apply:

1. The State Parties recognize the principle of the unity and coherence of each shared watercourse and in accordance with this principle, undertake to harmonize the water uses in the shared water courses and to ensure that all necessary interventions are consistent with the sustainable development of all Watercourse States and observe the objectives of regional integration and harmonization of their socio-economic policies and plans.
2. The utilization of shared watercourses within the SADC Region shall be open to each Watercourse State, in respect of the watercourses within its territory and without prejudice to its sovereign rights, in accordance with the principles contained in this Protocol. The utilization of the resources of the watercourses shall include agricultural, domestic, industrial, navigational and environmental uses.
3. State Parties undertake to respect the existing rules of customary or general international law relating to the utilization and management of the resources of shared watercourses.
4. State Parties shall maintain a proper balance between resource development for a higher standard of living for their people and conservation and enhancement of the environment to promote sustainable development.
5. State Parties undertake to pursue and establish close co-operation with regard to the study and execution of all projects likely to have an effect on the regime of the shared watercourse.

6. State Parties shall exchange available information and data regarding the hydrological, hydro geological, water quality, meteorological and environmental condition of shared watercourses.

7. a) Watercourse States shall in their respective territories utilize a shared watercourse in an equitable and reasonable manner. In particular, a shared watercourse shall be used and developed by Watercourse States with a view to attain optimal and sustainable utilization thereof and benefits there from, taking into account the interests of the Watercourse States concerned, consistent with adequate protection of the watercourse for the benefit of current and future generations.

b) Watercourse States shall participate in the use, development and protection of a shared watercourse in an equitable and reasonable manner. Such participation includes both the right to utilize the watercourse and the duty to co-operate in the protection and development thereof, as provided in this Protocol.

8. a) Utilization of a shared watercourse in an equitable and reasonable manner within the meaning of Article 7(a) and (b) requires taking into account all relevant factors and circumstances including: (i) geographical, hydrographical, hydrological, climatical, ecological and other factors of a natural character; (ii) the social, economic and environmental needs of the Watercourse States concerned; (iii) the population dependent on the shared watercourse in each Watercourse State; (iv) the effects of the use or uses of a shared watercourse in one Watercourse State on other Watercourse States; (v) existing and potential uses of the watercourse; (vi) conservation, protection, development and economy of use of the water resources of the shared watercourse and the costs of measures taken to that effect; and (vii) the availability of alternatives, of comparable value, to a particular planned or existing use.

(b) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is an equitable and reasonable use, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

9. State Parties shall deal with planned measures in conformity with the procedure set out in Article 4 (1).

10 a) State Parties shall, in utilizing a shared watercourse in their territories, take all appropriate measures to prevent the causing of significant harm to other Watercourse States.

b) Where significant harm is nevertheless caused to another Watercourse State, the State whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard for the provisions of paragraph (a) above in consultation with the affected States, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.

c) Unless the Watercourse States concerned have agreed otherwise for the protection of the interests of persons, natural or juridical, who have suffered or are under a serious threat of suffering significant transboundary harm as a result of activities related to a shared watercourse, a Watercourse State shall not discriminate on the basis of nationality or residence or place where the injury occurred, in granting to such persons, in accordance with its legal system, access to judicial or other procedures, or a right to claim compensation or other relief in respect of significant harm caused by such activities carried on in its territory.