

AFRICAN DEVELOPMENT FUND

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REPUBLIC OF TANZANIA

MONDULI DISTRICT WATER PROJECT

APPRAISAL REPORT

**INFRASTRUCTURE DEPARTMENT
NORTH, EAST AND SOUTH REGION (ONIN)**

SEPTEMBER 2003

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PROJECT INFORMATION

The information given hereunder is intended to provide some guidance to prospective suppliers, contractors, consultants and all persons interested in the procurement of goods and services for projects approved by Boards of Directors of the Bank Group. More detailed information and guidance should be obtained from the Executing Agency of the Borrower.

1. COUNTRY : United Republic of Tanzania
2. NAME OF PROJECT : Monduli District Water Project
3. LOCATION : Monduli District in Arusha Region, Tanzania
4. BORROWER : Government of the United Republic of Tanzania (GOT)
5. EXECUTING AGENCY : District Council of Monduli
P O Box 1,
Monduli,
TANZANIA
Tel: + 255 27 253 8005/6
Fax: + 255 27 253 8136
Email: dedmonduli@yahoo.com
6. PROJECT DESCRIPTION : The project comprises the following components:
 - A. Capacity Building
 - B. Water Supply Infrastructure
 - C. Environment and Watershed Protection and Management
 - D. Sanitation Improvement
 - E. Project Management
 - F. Consultancy Services and Studies
7. TOTAL COSTS (UA): UA 17.234 million
Foreign Exchange : UA 12.651 million
Local Costs : UA 4.583 million
8. ADF GRANT
Amount : UA 15.511 million

9. OTHER SOURCES OF FINANCE

- | | | |
|---|---|---|
| GOT | : | UA 1.723 million |
| 10. <u>DATE OF APPROVAL</u> | : | November 26, 2003 |
| 11. <u>ESTIMATED STARTING DATE OF PROJECT & DURATION</u> | : | June 2004, 36 Months |
| 12. <u>PROCUREMENT</u> | : | In accordance with the Rules of Procurement of the African Development Bank Group. Procurement of goods and works will be in accordance with the Bank's Rules of Procedure for the Procurement of Goods and Works using the relevant Standard Bidding Documents, while for services it shall be in accordance with Guidelines for Use of Consultants. |
| 13. <u>CONSULTANCY SERVICES REQUIRED AND STAGE OF SELECTION</u> | | Consultancy services will be required for supervision of construction works They shall be acquired in accordance with Bank Group rules through short-listing. |
| 14. <u>TECHNICAL ASSISTANCE</u> | | Required for (a) Capacity Building (b) Project Management and (c) a number of diagnostic and other <i>ad hoc</i> studies. |
| 15. <u>ENVIRONMENTAL CATEGORIZATION</u> | | Category II |

CURRENCY EQUIVALENTS AND MEASURES**CURRENCY EQUIVALENTS**

(August 2003)

Currency Unit = Tanzania Shilling (ISO TZS)

UA 1.00 = TZS 1467.25

UA 1.00 = US\$ 1.39195

US\$ 1.00 = TZS 1,054.10

FINANCIAL YEAR

July 1 – June 30

MEASURES

l/c/d = liters per capita per day

m³ w = cubic meterm³/d = cubic meter per day

Ml/d = million liters per day

Mm³ = million cubic meters

km = kilometer

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LIST OF ABBREVIATIONS

ADB/ ADF	=	African Development Bank / African Development Fund
AFD	=	Agence française de Développement
ATP/WTP	=	Ability to Pay/ Willingness to Pay
ASDP/ ASDS	=	Agriculture Sector Development Policy/Strategy
DOE	=	Department of Environment (Office of the Vice President)
DUA	=	Dip Users Association
EIB	=	European Investment Bank
EIRR/FIRR	=	Economic/Financial Rate of Return
EU	=	European Union
GDP	=	Gross Domestic Product
GOT	=	Government of the United Republic of Tanzania
GPN	=	General Procurement Notice
ICB	=	International Competitive Bidding
LGA	=	Local Government Act
LGRP	=	Local Government Reform Programme
LDD	=	Livestock Development Department
LRMC	=	Long Run Marginal Cost
MDC	=	Monduli District Council
MDG	=	Millennium Development Goals
MOF	=	Ministry of Finance
MWLD	=	Ministry of Water and Livestock Development
MOV	=	Means of Verification
MTEF	=	Medium Term Expenditure Framework
MTR	=	Mid Term Review
NAWAPO	=	National Water Policy
NEAP	=	National Environmental Action Plan
NEMC	=	National Environmental Management Council
NS	=	Narrative Summary
O&M	=	Operations and Maintenance
PCR	=	Project Completion Report
PIT	=	Project Implementation Team
PORALG	=	Presidents Office; Regional Administration and Local Governments
RBO	=	River Basin Office
RWSD	=	Rural Water Supply Department
RWSP	=	Rural Water Supply Programme
SPN	=	Specific Procurement Notice
SWAP	=	Sector Wide Approach
UA	=	Unit of Account
VI	=	Verifiable Indicators
WB	=	World Bank
WUA	=	Water Users Association
WSC	=	Water and Sanitation Committee

Tanzania

COMPARATIVE SOCIO-ECONOMIC INDICATORS

	Year	Tanzania	Africa	LDC	DC
Basic Indicators					
Area ('000 Km ²)		945	30 061	80 976	54 658
Total Population (millions)	2001	36.0	811.6	4,940.3	1,193.9
Urban Population (% of Total)	2001	32.5	38.0	40.4	76.0
Population Density (per Km ²)	2001	38.1	27.0	61.0	21.9
GNI per Capita (US \$)	2000	280	671	1 250	25 890
Labor Force Participation - Total (%)	2000	51.5	43.1
Labor Force Participation - Female (%)	2000	50.2	33.8
Gender -Related Development Index Value	2000	0.436	0.476	0.634	0.916
Human Develop. Index (Rank among 174 countries)	2000	151	n.a.	n.a.	n.a.
Popul. Living Below \$ 1 a Day (% of Population)	1993	19.9	45.0	32.2	...
Demographic Indicators					
Population Growth Rate - Total (%)	2001	2.4	2.4	1.5	0.2
Population Growth Rate - Urban (%)	2001	6.2	4.1	2.9	0.5
Population < 15 years (%)	2001	44.7	42.4	32.4	18.0
Population >= 65 years (%)	2001	2.5	3.3	5.1	14.3
Dependency Ratio (%)	2001	89.2	85.5	61.1	48.3
Sex Ratio (per 100 female)	2001	97.5	99.4	103.3	94.7
Female Population 15-49 years (% of total population)	2001	23.5	23.6	26.9	25.4
Life Expectancy at Birth - Total (years)	2001	51.1	52.5	64.5	75.7
Life Expectancy at Birth - Female (years)	2001	52.1	53.5	66.3	79.3
Crude Birth Rate (per 1,000)	2001	38.4	37.3	23.4	10.9
Crude Death Rate (per 1,000)	2001	13.1	14.0	8.4	10.3
Infant Mortality Rate (per 1,000)	2001	74.6	79.6	57.6	8.9
Child Mortality Rate (per 1,000)	2001	119.1	116.3	79.8	10.2
Maternal Mortality Rate (per 100,000)	1998	530	641	491	13
Total Fertility Rate (per woman)	2001	5.1	5.1	2.8	1.6
Women Using Contraception (%)	1999	25.4	...	56.0	70.0
Health & Nutrition Indicators					
Physicians (per 100,000 people)	1995	4.3	36.7	78.0	287.0
Access to Safe Water (% of Population)	2000	54.0	60.4	72.0	100.0
Access to Health Services (% of Population)	1999	93.0	61.7	80.0	100.0
Access to Sanitation (% of Population)	2000	90.0	60.5	44.0	100.0
Percent. of Adults (aged 15-49) Living with HIV/AIDS	2001	7.8	5.7
Incidence of Tuberculosis (per 100,000)	2000	155.0	105.4	157.0	24.0
Underweight Children (% of children under 5 years)	1999	29.4	25.9	31.0	...
Daily Calorie Supply per Capita	1999	1 940	2 408	2 663	3 380
Public Expenditure on Health (as % of GDP)	1998	1.3	3.3	1.8	6.3
Education Indicators					
Gross Enrolment Ratio (%)					
Primary School - Total	1997	66.5	80.7	100.7	102.3
Primary School - Female	1997	66.1	73.4	94.5	101.9
Secondary School - Total	1997	5.6	29.3	50.9	99.5
Secondary School - Female	1996	4.9	25.7	45.8	100.8
Adult Illiteracy Rate - Total (%)	2001	23.2	37.7	26.6	1.2
Environmental Indicators					
Land Use (Arable Land as % of Total Land Area)	1999	4.2	6.0	9.9	11.6
Annual Rate of Deforestation (%)	1995	1.0	0.7	0.4	-0.2
Annual Rate of Reforestation (%)	1990	8.0	4.0
Per Capita CO2 Emissions (metric tons)	1997	...	1.1	2.1	12.5

Source : Compiled by the Statistics Division from ADB databases; UNAIDS; World Bank Live Database and United Nations Population Division.

Notes: n.a. Not Applicable ; ... Data Not Available.

TANZANIA - MONDULI DISTRICT WATER PROJECT
PROJECT MATRIX

Project Team

Kometsi Khotle, Egbert H.J. Schroten, Daniel Lekoetje, Ms Motselisi Lebesa, Mercuria Assefaw, Ms Gisela Geisler, Idrissa Samba, and Umar Lawal

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions
<p>Sector Goal(s):</p> <p>Improved coverage of water and sanitation leading to sustainable livelihood in the form of improved health of population, reduction in livestock vulnerability and improved productivity, and increase in other water based economic activities;</p>	100% basic water service coverage in the selected villages being 39% of the district population by 2007.	PRSP M & E system Projects M&E Subcomponent, and Borrowers MTR and PCR Report	<p>(Goal to Super-goal):</p> <p><i>Improved health, sustainable livelihoods and greater gender equity contribute to poverty reduction</i></p>
	35% increase in households constructing appropriate sanitation systems as result of the promotion; and 50% reduction in water related diseases	Borrowers MTR and PCR District Health Statistics	
	Reduction in livestock mortality due to displacement in the dry seasons	Project's ESMMMP	
	Reduction in time spent by women in water collection from 16hrs to max. 2hrs per household.	PRSP M & E system and Project's M&E subcomponent	
<p><u>Objective</u></p> <p>Population of 18 villages and two town settlements have adequate and sustainable access to safe, and reliable drinking water supply to meet demand by 2011; enhanced awareness of sanitation and health; year round availability of water for livestock.</p>	<p>Water supply facilities constructed by 2007 with capacity to meet basic drinking water demands of population of 109,000 by 2011 within walking distance acceptable to the communities and of 143,000 livestock units by 2011.</p> <p>Socially acceptable sanitation identified and health education messages understood by at least 80% of the population of the project area by 2007.</p>	<p>Project's M&E subcomponent MTR and PCR Reports of the Borrower and the Bank Group PRSP M & E system</p>	<p>The residents of the beneficiary villages actually use and properly manage the facilities installed; and</p> <p>Droughts more severe than allowed in the design do not occur</p> <p>Population growth rates remains normal</p> <p>Livestock numbers kept within the carrying capacity of the land</p>
<p><u>Outputs</u></p>			
<p>A. Capacity Building provided</p>	<p>Community Managed Water Entities established for Monduli District Centre and Namanga Border Town by 2005.</p> <p>Water and Sanitation Committees established in the remaining 18 communities by 2005</p> <p>Management systems established in all "authorities" and entities and Support Team and communication infrastructure established by 2007.</p> <p>Community Awareness, health education and access to information and enhanced through Training and PRA.</p>	<p>Quarterly Progress Reports and Supervision Mission Reports</p> <p>Mid Term Review Report</p> <p>Quarterly Progress Reports and Supervision Mission Reports</p>	<p>Timely implementation</p> <p>No cost overruns</p> <p>Adequate numbers of personnel available for training for management</p>
<p>B. Water Supply Infrastructure provided</p>	<p>8 Spring sources developed for 7 villages,</p> <p>18 Boreholes drilled for 6 villages,</p> <p>7 Surface Impoundments rehabilitated in 4 villages and</p> <p>8 new ones built in 8 villages for raw water supply</p>		
	<p>Transmission Mains, Distribution Storage and Distribution Networks constructed in 12 Centres.</p> <p>Water carting, Household water treatment systems, and Rainwater Harvesting introduced in areas using distant surface water sources on demand basis.</p>	<p>Mid Term Review Report</p> <p>Progress and Interim Study Reports</p>	<p>Trained personnel retained in the communities and in the Authority</p> <p>Adequate monitoring maintained beyond the project implementation phase</p>

Narrative Summary (NS)	Verifiable Indicators (OVI)	Means of Verification (MOV)	Important Assumptions
C. Environment Watershed Protected	<p>Watershed management measures implemented, and resource management rules developed and operational, including pasture management etc.</p> <p>Pasture management plans implemented in the catchment of water sources</p> <p>Complimentary Investments in improvement of animal health made to enhance gains to livestock</p>	<p>Mid Term Review Report</p> <p>Progress and Interim Study Reports</p>	<p>implementation phase</p> <p>Funding available for implementation of recommendations</p>
D. Sanitation improvement	<p>Appropriate sanitation methods identified</p> <p>Selected private manufacturer of Sanitation components identified and trained</p> <p>Information Communication and Education messages made available to all schools and health centres in the project area.</p> <p>Demonstration units constructed Markets and village government centers</p>	<p>Mid Term Review Report</p> <p>Progress and Interim Study Reports</p>	
E. Project well managed	<p>Project implemented effectively within 10% of the estimate cost, time targets</p>	<p>Mid Term Review Report</p> <p>Progress and Interim Study Reports</p>	
-			
Inputs/Activities			
<p><u>Capacity Building:</u></p> <p>Community Mobilisation</p> <p>Train Community Leaders, Committees and the Support Team</p> <p>Establish Entity Systems</p> <p>Participatory Awareness Creation</p> <p><u>Water Supply Infrastructure:</u></p> <p>Recruit S/V Consultants Drill Tube-wells</p> <p>Implement Civil Works and Community sub-projects</p> <p><u>Environment and Watershed Protection:</u></p> <p>Assist Resource Management Plans and by-Laws</p> <p>Appraise community sub-projects, incl. HIV & Malaria</p> <p>ESMMP</p> <p><u>Sanitation:</u></p> <p>Studies of appropriate Sanitation</p> <p>Training for private manufacture of components</p> <p>Construction of Demonstration Units</p> <p><u>Project Management and Project Audit</u></p> <p>Recruit Technical Support</p> <ul style="list-style-type: none"> • Constitute PIT • Recruitment of Consultants, <p>Maintain Project Accounts and Disbursement</p> <p><u>Supervision Consultancy</u></p> <p>Supervise Works, Monitor Progress</p>	<p><u>Project Costs</u></p> <p>Total Costs: UA 17.23m</p> <p>Foreign Exc. UA 12.65m</p> <p>Local Costs UA 4.58</p> <p><u>Sources of Finance</u></p> <p>ADF Grant UA 15.5 m</p> <p>Govt. UA 1.7 m</p> <p><u>Expenditure Schedule</u></p> <p>2004/5 UA 4.09m</p> <p>2005/6 UA 7.42m</p> <p>2006/7 UA 5.8m</p> <p>Total.....UA 17.2m</p>	<p>Quarterly Progress Reports and Supervision Mission Reports</p>	<p>Timely effectiveness of Loans and Grants</p> <p>Timely release of counterpart funds</p> <p>Communities make their up-front contribution in adequate time not to delay commencement.</p> <p>Competent project Management</p>

EXECUTIVE SUMMARY

PROJECT BACKGROUND

The Monduli District Water Supply Project originated with the Government of Tanzania's request in the nineties for the Bank Group to finance a water supply project in the area of Mto wa Mbu. Subsequent studies examined needs at the level of the Monduli District and proposed a project in areas of highest need as determined by criteria established by the representatives of beneficiaries. The Bank Group preparation and appraisal missions have in the framework of stakeholder consultations, confirmed the project's relevance, and identified complementary components to enhance benefits.

The project contributes to increase in coverage of rural water supply for domestic and livestock consumption, to community awareness of the need for better sanitation, to overall natural resources management in an arid area, and consequently to reduction of water related poverty in the selected areas of the Monduli District.

PURPOSE OF THE GRANT

The ADF grant of UA 15.51 million, covering 90 % of the total project costs, will be used to finance 100% of the foreign exchange (UA12.65 million) and 62.4% of the local cost (UA2.86 million).

SECTOR GOAL AND PROJECT OBJECTIVE

The project will contribute towards meeting the following sector goal: Improved coverage of water and sanitation leading to sustainable livelihood in the form of improved health of population, reduction in livestock vulnerability and improved productivity, and increase in other water based economic activities.

Project objective: Population in eighteen villages and two settlements have adequate and sustainable access to safe, and reliable drinking water supply to meet demand by 2011, enhanced awareness of sanitation and health, and year round availability of water for livestock.

BRIEF DESCRIPTION OF THE OUTPUTS

In order to achieve these objectives the project will focus on:

- (i) Capacity Building at the individual, community and District Council levels
- (ii) Provision of Water Supply Infrastructure for domestic and livestock consumption
- (iii) Environment and Watershed Protected in the project centers
- (iv) Sanitation Improvement for the residents of the project area, and
- (v) Project Management and Works Supervision

PROJECT COSTS

The total project cost is estimated at UA 17.234 million out of which UA 12.651 million (73.4%) will be in foreign currency and UA 4.583 million (26.6%) will be in local currency.

SOURCES OF FINANCE

The African Development Fund and the Government of Tanzania will finance the project. The ADF grant, UA 15.511 million, will be utilized to finance part of the costs of all components and categories. The ADF contribution representing 90% of the total costs will be utilized to cover 100% of the foreign exchange costs and 62.4% of local costs.

The Government of Tanzania's contribution of UA 1.723 million, representing 10% of the total costs will be utilized to cover the remainder of local costs.

PROJECT IMPLEMENTATION

The project will be implemented over a period of 36 months from July 2004 to June 2007. The Monduli District Council will be the Executing Agency in line with the Government's Local Government Reform Policy. A Technical Support Team will be recruited to advise the Project Implementation Team and Supervision Consultants will be recruited to supervise works execution.

CONCLUSIONS AND RECOMMENDATIONS

The project will meet one of the most critical needs of a population living under the harsh conditions of an arid environment, vulnerable to variations in annual rains and to inaccessibility of suitable water sources for domestic and livestock consumption. It will also address the inherent fragility of such environments to enhance pasture management while protecting watersheds from degradation, and catering for wildlife.

It is recommended that a Grant not exceeding UA 15.511 million from the ADF be given to the Government of Tanzania for the purposes of implementing the project as described in this report, subject to conditions specified in the Protocol of Agreement.

ORIGIN AND HISTORY OF THE PROJECT

1.1 From the time following independence, the Government of Tanzania (GOT) has set as one of its goals to provide all of its population with adequate water supply, a goal which remained unmet, despite programmes in the seventies and the eighties, national and international water decade programmes, thereby requiring new programmes to be formulated in a new policy environment.

1.2 The present project was born out of a request of the GOT for the Bank to fund a project of rural water supply in the areas of Mto wa Mbu. The request led to a study financed by the Bank Group that extended the scope more comprehensively to the entire district of Monduli, so as to identify priority areas, and incorporated principles of participatory approach to planning and management. The study recognized the exceptional value the residents attached to water for livestock consumption and therefore included solutions that incorporated this aspect.

1.3 A consequence of this consideration for livestock, coupled with the difficulty of access to water sources given the arid environment and the dispersed disposition of the settlements in the areas is that solutions worked out to be expensive. As a result the study proposed solutions that in many areas were based on surface storage of water with little treatment and walking distances that are significant improvements from the status quo.

1.4 The study resulted in a Feasibility Study covering the entire district and detailed designs of schemes selected on criteria agreed with the stakeholders. Based on these outputs and following a Government request for financing in June 2002, the Bank Group undertook a preparation mission in 2002, followed by a pre-appraisal mission in April 2003. These two missions included stakeholder consultations, the first limited to the key staff of the Monduli District Council and the second covering a broader scope including representatives and cultural leaders of the beneficiary communities, the staff of the Monduli District Council, and representatives of local Non-Governmental Organizations.

1.5 The missions addressed the issues arising out of the design of the project including the identification of the local government as an executing agency. They have identified a number of complementary activities and some modifications to the study recommendations thereby resulting in the present project design. The stakeholder consultations have confirmed the priority accorded to the provision of water supply together with education and communication infrastructure, along with protection of the environment. They have emphasized the greater importance of awareness creation with respect to the health importance of sanitation to encourage households to provide for improved facilities in preference to financing of sanitation infrastructure in the area at. The recommendations have been incorporated in the project design. The project is in conformity with the poverty focus and sectoral orientation of the Bank Group's 2002-2004 Country Strategy Paper. The present report is a result of a Bank Group appraisal mission conducted in August 2003.

THE WATER SECTOR

2.1 Water and the Poverty Issues

2.1.1 One third of Tanzania receives less than 800 mm of rainfall and is thus arid or semi-arid. Only one-third of the rest of the country has precipitation of above 1,000 mm. Also the long dry season, normally extending from June to October, has an effect on low river flows

and drying of water reservoirs. About 7 per cent of Tanzania's land surface is covered by lakes, which border the country apart from other inland lakes. These include Lake Victoria, Lake Tanganyika, and Lake Nyasa. Inland lakes include Lakes Rukwa, Eyasi and Manyara. There are also big rivers flowing to the lakes. Ground water is also another source of water for both urban and rural settlement areas.

2.1.2 The government has set itself the challenging task of increasing water and sanitation access and coverage as part of overarching policy of poverty reduction. At present about 73% of the urban population have adequate access to water supply and only about 54% in the rural areas. Inadequate coverage and access to water remains one of the main constraints to the country's social development, economic growth and the fight against poverty.

2.1.3 Poverty is wide spread, data from 2000/01 show that 36% of the population live below the basic needs poverty line. Poverty is highest in the rural areas where over 80% of the population lives. The poverty remains a rural phenomenon with over 78% of the poor failing to attain high quality livelihood due to lack of access to safe water and sanitation. Some of the main characteristics of poverty are high infant mortality and maternal mortality rates, low life expectancy, illiteracy, low income, and lack of basic services. Improved water supply and sanitation have a major impact on these poverty characteristics including a) timesaving on water collection allow women to spend more time on family care and possible income earning activities, and give girls a chance to attend school; b) improved quantity and quality of water offer beneficiaries better water for consumption and more water for health and household care and so reducing the water related diseases; and c) improved awareness of water use and sanitation, improved sanitary behaviour, and the understanding of the relation between water and sanitation allow beneficiaries to improve their health status.

2.1.4 The overall policy focus of the government is poverty reduction. This is articulated in the Tanzania Development Vision (TDV) 2025, which gives a broad development vision, mission, goals and targets for poverty reduction. It is to be achieved through a number of measures that ensure attainment of high quality of livelihood through universal access to safe water and sanitation. It is carried forward in a number of policies and strategies such as, the National Poverty Eradication Strategy (NPES) 2010 focusing on poverty targets, Tanzania Assistance Strategy (TAC) 2001 a medium term national strategy, and the Poverty Reduction Strategy Paper (PRSP) 2000 developed in the context of HIPC initiatives. The other sector policies and strategies that maintain the same policy thrust include the Agricultural and Livestock Policy (1997) and the Agricultural Sector Development Strategy (2001), Rural Development Strategy (RDS), Health Sector reforms and National AIDS Control Programme including decision to mainstream HIV/AIDS activities in budgets of all sectors. All these policy pronouncements recognize the significance of water in the reduction of food and basic needs poverty for the attainment of high quality livelihood through provision of safe water.

2.1.5 The HIV/AIDS epidemic in Tanzania has affected both urban and rural areas. HIV/AIDS, negatively impacts all aspects of development, compromising all other measures intended to reduce poverty. HIV/AIDS can drive households into poverty when their assets are sold to cover the cost of medical care, or when available labor becomes insufficient to tend to the necessary agricultural activities.

2.2 Water Sector Policy Framework

2.2.1 The Government approved the National Water Policy (NAWAPO) in 1991 a demonstration of its resolve to shift away from a policy of free water to one focusing on cost recovery, allocation and use of water resources as part of an integrated water resources management, water conservation and environmental conservation, community and private sector participation in the establishment and management of water schemes and projects, and sanitation/hygiene education, waste water and environmental management. The Government accepts the tenet of water as a basic social, economic and environmental good that should be managed at the lowest appropriate level.

2.2.2 The policy embraces the management of water resources using River Basins as management units. Five Basin Water Offices (BWOs) in the Pangani, Rufiji, Lake Victoria, Lake Nyasa and Wami-Ruvu Basins have been established out of the planned nine basins. One of the nine to be established in Monduli District, the Internal Draining Basin Water Office is scheduled to start in January 2004.

2.2.3 The policy goal is to ensure universal access to clean and safe water supply within a distance of 400 meters from people's home. The improved access and coverage, amongst other things, is meant to improve the health of the population, reduce the drudgery of water collection and sanitation disposal because the burden of carrying water and its use in the household remains the domain of women and children. Also through time saving and health improvement, accessibility of water can help release human resources capacity to more productive activities, and to engagement in social and reproductive pursuits, and enable children to attend school. The policy guides the water sector towards the achievement of the Millennium Development Goal of reducing by half, by 2015, the number of people without access to safe drinking water and improved sanitation.

2.2.4 The recognition of the important role and the involvement and participation of private sector in the management of the urban water supply is exemplified in the implementation of Dar es Salaam Water Supply, the operation of regional water utilities, and facilitation for the creation of community owned water entities and other water user associations. The revised 2002 policy allows and enables communities to choose service levels based on revealed needs and ability to pay, to make contribution towards capital cost through the creation of water funds and for the communities to engage individuals, NGOs and CBOs to help establish water user associations for running and manning water supply services.

2.2.5 The Ministry of Water and Livestock Development (MWLD) has formulated a five-year Strategic Plan (2001-2005), as a contribution to the rolling three-year water sector Medium Term Expenditure Framework (MTEF), and the annual Public Expenditure Review (PER) process. Sector developments are covered through four main development programs: the Rural Water Supply Program (RWSP), the Urban Water Supply Program (UWSP), the Urban Sewerage and Environmental Program (USEP) and the Water Research, Planning and Training Program (WRPTP). The Rural Water Sector has begun using, on a small scale, a Sector-Wide Approach (SWAP) through the RWSP assisted by the IDA. Initially the SWAP will be used along side other donor financed rural projects.

2.3 Sector Constraints and Developments

2.3.1 The water sector is faced by a number of institutional and human capacity limitations, manifested in the form of inadequate skills mixes and an inefficient public service. There are also financial resource constraints evidenced by a dependency on donor funds. The other constraints in the sector are the inadequate availability and accessibility of water resources given the semiarid to arid conditions of the country in general and the high content of minerals in the water in some areas. There is also inadequate penetration of health and sanitation messages in the rural areas.

2.3.2 The Government has embarked on a number of reforms of the water sector as indicated in section 2.2 above. Complementary programmes such as the Civil Service Reform Programme (CSRP) and the Local Government Reform Program (LGRP) and a major privatisation drive underpin these reforms. The privatisation effort is geared towards the restructuring of public institutions to create an enabling environment for the involvement of the private sector and NGOs, while the LGRP implements the principle that services should be delivered closest to the users, thereby permitting greater user participation and accountability.

2.3.3 The civil service reforms are aimed at reducing the size of central Government staff and improving conditions for performance and efficiency in the public sector. This may affect the supervisory and oversight role of key parent Ministries in the implementation of the programme at the District level.

2.3.4 There are a number of donors active in the rural water supply sector in the country including DANIDA, NORAD, SIDA Dutch Government, GTZ, KfW, DFID, JICA, UNDP UNICEF and World Bank as indicated in Annex 7. A number of important NGOs such as Water Aid and OXFAM are also actively involved. In the Monduli District only the ADW an international NGO on wildlife and general biodiversity is involved. The approach followed by the African Wildlife Foundation (AWF) on the community based environmental management of water resources provides a scope for cooperation and sharing of experiences in Arusha region. A number of these donors and NGOs were consulted during the feasibility study and the preparation of the project.

2.3.5 The Bank has supported a number of activities in the sector, these include of the Monduli District Rural Water Supply Study and the Dar es Salaam Water Supply and Sanitation Project. Impediments to smooth implementation include weak capacity in the implementing sector ministry and coordination problems. The Bank and the Government have agreed on measures to improve the performance of Bank Group portfolio, which will benefit water sector projects as well. The measures include continuous and intensive capacity building in areas such as procurement as well as regular follow-up and supervision missions. The opening of the Bank's Country Office in Tanzania will reinforce the on-going efforts to improve portfolio management.

3 **THE SUBSECTOR**

3.1 Institutions Relevant to the Project

3.1.1 The project involves the central Government ministries that coordinate sector programmes at national level and provide oversight to the District, in addition to the District Council and the beneficiary villages. The Ministry of Finance (MOF) is responsible for channelling central government resources to the local Governments, while the MWLD is responsible for oversight of the water sector and the livestock development activities. The Ministry of Health (MOH) provides overall policy and guidance on community health services associated with water supply and sanitation, while the Ministry of Community Development, Women and Children (MCDWC) oversees community development. The National Environment Management Council (NEMC) has the overall mandate for environmental policy, and is in charge of developing guidelines, standards, and instruments for environmental protection. The President's Office for Regional Administration and Local Governments (PORALG) constitutes the direct link between the District Council and the central Government. At present PORALG is implementing the Local Government Reform Programme (LGRP) aimed at enabling the Local Government Authorities (LGAs) to undertake new roles and responsibilities envisioned under the decentralization policy. The programme is an initiative of the Government, supported by several donors. It provides guidance on a number of procedural and legal issues (taxation, regulation, expenditure, audits, by-laws, etc), as well as giving support for capacity building in financial administration, personnel management and service delivery. The LGRP has embarked on a process, which would ultimately allow for the maximum devolution of power and financial autonomy to LGAs.

3.1.2 The MWLD is responsible for policy planning and implementation in the sectors of water and livestock. It is currently organised along six functional lines with divisions responsible for water resources assessment and exploration, urban water supply and sewerage, rural water supply, veterinary services, animal production and livestock research and training. There are also other units namely Policy and Planning, Central Water Board, Central Water Laboratory, and the Water Resources Institute responsible for policy and planning, water quality and water rights.

3.1.3 The Ministry's Medium Term Strategic Plan (MTSP) is aimed at building capacity at Local Governments and Communities. Its specific objective is "to ensure that all district headquarters and townships gradually shift from cost sharing mechanism to cost recovery of O&M in the delivery of water and sewerage services by 2006. For livestock the MTSP's strategic objectives include: improvement of quality of input services, improved capacity of LGAs to manage livestock services, increase stakeholders' contribution towards household food security and development of technologies for increased livestock productivity to meet consumer demands. It also aims to implement a comprehensive rangeland management and utilization by 2006.

3.2 Monduli District Council

Institutional Set up

3.2.1 Monduli District Council (MDC) is governed by the Local Government (District Authorities) Act of 1982. The District comprises of 20 wards, and 73 villages. The council

consists of 20 members elected from each ward, and two member(s) of parliament representing constituencies within the area of the district. The tenure of office of the council members is five years. A Chairman, Vice Chairman, and District Executive Director (DED) run MDC.

3.2.2 The chairman is elected from among the councilors of the district council, and holds office for five years, with the possibility of re-election for another term. The vice chairman is also elected and holds office for five years, and may be re-elected. The council appoints the DED, who functions as the Chief Executive Officer (CEO) of the district and runs the day-to-day activity of the council.

3.2.3 The council has four standing committees for a) Finance, Administration and Planning, b) Education Health and Water, c) Economic Affairs Works and Environment, and d) HIV/AIDS Control. In addition it has a sub-committee to deal with the councilors code of conduct. The members of these standing committees are appointed from the councilors.

Management and Organisation

3.2.4 The DED runs the day-to-day activities of the council. At present MDC is undergoing restructuring aimed at optimizing the use of its resources in line with the ongoing LGRP. MDC has reached an advanced stage of the reform program, in comparison to other district councils, which are implementing the same program.

3.2.5 The DED is assisted by 8 heads of departments overseeing 5 line and 3 support departments. The support departments are a) Finance, b) Planning & Community Development, and c) Personnel & Administration, while the line departments are a) Education, Sports and Culture, b) Works and Water, c) Lands, Natural Resources and Environment, d) Health and Social Welfare, and e) Agriculture, Livestock and Cooperative. In addition two independent units (Internal Audit and Legal Office) provide direct advisory services to the DED. The recently approved organization structure of MDC, which is fully effective, is presented in Annex 2. The project will complement the activities of the LGRP by providing capacity building and technical support to MDC to enable it complete successfully the reform program.

3.2.6 The proposed project would be handled by the Department of Water & Works. The water section of the Department of Water & Works handles all the activities related to provision of water in the district. The main functions of the section are to promote the community awareness of the national water policy, promote the establishment and functioning of water user entities, protection and promotion of water sources, and management and coordination of water activities in the district. It has three sub-sections in charge of i) planning, design, & construction; ii) water supply and sanitation; and iii) dam construction. At present the water section has 34 staffs, of which only one is a degree holder and six are certificate holders. In order to encourage transfer of technical know-how, the department will work closely with the Engineer Technical Advisor as well as the Engineering Supervision Consultant. The Engineering Advisor will provide technical advise to the head of the department, and provide training to the staff of the department.

Staff and Training

3.2.7 MDC has a staff compliment of 1164, of which more than 350 are women. Staff breakdown by qualification shows that 13 staff are degree holders, 77 diploma holders, 913 are certificate holders while the rest are unskilled labour. Under the LGRP, the council is preparing job descriptions, designing a new staff performance appraisal system and undertaking a staff audit to assess the skills and qualifications profiles and numbers of staff. At later steps, the Council will prepare a retrenchment, recruitment, and training plan. The Personnel and Administration Department is in charge of the staff and training of the council. The department is understaffed with qualified personnel and lacks adequate furniture and fixture for proper record keeping and communications. In order to facilitate with this and complement the activities of the LGRP, the project will provide office equipment.

3.2.8 MDC provides its staff with a wide range of training activities, which are financed under different programs. This included the capacity building program financed by the Dutch Government, which was managed by Netherlands Development Organization (SNV). There are other similar programs under the LGRP. In addition, the project will provide training programs at grassroot levels to the villagers, at village administration level, and to the MDC staff in the areas of gender sensitization, environment and water and sanitation.

Accounting and Internal Control

3.2.9 Financial Management and Accounting in MDC, like in other Local Authorities, is governed by the Government Finances Act no. 9 (1982). This is implemented through the Local Government Financial Memorandum of 1997, which requires local governments to use an accrual system of accounting and to publish audited accounts annually.

3.2.10 The financial functions of MDC are handled by the Finance Department. The Department has 13 staff, comprising one graduate, 4 diploma holders and 8 clerks. The staff were trained in Accounting and Finance under the LGRP. The Department keeps a financial management information system, and manages Council's finances, receivables, collections, and budgets. MDC's accounting system is in transition from the manual accounting system to a computerized system. However, as the computer system used by MDC is not powerful enough to cope with the level of transactions to be handled, the project will finance the cost of upgrading the accounting information system.

3.2.11 The financial year of MDC runs from 1 January to 31 December, and according to the financial regulations the council is required to prepare annual financial statements within three months after the end of the financial year and submit the same to the Auditor General for audit. MDC is current in terms of the preparation and submission of Audited financial statements. It has an Internal Audit Unit that works closely with the Finance Department but reports directly to the DED, with the objective of instituting an internal control system in the operation of the council. Its main activities include financial control, safeguarding the assets of the council, put an effective internal control system, and follow up the implementation of the recommendations of the external auditor. At present the unit has only one staff, which shows that it is understaffed in view of tasks to be accomplished by the unit. Overall the standard of the accounting records and internal control maintained by MDC, as expressed by the external auditor is still low. MDC is recruiting additional staff to the Internal Audit unit. The project is also to finance the upgrading of the accounting system and procurement of

office equipment to assist in maintaining books and records. In addition the financial advisor to be recruited under the project will assist in providing technical advice and training in the areas of Accounting and Finance.

3.2.12 A review of the financial statements of MDC shows that the finance of MDC is highly dependent on central government allocations for recurrent and capital expenditure. About 90% of its revenue is sourced from government subventions and donors. Own revenues account only 10% of its total, which are sourced from Market, Hunting and Trade License fees, as well as other charges.

Village Level Organisations

3.2.13 Below the district the formal organizations of government are the villages, each of which has a Village Government. For water issues a separate committee called a Water and Sanitation Committee (WSC) is made responsible for management of water supplies including water for livestock. The WSC is essentially a managing body for the services, often with the actual line functions performed by the members, except in the larger villages where it has been possible to hire temporary and even permanent staff. The WSCs operate water funds, to which the users make contributions for the initial capital contribution and for collecting water charges, which is then used for meeting the operations and maintenance costs of the scheme.

3.2.14 The experience of villages in Monduli is that they have managed to operate village water supply services where they have been centrally provided and do actually maintain bank accounts. Many have obtained external (Government and NGO) assistance to construct schemes. Village Governments also control the allocation of tribal land.

3.3 Service Delivery Efficiency

3.3.1 The districts water supplies differ in their size and level of sophistication. Although the larger settlements are partially metered the bulk of water is paid for on a flat rate basis with the result that revenues are inadequate even to meet the costs of basic operations and maintenance. The situation is exacerbated by the fact that system capacities fall far short of the estimated demands resulting in rationing and intermittent supply.

3.3.2 In the smaller settlements the type of supply varies according to the broad ecological zone. In areas on the slopes of the mountains, where springs are tapped in their natural state, gravity fed pipelines tapping these mountain springs have been constructed. Where groundwater is available boreholes have been fitted with mechanical pumps. In a majority of cases surface water storage tanks have been constructed to serve both human and livestock requirements. Water from the traditional small dams (charcos) is not treated and although in surveys communities claimed to boil drinking water, there appears to be no supporting evidence to the effect.

3.3.3 Most of the water sources are not always close to the settlements due to the arid nature of the district and indeed the region, makes piping of water costly. In the local context a “village” does not refer to a concentrated settlement but an administrative subdivision with vast boundaries and settlements called sub-divisions could be far flung (as much as five kilometres apart). As a result women have to walk long distances to collect water, which is at times untreated and most likely contaminated by animals. During the dry season the animals walk long

distances to the sources resulting in reduction in weight, and higher risk of death to the animals and in soil trampling with its negative environmental effects. In general, there is a demand for adequate quantities of water of drinking quality within reasonable distance.

4 **THE PROJECT**

4.1 Project Concept and Rationale

4.1.1 The arid-to-semi-arid conditions as found in the Monduli District directly affect human and animal livelihoods and improved welfare potentials by creating vulnerability from low water resources availability and accessibility, and high variability. This situation results in poor health, risk averse coping mechanisms continuing to perpetuate a low productivity, limited income earning capacity and a low quality of life of the population. The project aims to address these problems by providing water to the beneficiary communities and their livestock, as the two are inseparable in the project area. The water services are to be provided, at minimum and affordable distances to source, while also ensuring continuity of supply during the dry periods and during the inter-annual droughts that are so frequent in these areas.

4.1.2 To offset the high financial cost of providing services in the arid regions, cost which are rendered high by the disposition of homestead within an administrative village, communities have accepted to relax the all round walking distance to a maximum of this 4 km which although still large by international standards represents significant improvement for many residents. In additions some demand driven solutions to reduce the effect have been incorporated into the project design.

4.1.3 In designing infrastructure components of the project a number of alternatives were examined in the engineering and institutional study. These covered sources, the choices being between groundwater, gravity springs, surface water storage dams, and rehabilitation of existing sources. The water resources availability for the proposed solutions was studied and confirmed using well known hydrological, hydro-geological, and water engineering methods. In many cases there was little to choose from, as the choice was the only technically feasible. This is characteristic of arid and semi-arid environments.

4.1.4 The project also includes components aimed at enhancing sustainability of the project addressing the consequences of increased availability and reliability of water for livestock and to improve the watershed protection and management. In addition, the project includes HIV/AIDS and malaria sub-components to mitigate the possible negative impact induced by the project during and after implementation.

4.1.5 The project preparation phases involved a participatory approach starting with the carrying out of the feasibility study. The socio-economic surveys involved the beneficiaries in the collection of the data through participatory meetings and consultations. In addition, Bank missions held two Stakeholder Consultative Workshops, the first being with the key personnel of Monduli District Council and a second more enlarged workshop involved the representatives and leaders of the beneficiary communities. Both workshops discussed and agreed with the fundamental aspects of project designs and the relevance of the intended outputs and the priority of water supply in the same category as communications infrastructure and environmental protection.

4.1.6 The Bank Group has financed no rural water projects in mainland Tanzania. It has financed urban water supply projects in the seventies and eighties under a different policy environment making much of the lessons from that period less relevant today. However, the present project takes into consideration the results of the study of past Bank Group projects by the Bank's Operations Evaluation Department and the World Bank financed rural development projects and other donors and casts the project in a framework of integrated water resources management; and prepares the community entities for operations and maintenance beyond the duration of the project; and incorporates the Logical Framework Matrix and economic analysis.

4.1.7 Lessons learned from the performance of the Bank's portfolio in the country were taken into account in the design of the project. In order to avoid delays in the effectiveness of the grant, the project preparation engaged a Project Preparation Team within the Executing Agency to undertake additional preparatory work, and the same team members will be considered to constitute the Project Implementation Team. Furthermore, the project will be executed by the Monduli District Council and will support the ongoing decentralization exercise.

4.1.8 The project is in line with Tanzania's NAWAPO, TDV-2025, NPES-2010, TAC, PRSP RDS, as well as with the Bank's Integrated Water Resources Management Policy and guidelines, especially on gender and environment, the CSP which accords priority to rural development.

4.2 Project Area and Project Beneficiaries

4.2.1 The project area comprises 18 villages and two town settlements including the District Administrative Centre of Monduli and Namanga out of the 73 villages in the whole of Monduli district. The villages are spread over the Manyara, Kisongo and Longido Divisions. Annex 1 shows the location of the project. The whole district covers 14,201 square kilometres and has a total estimated population of 185,237, while the population in project area comprising the 18 villages and two town settlements is estimated at about 72,462.

4.2.2 The villages and town settlements were selected through a participatory selection process. The selection criteria considered five factors that were considered to have the greatest weight, i) the distance in fetching water, ii) cost per capita, iii) economic cost-benefit ratio, iv) financial sustainability using the willingness to pay and ability to pay, and v) institutional capacity. The three final criteria retained were the fetching distance (longest fetching distance ranked first), cost per capita (lowest cost-per capita ranked first), and average economic benefit-cost ratio (high value ranked first).

4.2.3 The district lies in three climatologic zones, which influences the patterns of its land use. The arid lands and plains receive an average rainfall of 200 to 600 mm, and covers 53% of the area; the semi-arid lands constitute 34% of the area and receive an average rainfall of 500 mm to 700 mm. The remaining 13% falls in the semi-humid area and covers 9% and sub-humid area coverings 4% of the high altitude associated with the mountains of Monduli-Lepurko, Lossimingori, Longido and Lolkisade.

4.2.4 Annual rainfall ranges from less than 500 mm to 900 mm. It occurs in various forms and it is highest around the mountains and usually on the lee-side thereby creating a rain shadow on the low-lying lands towards the north to northwest of the mountains. The two rainy seasons are the short vuli rains in November and December and the long masika rains

from March to May with a peak in April leaving dry spells between January and February and June to October.

4.2.5 There are few perennial streams and many ephemeral drainage systems terminating in the lakes of Natrol, Manyara, Amboseli and Angaruka. The first lakes are alkaline and thus not used intensively for domestic and irrigation purposes. The ground water occurs in the form of artesian springs and feed the perennial streams that can be tapped with boreholes in the north eastern and southern area where retention is facilitated by the nature of the basement complex.

4.2.6 The Monduli District is one of the five other districts under the region of Arusha and it is generally sparsely populated (12 persons/km²) although its population has been growing rapidly at between 3.8 and 4.3% (national average is 2.8%) due in part to in-migration from other more densely populated areas (estimated at 9.5% of total population growth). About 60% of the district population are the pastoralists, Maasai (40%) and the agro-pastoralist Waarusha (20%), both Maa speaking and very similar culturally. Other ethnic groups live mostly in the town settlements, and in cultivated areas permitting intensive agriculture. The major crops include maize, beans, paddy, wheat/barley, banana and coffee. The total population in the project area is 72,462, with sub-village populations that range from 350 to 1400 people living in 20 to 70 homesteads (bomas). The livestock units in each sub-village range from 200 to 4500. In the town settlements, the livestock unit numbers are minimal ranging from zero to 100.

4.2.7 The district's arid and semi-arid lands support an economy based on livestock keeping on subsistence basis in line with the Masaai culture, and it accounts for over 80% of their livelihood and social activities. Livestock figures for the district are estimated 325,108 heads of cattle, 233,009 goats, 164,907 sheep, 20,700 donkeys and 200 camels. Livestock, particularly cattle, are central to the pastoral economy and provide food, milk, blood for drinking, serve as a store of wealth, can act as a medium of exchange for instances as community contributions, serve in rituals, confer status and cement relationships.

4.2.8 Access to formal savings accounts is poor and hence does not help to influence livestock owners to change their livestock collection to savings or cash as a means of "storing wealth". Transport and market services are also very rudimentary in the district, making it often impossible for villagers to reach services even if they have the money to pay for them. Extension services for various sub-sectors are also lacking in remote areas. Poor infrastructure and communication services were ranked third of the list of problems, after water supply and education, by the participants of the stakeholder workshop carried out during the pre-appraisal mission.

4.2.9 Being located in semi-arid region makes water and pastures a very precious and precarious commodity for the livestock producers in the project area. They are mobile, in search of pasture and water for the livestock. Other problems in the sector include insufficient feeds and forage, existence of endemic and epidemic diseases and poor animal husbandry practices, poor quality animals characterize livestock production in the district. This results in high mortality rates, low production and productivity and low economic gains from the sector. Among all the above listed factors water has become a most critical issue to the pastoralists in the area. This is followed by shortage of pasture and tick borne diseases. Hence, it is important to adopt the integrated approach in developing the sector because

addressing one problem, e.g. water, without due regard to the other problems may lead to less than optimal results.

4.2.10 Water sources are very far in some communities and walks of up to 16 hours are common for drinking water in the dry season. Those who have better access to water do not, however, always have access to clean water. Water collection is done entirely by women and children. They start off in the morning and often they do not return until after midday. In extreme cases women take the whole day to fetch water and do this only every other day. The scarcity of water also means that often even if there is enough food, cooking has to be restricted to one meal a day. The situation of sanitation is equally dismal with only 30 percent of rural households having adequate sanitary installations. Moreover, even where pit latrines exist they are not used due to socio cultural restrictions, such as men and women not being allowed the use of one toilet.

4.2.11 Water scarcity for livestock is an equally serious problem. Some stakeholders, particularly by men who own and are in charge of cattle, strongly believe that water for livestock should be given more importance than human water consumption. Government regulation stipulates that women should make up at least 25 percent of the village government members, and the water committees that have already been set up in many villages have a fair representation of women. This is a clear sign of change, since culture of the target communities is very patriarchal, leaving all decision making in the household and the community to men who also own the family assets of which livestock is the most important. This would suggest that there is room for gender relations to change and take account of the important role women play in the water sector.

4.2.12 The communities' decision-making processes are highly stratified. Traditional leaders play an important role in mobilizing society and creating rules and regulations also about natural resource management. Within their communities their decisions carry more weight than those of the village government. Maasai communities, in particular, have been very successful in mobilizing community contributions towards water supply improvements. Such mobilization takes into account differences in wealth in the community by allowing for the contributions of poorer sections of the community to be subsidized by the better off. Existing water entities in peri-urban areas, even if not strictly Maasai, have also developed payment schedules that exempt poor and destitute members of the community from payment.

4.2.13 The Masaai culture is characterized by a very strict division of labour, which allocated domestic chores to women, including the time and energy-consuming task of collecting water for domestic use. This also includes the watering of dairy cows in zero grazing. Men are the decision-makers when it concerns cattle, including the task of moving with the cattle to find pasture and water. While both men and women carry the burden of the scarcity of water in the dry season, the effect on women is more severe since their tasks with regard to domestic water is constant and has to be carried out on top of other domestic tasks. Therefore, fetching domestic water supplies carries a higher opportunity cost, which needs to be reduced by bringing water closer to the consumer and by easing the actual workload that rests even then.

4.3 Strategic Context

4.3.1 The ultimate aim of the project is to contribute to sustainable reduction of poverty in the selected project centres by intervening in the sector of water supply and sanitation in conformity with the national Poverty Reduction Strategic Programme (PRSP). It will strive

attainment of 100% coverage of access to adequate and reliable quantities and quality of water supply for human and livestock consumption for the estimated 72,462 population of the villages of the project area and 80% coverage of messages relating to sanitation awareness. This will impact on the health of the population through reduction in water related diseases by some estimated 50%, on the sustainability of livelihoods based on livestock through reduction in mortality especially of cattle, and most importantly reduce the time of collection of water by women from the presently estimated average of sixteen hours to a maximum of two hours. A subcomponent of the Capacity Building in the project will collect baseline data and monitor progress. This activity will be linked to the national PRSP monitoring system relating to the water and sanitation sector.

4.3.2 The project will contribute to the sector goal of increased coverage of water supply and sanitation, to attain the sector millennium development goals (MDGs) in the project area. Most importantly it will do so in the framework of sustainability through incorporation of components addressing awareness creation concerning health and sanitation, environmental management and watershed protection and using participatory methods for implementation as well as monitoring and evaluation.

4.4 Project Objective

4.4.1 The objective of the project is to ensure that the population of 18 villages and two town settlements have adequate and sustainable access to safe, adequate and reliable drinking water supply to meet demand by 2011; enhanced awareness of sanitation and health; and year round availability of water for livestock.

4.4.2 The water supply capacity will be adequate to meet the demand of the present population up to 2011 when it will reach 103,000 and the livestock will reach 143,000. It is intended to reach over 80% of the population with appropriate awareness on health and sanitation messages by the end of the project and to ensure that all the project community entities have adequate management capacity to execute their mandate.

4.5 Project Description

4.5.1 To attain this objective the project will have the following components.

- A. Capacity Building
- B. Water Supply Infrastructure
- C. Environment and Watershed Protection and Management
- D. Sanitation Improvement
- E. Project Management
- F. Consultancy Services and Studies

A. Capacity Building

4.5.2 The project will use Capacity Building Technical Assistance (CB-TA) to enhance the capacity at three main levels, the individual member, the community and the local government. Through awareness creation the individual members of the community will be enabled to maximize the benefits of the services provided and to care for the natural resources related to the sources of water supply. Awareness creation will include diffusion of messages through schools and health centres on health education and use and care of water

supply and sanitation facilities. At the level of communities the project will assist with the creation of water management entities and the training of leaders and members of the water committees to operate and manage these entities in a sustainable way. The CB-TA would also be used to strengthen and set up water entities by providing accounting and management toolkits to enable them work on business principles. At the level of Local Government the project will assist through a Water Sector Support Team that will be established at the District level, with members qualified to provide assistance on demand by the communities in areas of utility management and technical skills and to operate a referral system where higher skills are required.

4.5.3 In terms of inputs the components will consist of TA – referred as the Facilitation Services Providers - from a local NGO or consultant with experience in Community Mobilisation and Institutional Development to undertake capacity assessments leading to establishment of the entities and the support team, financial management systems and manuals, training of community trainers and the support team. The TA package will include funding for procurement of data processing and communications infrastructure to link the village entities to the central support bodies. The training sub-component will facilitate the MDC to undertake community mobilization consisting of awareness creation and facilitation of communities to form entities and carry out negotiations with the central bodies. In addition, computers (including upgrading of the accounting software) and office equipment will be provided to MDC to complement the activities of the LGRP.

4.5.4 Communications infrastructure mentioned above shall include establishment of four ICT centres corresponding to each of the sub-catchments, attached to either a school or a health centre. The centre would collect key data on water sources (rainfall, levels in reservoirs, stream gage readings) and service operations as shall be contracted with the entities, and communicate these to the Water Support Team for processing and interpretation and receive feedback and communicate it to collaborating communities as the point of action. Another function of these centers shall be to access and interpret useful web content for the communities. The costs of the input Technical Assistance shall include supply and initial maintenance of hardware installation and training on use of software for identified users.

B. Water Supply Infrastructure

4.5.5 The project will provide water supply infrastructure consisting of water source, intake works, treatment, transmission and distribution according to the nature of the settlement and the type of resource used as follows: surface sources will consist of rehabilitation of 7 existing surface water storage facilities in 4 villages and construction of 8 new ones in 8 villages, groundwater sources will include protection of 8 spring sources in 7 villages and drilling and development of 18 boreholes for 6 of the villages in different locations. The boreholes will be fitted with motorized pumps lifting water into local elevated storage before distribution. For many of the surface storage sources separate off takes will be provided for domestic water use from those for livestock consumption.

4.5.6 For spring sources the gravity pipeline from the sources serves as both a transmission and a distribution trunk main and will have branches to consumption centres in different sub-villages. The spring sources serve the seven villages in the project.

4.5.7 Distribution mains in all cases are fed by gravity either from the spring sources, as mentioned above, from elevated storage or in some cases from break pressure tanks used to

control pressure and permit zoning. For the larger town settlements the distribution mains will permit individual connections to a pre-determined level.

4.5.8 For those villages and sub-villages where surface water sources are to be provided, the project will allow communities to select appropriate methods of haulage of water to households, either providing groups of households to use animal drawn carts or appropriate backpacks for water transportation. This would be an extension of the existing practice of using packs of donkeys to transport water. Under the project, the system will be designed to minimize health risks.

4.5.9 As surface water sources can have high content of suspended solids and are prone to contamination after collection, the project will provide means for filtration and disinfections either at the water point or in the household. In the latter case the project will support affected households in procuring systems such as rainwater harvesting and household treatment systems that do not use fuel wood for disinfections. Each system will be selected on demand basis using the participatory approach.

4.5.10 The project will assist in information dissemination on rainwater harvesting at household or community levels.

C. Environment and Watershed Protection and Management

4.5.11 To manage the inter-linkages between water, land - especially pastures – livestock and wildlife, the project will provide equipment required for monitoring resource availability and predicting shortfalls at the local level. Rudimentary water resources data such as precipitation, water levels in reservoirs and boreholes will be collected and examined by the community, communicated to the Water Support Team for further processing and analysis and information fed back to the users. It will serve as information for operating the community sources, monitoring availability and impending failure, future planning and disaster planning purposes (baseline river flow measurements are provided as an appendix to the Environmental Management Plan attached to the EIA report).

4.5.12 Community sub-projects in the selected areas aimed at enhancing water resources through control of land degradation, enhancing groundwater recharge, reduction of silting, live fencing of reservoirs and charcos. It includes *ad hoc* studies leading to formulation of operating policies and by-laws for water, land, livestock and wild life resources as well grazing pasture management, improvement to livestock health and quality.

4.5.13 The project environmental activities will include: a) environmental training and awareness building; b) watershed management to reduce erosion and siltation; c) community forest conservation (demarcation and conservation activities in the forests); d) pasture management and development (including training in the construction of contour bunding, planting of elephant grass); and e) training on wood saving stoves in the project villages.

4.5.14 Support to watershed management include a) institutionalisation of environmental conservation at the district level; b) formulation of environmental by-laws; c) environmental conservation activities aimed at protecting water supply infrastructures, water sources and watershed; d) live fence around water sources; e) establishment and development of wildlife areas; and f) control of fire outbreaks.

4.5.15 Support to malaria & HIV/AIDS: The project will support on-going Government efforts, in the project villages, with awareness creation about malaria, mitigating measures, and distribution of impregnated nets. Also concerning HIV/AIDS, the project will support the on-going National Aids Control Program, in the project areas, in particular with awareness creation, distribution of pamphlets, and supply of condoms.

4.5.16 Environmental monitoring: support to environmental & social monitoring, both for implementation and efficiency of mitigation measures implemented under the project, and for the evolution of the state of the environment.

D. Sanitation Improvement

4.5.17 Under the sanitation improvement program the Consultants undertaking supervision of the water supply infrastructure will undertake a short study to determine the form of adequate sanitation most culturally acceptable among the community and the demand for improvement. They would then carry out social marketing, and promotion of improved sanitation and sanitary practices. Based on the results, they would provide training for local craftsmen to build latrines and establish a unit at the district level to support the programme. An allocation in the project budget has been made to construct model solutions (demonstration latrines) at institutions such as markets, which do not yet have adequate facilities, and at homes of residents who are prepared to share the costs of these systems. The sanitation component will be coordinated with community mobilization above to develop appropriate messages for awareness creation. An allowance has been made in the project to introduce some rudimentary solid waste management in critical areas such as the townships.

E. Project Management

4.5.18 The project management component is intended to deliver as an output a project that is well managed. Under this, the Monduli District Council will receive support to enable it to recruit (a) the Technical Support Team consisting of (i) a Project Management and Procurement Expert, (ii) Project Financial Expert, and (iii) an Engineering Expert on a fulltime basis for durations of respectively 24, 36 and 24 months and to secure a total of 36 man-months of expertise in the disciplines of Community Development, Livestock Management, and Natural Resources Management on an as-required basis. In addition, this component will include the procurement of vehicles, motorcycles and equipment, as well as operating costs of the project.

F Consultancy Services and Studies

4.5.19 Finally the consultancy services and studies component is intended to cover the services of (a) engineering firm to undertake supervision of infrastructure construction (b) specific studies related to water treatment and alternative technology, and (c) project auditing.

4.6 Production, Markets and Prices

4.6.1 The project plans to create capacity to transform the attributes of raw water in terms of quantity, quality and accessibility depending on the nature and distance of these sources from the points of consumption. The demand, availability and accessibility of water differ from one locality to another. In the small town-like settlements with limited livestock, water of drinking quality will be provided to meet the minimum of 20 liters/capita/day within a maximum walking

distance of 400 meters. A limited capacity for individual connections will be made available especially in the town settlements. In villages where water will be provided from springs and boreholes it is expected that walking distance may be as high as 4km due to the scattered nature of the villages. In these cases this still represents a significant improvement in the *status quo* and most importantly in the reliability of supply compared to present precarious sources.

4.6.2 In the extreme case where the only available sources that could be developed within reasonable costs are in the form of surface storage reservoirs, the quality of water is only suitable for livestock consumption. This would require households to provide own treatment either by boiling, or filtering the quantities to be consumed. The project will actively promote these aspects as part of the community mobilisation and awareness.

4.6.3 The need to provide water at distances to sources and of better quality of water means at the moment there is suppressed demand due to serious scarcity of water in the district of Monduli. In rural areas of Monduli, the average consumption is 9.2 litres per person per day (l/p/d), which is around the World Health Organisation (WHO) threshold of 10 l/p/d but still below the recommended 25l/p/d compared with expressed community demand of 26 l/p/d in rural areas for domestic use and 56 l/p/d for urban domestic use and 25 l/lu/d for livestock consumption. Other uses include commercial and industrial use but these are not significant except in Monduli town, Namanga and Barabarani, which have public institutions like health centres, schools and government offices.

4.6.4 The water charges vary from one village to another from a low figure of 293 TShs to a high figure of 1391 TShs/month/household. There are some villages where water is still free and those where people pay for water only during the dry season when it becomes more scarce and less time-consuming to buy from private vendors. The tradition of paying for water is more common in the towns settlements where there is piped water. In all villages, it will be necessary to introduce and/or adjust the current charges in order to set them at the NAWAPO compliant level to cover at least the operation and maintenance costs of the new system. As part of the study an affordability survey was undertaken among all beneficiary villages and almost invariably they all agreed to pay for O&M.

4.7 Environmental Impact

4.7.1 The key activities the project will implement warrant that the project be classified as category II. Category II projects are likely to have negative and site-specific environmental and social impacts that can be minimized by the application of mitigation measures detailed in an ESMP. Corrective measures have been included and incorporated in the design and implementation of the project. These include land reclamation and management; reforestation; soil management; watershed development; rural water supply and sanitation.

4.7.2 A full Environmental Impact Assessment study and an Environmental Management and Mitigation Plan feature in the documents of the feasibility study; in addition, as livestock population may increase as an impact of the project, a Carrying Capacity study has been done as a follow up of the preparation mission.

4.7.3 Positive impacts are those sought after with the financing and implementation of the project. The project will improve livelihood of population by providing safe and reliable drinking water for population and water for livestock. Provision of safe water will minimize most water related gastrointestinal diseases and others related to hygiene. Dam construction has

the potential to recharge groundwater table in some areas and improve vegetation cover as soil moisture increases. Increased water availability would also help restore vegetation cover in the catchments of the sources and reduce erosion and silting, and improve pastureland.

4.7.4 The project will address the needs of men and women, pastoralists and non-pastoralists, as well as small town settlements and rural populations. Due to the strict division of labour some men tend to prioritise the supply of water to livestock, while women clearly state their preference for domestic water supplies. The willingness of men to cover the costs of both improvement of human and livestock water resources indicates that the interests of women in domestic water supplies will not lose out to cattle.

4.7.5 To mitigate women's workload related to water the project will, through participatory appraisal during implementation, strive to introduce other measures of bringing the water closer, possible options will be introduction of water carting services or camels to selected women's groups. In addition it is hoped that the women's ownership of large animals might aid the process of empowering them in decision-making and with regard to the control of assets.

4.7.6 Better supplies of water will also lead to more regular cooking and will improve personal hygiene, thus contributing to better nutritional and health standards. The promotion of culturally acceptable pit latrines will further contribute to the prevention of diseases and water pollution.

4.7.7 By seeking to involve women in the decision making structures of the water committees the project seeks to ensure that the specific needs of women and the demands of domestic water find adequate representation and are reflected in practice. In addition, involving women in the management of water resources also starts a process of empowerment for women, who are currently restricted in their public influence.

4.7.8 Negative impacts are the possibility of increase of malaria and schistosomiasis. Other impacts are well detailed in the environmental Annex 6. However it has to be noted that the impacts identified are benign and relatively easy to efficiently mitigate. Considering the specific prevailing conditions, it is important to protect surface water from erosion/siltation through watershed management. The project does not induce any relocation or compensation, as space is available and not occupied.

4.7.9 Monitoring of all project activities will be carried out to ensure compliance with contract conditions, environmental legislation and standards, and appropriate by-laws. Monitoring includes also the establishment of enabling conditions and institutional capacity to develop a routine framework for environmental management of projects and programmes. Institutions involved are: EMG, NEMC, MDC, Contractors, CBOs / NGO's, Village Governments, NEMC, and MDC.

4.8 Project Costs

The estimated cost of the project is UA 17.234 million of which UA 12.651 million is in foreign costs and UA 4.583 million is in local costs. Detailed cost breakdown is given in Annex 4a of this report while Table 4.1 and Table 4.2, respectively provide a summary of the project cost by component and by category of expenditure. A physical contingency of 10 percent and price escalation factor of 5% per annum for local and 2% per annum for foreign costs have been used.

Table 4.1 - Summary of Project Cost Estimates by Components

Components		FE	LC	Total	FE	LC	Total	%
		(In '000 of US\$)			(In '000 of UA)			FE
1	Capacity Building	239	707	946	171	508	679	25
2	Water Supply Infrastructure	12,480	3,181	15,672	8,966	2,285	11,259	80
3	Environmt & Water Shed Pr.	362	300	662	260	216	476	55
4	Sanitation Improvement	8	213	220	5	153	158	3
5	Project Management	792	606	1,398	569	435	1,004	57
6	Consultancy Services & Stud.	1,222	468	1,690	878	336	1,214	72
	Total Base Cost	15,113	5,475	20,588	10,857	3,933	14,790	73
	Physical Contingencies	1,511	547	2,059	1,086	393	1,479	73
	Price Contingencies	985	357	1,342	708	256	964	73
	Total	17,609	6,379	23,989	12,651	4,583	17,234	73
		73.4%	26.6%	100%	73.4%	26.6%	100%	

Table 4.2 - Summary of Project Cost Estimates by Category of Expenditure

Category of Expenditure		FE	LC	Total	FE	LC	Total	%
		(In '000 of US\$)			(In '000 of UA)			FE
1	Goods	396	-	396	285	-	285	100
	Vehicles and Motor Cycles	220	-	220	158	-	158	100
	Computers & Office Equipment	176	-	176	127	-	127	100
2	Works	12,521	3,290	15,812	8,996	2,364	11,359	79
	Civil Works	12,521	3,290	15,812	8,996	2,364	11,359	79
3	Services	1,688	1,589	3,277	1,213	1,142	2,354	52
	Consultancy Services	1,288	759	2,047	925	545	1,471	63
	Training	205	570	775	147	409	557	26
	Studies	69	114	183	49	82	131	38
	Others / Miscellaneous	126	146	272	91	105	195	46
4	Operating Costs	507	596	1,103	364	428	792	46
	Project Operating Costs	507	596	1,103	364	428	792	46
	Total Base Cost	15,113	5,475	20,588	10,857	3,933	14,790	73
	Physical Contingency	1,511	547	2,059	1,086	393	1,479	73
	Price Contingency	985	357	1,342	708	256	964	73
	Total Cost	17,609	6,379	23,989	12,651	4,583	17,234	73

4.9 Sources of Finance and Expenditure Schedule

4.9.1 The project will be financed by the ADF (90%) and the Government of Tanzania (GOT) (10%) as shown in Table 4.3 below. The ADF's contribution of UA 15.511 million grant, will meet 100% of the foreign exchange and 62.4% of local costs. The GOT contribution will cover 37.6% of the local costs. The total GOT contribution of 1.723 million UA includes the contributions by the beneficiaries, which is a policy requirement for communities to contribute part of the costs of sub-projects. The communities will contribute up to 10% of the cost of the village sub-projects in kind or in cash.

Table 4.3 - Source of Finance (UA Million)

Source	Foreign	Local	%	Total	%
ADF	12,651	2,860	62.4%	15,511	90%
GOT	-	1,723	37.6%	1,723	10%
Total	12,651	4,583	100.0%	17,234	100%
	73.4%	26.6%		100.0%	

4.9.2 Tables 4.4 and 4.5 below give the expenditure schedule of the project by source finance and by component.

Table 4.4 - Expenditure Schedule by Source of Finance (In '000 of UA)

Source	Year 1	Year 2	Year 3	Total
ADF	3,574	6,902	5,034	15,511
GOT	517	517	689	1,723
Total	4,091	7,419	5,723	17,234
	24%	43%	33%	100%

Table 4.5 - Expenditure Schedule by Component (In '000 of UA)

Component	Year 1	Year 2	Year 3	Total
1 Capacity Building	460	317	-	777
2 Water Supply Infrastructure	2,546	5,889	4,709	13,144
3 Environment & Water Shed Pr.	179	184	190	553
4 Sanitation Improvement	67	86	30	183
5 Project Management	539	307	316	1,161
6 Consultancy Services & Stud.	300	636	479	1,416
Total Cost	4,091	7,419	5,723	17,234
	24%	43%	33%	100%

4.9.3 ADF financing of a major part of local project costs is justified on the grounds that the project is poverty oriented and will benefit mostly rural dwellers that lack access to basic water supply and sanitation. Given the potentially high poverty impact of the project, ADF resources will finance up to 63% of the local component of the project. With the support of the international donor community, the Government of Tanzania is making a strong effort to improve domestic revenue mobilization as well as increase budgetary allocation to PRSP priority areas such as rural water through the annual PER/MTEF process.

5 PROJECT IMPLEMENTATION

5.1 Executing Agency

The recipient of the proposed ADF grant will be the United Republic of Tanzania. In line with the ongoing decentralization process, which among others transfers the responsibility for the provision of rural water supply and sanitation services to local authorities, the Monduli District Council (MDC) will be the Executing Agency (EA) of the project. MDC has gained experience in implementing small projects. In addition the ongoing restructuring and institutional capacity building under the LGRP is contributing in improving MDC's human and technical capacity in project management. In view of the experience and capacity of the MDC in project implementation, technical assistance in the form of advisory services will be provided as part of the project to assist MDC in implementing the project. During implementation of the project MWLD will also continue to exercise its responsibility of providing technical assistance to MDC.

5.2 Institutional Arrangements

5.2.1 The EA will receive technical assistance from the central government, especially the MWLD and the PORALG, which will provide the link with other central government agencies. As the project is a water and sanitation project, the accountability at the central level remains with the MWLD that will exercise its oversight responsibility to ensure that MDC succeeds in the implementation of the project. The MOF will be responsible for overseeing the funding and the flow of financial resources to the project. In addition as the project will involve issues related to gender and community development, health, and environment - MCDGC, MOH and NEMC will facilitate the implementation of the project by providing guidance and advice in their respective areas. In view of the expected high level of involvement in the project, the MOF, PORALG and MWLD are to assign liaison officers to facilitate coordination with the project. This will be a condition precedent to first disbursement.

5.2.2 MDC will use a project implementation team (PIT) to implement the project. The project preparation team (PPT) that assisted in the preparation of the project implementation manual will be transformed into a PIT. The PIT would comprise the following six MDC staff members: Project Coordinator, Project Engineer, Project Accountant, Livestock Expert, Natural Resource Expert, and Community Development Expert. The constitution of the PIT will be a condition precedent to first disbursement.

5.2.3 The PIT shall be assisted by Project Management Technical Support Team (PM-TST) consisting of experts in the area of Project Management and Procurement, Financial Management, Project Engineer, Livestock, Community Development, and Natural Resources Management. The services of the Financial Management Advisor will be provided during the entire implementation period of the project, while the services of the Project Management and Procurement Advisor and Project Engineering Advisor will be provided during the first two years of the implementation of the project. In addition, the services of the remaining three experts (Livestock, Community Development, and Natural Resources Management Advisors) will be retained for twelve months each for varying periods and durations according to need. The details of the TOR of the PIT and their respective assistance from the PM-TST are given in the Project Implementation Document (PID).

5.2.4 At the village level, the project will be implemented through the existing community water and sanitation committees (WSCs) and where these do not exist the project will assist in their establishment. These committees will work with MDC's community extension workers, community health workers and agricultural extension workers, to channel communication between the project and the communities. They will represent the communities in negotiations with the project concerning main works and community sub-projects, secure funding of project works in its area, mobilize community contribution to the work including initial financial contributions, orchestrate the community participation in implementation, monitoring and evaluation; and finally manage the scheme after handing over. Community mobilization and sensitisation will be carried out through community leaders including Traditional leaders, Village Chairpersons, Councillors and politicians. The groups will be provided with training to promote efficiency and consistency.

5.2.5 Details on project implementation process are elaborated in the PID. The document covers details of the project, including project implementation, implementation plan, as well as monitoring and evaluation of the project. An outline of the PID is attached as Annex 9

5.2.6 The project will recruit a consulting firm to assist in the updating of detailed engineering design, tender documents and construction supervision. The project will also finance an external auditor for yearly financial and technical auditing of the project.

5.3 Supervision and Implementation Schedules

The project will be implemented over 3 years in accordance with the implementation schedules given in Annex 3. The project will be supervised twice a year and a mid-term review conducted 24 months after loan effectiveness.

5.4 Procurement Arrangements

5.4.1 Procurement arrangements are summarised in Table 5.1 below. All procurement of goods, works, and services financed by the Fund, will be in accordance with the Bank's Rules of Procedure for the Procurement of Goods and Works or, as appropriate, Rules of Procedure for the Use of Consultants, using the relevant Standard Bidding Documents.

Table 5.1 - Summary of Procurement Arrangements (in UA million)

	Category	ICB	NCB	Other*	Short List**	Total
1.	Civil Works					
1.1	Kisongo Division – Civil Works	3.26(2.87)				3.26(2.87)
1.2	Manyara Division – Civil Works	5.46(4.81)				5.46(4.81)
1.3	Longido Division – Civil Works	2.88(2.54)				2.88(2.54)
1.4	Alt Treatment & Transmission		0.78(0.78)			0.78(0.78)
1.5	Water Well Drilling		0.74(0.66)			0.74(0.66)
1.6	Livestock Improvements		0.15(0.11)			0.15(0.11)
2.	Goods					
2.1	Vehicles and Motor Cycles			0.18(0.18)		0.18(0.18)
2.2	Computers & Office Equipment			0.14(0.14)		0.14(0.14)
3.	Services					
3.1	Engineering Consultancy Serv.				1.31(1.18)	1.31(1.18)
3.2	Project Auditing Services				0.03(0.03)	0.03(0.03)
3.3	Training				0.64(0.64)	0.64(0.64)
3.4	Studies				0.15(0.15)	0.15(0.15)
3.5	Technical Support Team				0.62(0.62)	0.62(0.62)
3.6	Facilitators - Water Entity Strengthening				0.37(0.37)	0.37(0.37)
4.	Miscellaneous					
4.1	Others/Miscellaneous			0.23(0.20)		0.23(0.20)
4.2	Project Operating Costs			0.30(.23)		0.30(0.23)
	Total Cost	11.60 (10.21)	1.66 (1.55)	0.85 (0.76)	3.12 (2.99)	17.23 (15.51)

* Other includes be National Shopping and Direct Purchase. ** Shortlist applies to the use of consulting services. Figures in brackets are the amounts financed by ADF.

Goods

5.4.2 Office and communication equipment amounting to UA 0.14 million shall be procured through National Shopping, as these goods are readily available off-the-shelf goods. Four vehicles and twenty motorbikes (UA 0.18 million) will be procured through National Competitive Bidding (NCB), as these goods are of such quantity and character that their supply could not possibly interest suppliers outside the country.

Civil Works

5.4.3 Procurement of civil works shall be through International Competitive Bidding (ICB). Three contracts (UA 3.26 million; UA 5.46 million; and UA 2.88 million) for Construction of Surface Impoundments and Pipelines and Supply Works will be issued. There will be a

National preference margin of 10 %. The water well drilling contract (UA 0.74 million) shall be procured through National Competitive Bidding (NCB). There are an adequate number of qualified drilling contractors in the country to provide competition.

Consulting Services

5.4.4 Consulting services shall be procured on the basis of shortlists in accordance with the Bank's Rules of Procedure for the Use of Consultants. These services include (i) The Facilitation Services Providers (UA 0.37 million) to assist with capacity building, (ii) Technical Support Team (UA 0.662 million) to advise the PIT (iii) Audit Services (UA 0.03 million), and (iv) Consultants for supervision (UA 1.31 million). Selection procedure will be based on technical quality with price consideration.

5.4.5 A number of specific studies (UA 0.15 million) to be carried out by NGOs, and CBOs, will be procured through shortlists.

National Procedures and Regulations

5.4.6 The national procurement laws and regulations have been reviewed and found to be acceptable.

General Procurement Notice

5.4.7 The text of the General Procurement Notice (GPN) will be agreed upon with GOT during negotiations and will be issued for publication in Development Business, upon approval by the Board of Directors of the Loan Proposal.

Review Procedures

5.4.8 The following documents are subject to review and approval by the Bank before promulgation:

- i) Specific Procurement Notices (SPN)
- ii) Pre-qualification Invitation Documents (where they have been used)
- iii) Tender Documents or Requests for Proposals from Consultants
- iv) Tender Evaluation Reports or Reports of Evaluation of Consultants' Proposals, including recommendations for Contract Award
- v) Draft contracts, if these have been amended, form the drafts included in the tender invitation documents.

5.5 Disbursement Arrangements

The Executing Agency (EA), MDC, will be responsible for the management of the project funds including approval of payments and preparation of disbursement applications during project implementation. However the MOF as the recipient of the ADF funds will validate all the disbursement applications to be submitted to the ADF. Disbursements for contracts including borehole drilling, supply of goods, consulting services for project implementation shall be made direct to contractors, suppliers and consultants. In addition, the Borrower will make MDC open a special account for the project in a bank acceptable to the ADF. This account shall be used to finance operating costs and other activities involving monthly payments or payments in amounts of less than UA 20,000. The ADF will replenish

the special account after the Borrower has provided valid justifications for the use of at least 50% of the previous deposit. The opening of the special account will be a condition precedent to first disbursement

5.6 Monitoring and Evaluation

5.6.1 The PIT will undertake the project's outcome and impact monitoring, as well as the progress and performance monitoring based on indicators pre-agreed with the Bank and in conformity with the adopted PRSP National Monitoring and Evaluation (M&E) system. These indicators include population coverage by safe water supply and sanitation, number of villages with water committees and water funds. The M&E databases are under construction to store the information in district. Within the project a sub-component of assistance and capacity building is included to strengthen the PIT to collect baseline data and subsequent monitoring primarily through participatory research approaches. Details of methods and key indicators are included in the Project Implementation Document (PID).

5.6.2 As regards performance and progress monitoring the PIT will obtain monthly progress reports from its consultants and prepare a quarterly progress report. The quarterly progress report will include reporting on the implementation of the Environmental and Social Management Plan (ESMP). Results achieved shall be clearly identified.

5.6.3 At the conclusion of each contract, a Contract Completion Report (CCR) will be prepared by the Consultants and reviewed by the project team. The CCR will serve to (i) confirm completion of the contract and that all parties have executed their obligations, (ii) extract any useful information that can be used as input into or benchmarking for the rest of the project (iii) draw lessons for incorporation into the administration of remaining contract.

5.6.4 At the completion of a scheme for a specific community a Scheme Completion Report (SCR) shall be prepared and discussed with the beneficiary community. The scheme completion report shall serve the same purpose as the CCR.

5.6.5 The supervising Consultants shall undertake the Social and Environmental Impact Monitoring and Evaluation Plan (EMMP) and shall report annually on the results. The first report shall be submitted with the Inception Report and carry baseline information on all indicators in the plan. The final report shall form part of the project closure report covering the entire project.

5.6.6 The Government shall, on the basis of the various monthly Consultants' progress reports and the project closure report of the Consultants, submit a project progress report and finally Project Completion Report in the standard formats of the Bank.

5.6.7 For its part the Bank shall follow up the M&E activities of the Government through desk review and comments of the reports submitted. It shall also field supervision missions twice a year beginning with the launching mission soon after the loan signature.

5.7 Financial reporting and Auditing

The Financial Management Advisor together with the project accountant who will be a member of the PIT will maintain separate project accounts and records as required by the Bank's procedures. They will maintain details as well as summary of project costs, status of commitment, status of disbursements and expenditure schedules by component and sources

of funds. They shall conduct periodic reconciliation of bank statement for the special account of the project, and contribute to the quarterly project progress report, and prepare annual project financial statement. Furthermore, an audit firm will be recruited to audit the project accounts annually, in accordance with the Bank's requirements.

5.8 Aid Co-ordination

The Ministry of Finance through the Development Assistance Committee (DAC) undertakes overall donor coordination in the country. DAC is an initiative of the donors to coordinate their activities in the country. It functions as a coordinating committee with membership comprising all the major donors, and has been created to facilitate broader donor coordination at the Federal level, while at the sector level, the sector Ministries are the coordinating body under the Technical Advisory Committees (TAC). In this organizational set up, the relevant donors participate. In the water sector the TAC has just been instituted and a number of meetings have been held. And the full membership of the water committee is being finalized. It is expected that with the establishment of the country office in Tanzania, the Bank Group's participation in donor coordination will be further enhanced together with regular supervision missions.

6 PROJECT SUSTAINABILITY

6.1 Recurrent Costs

6.1.1 The National Water Policy (NAWAPO) requires all water supply schemes to meet at least the recurrent operating and maintenance costs. For rural water supplies, operation and maintenance (O&M) is the responsibility of water and sanitation committees. The communities supported under the project will be responsible for the operation and maintenance costs of the water supply structures, and MDC will monitor to ensure that each community covers such costs. The proposed project involves well-known technologies. The recurrent costs will be within the means of the respective beneficiaries. Schemes based on spring sources and gravity mains will have O&M costs of less than 2.5% of investment. Schemes based on surface sources without significant treatment will incur O&M costs of less than 5% of investment while schemes with motorised pumps from boreholes will incur O&M costs of up to 10%.

6.1.2 Each household will be required to contribute an average of 750 TShs/month to cover the O&M costs of the schemes. In most of the villages, where spring sources will be tapped, the O&M costs is estimated to be below 750 TShs/month, while in areas using boreholes from long distances the O&M will reach up to 2200 TShs/month. According to GOT policy each WSC will implement a tariff mechanism that will enable it recover at least the O&M costs of the facilities provided under the project. In this regard, the Borrower should provide evidence that MDC ensures that all the WSCs in the project area are implementing the cost recovery principles of the National Water Policy. The submission of annual progress reports on the implementation of the NAWAPO will be one of the conditions of ADF financing.

6.2 Project Sustainability

Technical

6.2.1 Technologies used for the proposed project are well known in the country. Water supply schemes will mostly consist of gravity springs, small surface dams, and borehole systems. Spare parts for pumps and maintenance services, if required, are available through a network of private outlets and mechanics.

Institutional

6.2.2 This project has been designed so as to ensure its sustainability. The proposed demand responsive approach whereby the communities are involved in the project formulation, implementation and thereafter in its operation and maintenance will promote a sense of ownership and commitment. Sustainability is further enhanced by the institutional support component of the project that will strengthen or establish water and sanitation committees (WSC). The WSCs will set up water entities, which will provide water services on business principles. They will maintain bank accounts, collect water charges, and be responsible for the O&M of their facilities. Each WSC shall constitute selected members including women, from the households benefiting from a given water facility. The WSCs shall be trained in the management of water supply and sanitation facilities, operation and maintenance aspects including contribution and management of funds. In addition capacity building through training of the local staff involved in the project, as well as the members of the committees will enhance the institutional sustainability of the project.

Financial sustainability

6.2.3 After the project implementation, the communities will be responsible for the operation and maintenance costs of the water facilities. Financial sustainability of the project will be assured through the application of cost reflective water charges. Furthermore, affordability of services has been taken into account in the design of the project such that the ability and willingness to pay of the beneficiaries is not compromised. The results of the affordability study carried out in the project area, as part of the feasibility study, indicate an ability and willingness to pay (average 3,105 TShs/month/household), which are higher than the O&M costs (ranging from 750-2,200 TShs/month/household). In order to ensure sustainability of project facilities at village level, the water entities will institute procedures to recover at least the O&M costs of their facilities, at the initial stage. The GOT plans to gradually increase this contribution to cover the investment cost, as stated in the National Water Policy. The procedures should bring about equity in the use of water by applying a principle that payments for water take account of the level of water consumption. This approach is already practised successfully in the neighbouring districts, where the WSCs have established water entities to manage the water facilities on business principles. They have been effective in collecting water charges, and maintaining water funds, to cover their O&M costs. In this regard, GOT should cause MDC and the beneficiary communities to draw plans to implement the cost recovery principles of the NAWAPO and define appropriate mechanisms for the implementation of the policy. The submission of plans to implement the cost recovery, of at least O&M, will be one of the conditions precedent to first disbursement. The implementation will be reported annually and the Bank will follow closely the progress.

6.3 Critical Risks and Mitigating Measures

6.3.1 The main risks identified during project designs have been translated into project components. Residual risk consists of likely events that need to be strategically managed. The Table 6.1 below captures those identified in the MPDE.

6.3.2 Critical risk for the project is related to the quality of the environment. Land degradation severely affects both surface and groundwater resources. It is therefore vital to rehabilitate and properly manage the vegetation cover to reduce erosion and silting, and increase groundwater recharge as well. The project includes activities to mitigate these critical problems, at least in the areas that affect the sustainability of the project.

Table 6.1 Summary of the Risk Management Plan

Risk Level and Risk	Likelihood, Impact	Possible Mitigation Measure
<p><u>Purpose to Goal</u></p> <p>Droughts more severe than allowed in the design</p> <p>Population growth higher than normal</p> <p>Livestock numbers rise above the carrying capacity of the land</p> <p>Erosion and siltation higher than foreseen</p>	<p>M,H</p> <p>M, L</p> <p>M, M</p> <p>M, H</p>	<p>WRM components give early warning, Livestock culled and consumption rates reduced</p> <p>Timing of future investments advanced</p> <p>Corrective action and improvement to management of grazing pastures</p> <p>Watershed rehabilitation and management</p>
<p><u>Output to Purpose</u></p> <p>Delays in implementation</p> <p>Cost overruns</p>	<p>M, M</p> <p>M, M</p>	<p>Strengthen PM, avoid cost overruns</p> <p>Timely diagnosis, review to rescale, control costs. In extreme justifiably cases apply for additional funds</p>
<p><u>Input to Output</u></p> <p>Adequate numbers of personnel available for training for management</p> <p>Trained personnel not retained in the communities and in the Authority</p> <p>Communities do not contribute upfront as expected</p>	<p>L,M</p> <p>M,M</p> <p>LM</p>	<p>Downscale the training to suit available candidates</p> <p>Additional Training to replace departed</p> <p>Works will not start until a 50% of amount of the upfront contribution and accompanying schedules for the remainder have been provided.</p>
<p><u>Precedent Conditions</u></p> <p>Late fulfillment of Precedent Conditions</p>	<p>M, L</p>	<p>Discuss conditions prior to negotiations</p>

H, M and L: High, Medium and Low.

7

PROJECT BENEFITS

7.1 Economic Analysis

7.1.1 In analysing the economics of the project, consideration has been given to the investment costs required, current cost of water to the target communities, and the potential for the operation and maintenance cost to be met by the communities in future. The opportunity cost due to lack of access to water has also been considered, highlighting for instance the benefit of the project in releasing more time for the communities, particularly women and children, to pursue other economic activities. For example, indications based on the experience in the project area shows that women spend more than 4 hours to gather water, compared to less than 15 minutes spent by those with access to improved and closer water supply facilities in the region.

7.1.2 Direct benefits have been calculated on the basis of (i) savings in resources in terms of time/money spent to collect water and (ii) the value of increased use of water referred to as

consumer surplus which is related to the use of increased water for cooking, drinking, washing etc, (iii) increased milk production due to increased water for the livestock and (iv) increased meat as livestock walk shorter distance to the places of water. Based on the consultant findings, it has been estimated that when household shift from traditional sources to improved water supply services, they will reduce time spent from 16 to 3.6 hours/day, for an average consumption of 3 buckets (20 litres/bucket) of water per day per household. In having improved supplies close to homesteads, the time saving per household in getting its basic consumption indicated above, is on the average approximately 1.8 hours/day. The value of the time saved in collecting water is calculated on the basis of the basic agricultural wage in the project of 61,488 TShs/month or 284 TShs/hour. The surplus is assumed to be 0.5 hours/day or half the time saved value. Out of the estimated 30,036 milk cows in the area, at a calving rate of 210 per annum and the price of milk at 150 TShs/liter and price of improved beef starting at live weight of 210 kg and 60% carcass weight and increasing by an average of 5% per annum at The results of the analysis show that with the project life of 20 years, the project investment shows a positive EIRR of 33%.

7.2 Sensitivity Analysis

Sensitivity analysis was carried out based on 20% increase or decrease in investment cost. As a result the EIRR moved to 28% and 41% respectively. A similar exercise of increasing or decreasing the operational and maintenance costs by 20% resulted in changes in EIRR to 32.8% and 33.6% respectively. A 20% increase or decrease in benefits resulted in an increase in EIRR to 39% and decrease to 27%. The project is slightly sensitive to decrease in project benefits.

7.3 Socio-Impact Analysis

7.3.1 In addition to ensuring an equitable provision of adequate quantity and quality of water to user groups and improved sanitation services to all at acceptable costs and on sustainable basis, the project will bring about significant changes by way of improving the quality of people's lives in the project area and tackling poverty and gender issues.

7.3.2 Adequate drinking water supply and improved sanitation, together with interventions on malaria would have a direct impact resulting in improved overall health of communities. Incidences of morbidity and mortality especially from water borne/related diseases, outbreaks of cholera, malaria, etc. would be reduced.

7.3.3 Provision of safe and clean drinking water shall have significant positive impacts under this project especially on gender. The drastic reduction in the time spent by women in collecting water will give them opportunities to attend to more constructive activities such as education, other income generating activities, agriculture, etc. Most important, the value of community knowledge and experience has in the past been ignored during identification, preparation and implementation of similar projects. This is evident in some parts of the project where most communities still consider water supply installations as government property and hence responsibility. The design of the proposed project is aimed at addressing these multifaceted and complicated issues, through training and formation of the water committees. This will promote sense of ownership and enhance community participation including women, at all stages of the project starting with planning, designing, implementation and O&M.

CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

8.1.1 Monduli district is among the driest districts in Tanzania resulting in residents having to obtain water from distant sources for themselves and to displace their livestock over even longer distance to obtain water. Dry periods are protracted and frequent making these residents vulnerable to losses of livelihood. The proposed project will significantly reduce the fetching distances for water, the variability of supply as well as the availability of water for human and livestock.

8.1.2 Complementary components aimed at improving community awareness of the health effects of water supply and sanitation, facilitating community management of environmental resources will contribute to improvement and sustainability in health benefits of water supply, to reduction in degradation of pastures and catchments of water sources and to improvement in livestock health.

8.1.3 The project design is comprehensive and uses the multidisciplinary approach to the process of development. The solutions proposed are not alien to the District but are replications of those that have been tried at different places at a smaller scale. This will ensure their maintainability, which will also be further enhanced by a deliberate effort within the project to empower communities through creation of viable entities for management of facilities and resources and capacity building.

8.1.4 The project permits the Government to channel funding to meet the needs of the poor and at the same time improve their ability to improve production and productivity. While capital funding will be provided, the communities have through a participatory process engaged to meet the costs of at least operations and maintenance. The financial outlays to meet the costs have been estimated to be well below those the communities have to incur to vendors where these services are provided under the present situation. Furthermore the time saved in water collection has been estimated even higher the estimated cost of provision of services. Consequently benefits from improve health, in turn resulting in improved productive and socially beneficial uses are added benefits.

8.1.5 The choice of a local government as executing agency represents a departure from the tradition but is one that is whole heartedly supported by the Government as it is in direct implementation of its own Local Government Reform Policy. The need for strengthening and support from the centre is not significantly more that which would be required if it were a central government agency. On the contrary this choice has an added benefit of facilitating participation as the Executing Agency is close to the communities on a daily basis.

8.1.6 In general therefore the project will meet its intended objectives from technical, institutional, social and economic perspectives.

8.2 Recommendations and Conditions for Grant Approval

8.2.1 It is recommended that a Grant not exceeding UA 15.511 million be given to the United Republic of Tanzania for the purpose of implementing the project as described in this report, subject to the following conditions.

8.2.2 Grant conditions:

(i) Conditions Precedent to Entry into Force

The Protocol of Agreement shall enter into force on its signature.

(ii) Conditions Precedent to First Disbursement

The obligation of the Bank to make the first disbursement of the Grant shall be conditional upon the entry into force of the Protocol of Agreement as provided in (i) above and the fulfilment by the Recipient of the following conditions:

The Recipient shall have, to the satisfaction of the Bank:

- a. Provided evidence that the MDC has opened, in a commercial bank acceptable to the Fund, a special foreign currency account into which the proceeds of the grant shall be deposited (para. 5.5);
- b. Provided evidence that the MDC has assigned the Project Implementation Team consisting of the Project Coordinator, Project Engineer, Livestock Expert, Community Development Expert, Natural Resources Expert and Accountant, all of whose qualifications and experience shall be acceptable to the Fund. (para. 5.2.2);
- c. Provided evidence that the Ministry of Finance, Ministry of Water and Livestock Development and the President's Office Regional Administration and Local Governments have designated Liaison Officers acceptable to the Fund for purposes of facilitating coordination of the project (para. 5.2.1);
- d. Provided evidence that the Monduli District Council and the beneficiary communities have produced guidelines for cost recovery mechanisms of the National Water Policy, and drawn plans to implement the cost recovery of at least the Operation and Maintenance costs (para. 6.2.4).

(iii) Other Conditions

The Recipient shall

- a. Cause the Monduli District Council to submit annual progress reports, within three months after the end of each year, starting the year 2005, of the cost recovery of at least Operation and Maintenance and related activities by the communities in the project area (para 6.1.2).
- b. By end of each year, provide proof that the project communities, where water supply facilities were completed during that year, arrive at cost recovery of at least Operation and Maintenance costs (para 6.1.2).

UNITED REPUBLIC OF TANZANIA
MONDULI WATER SUPPLY PROJECT

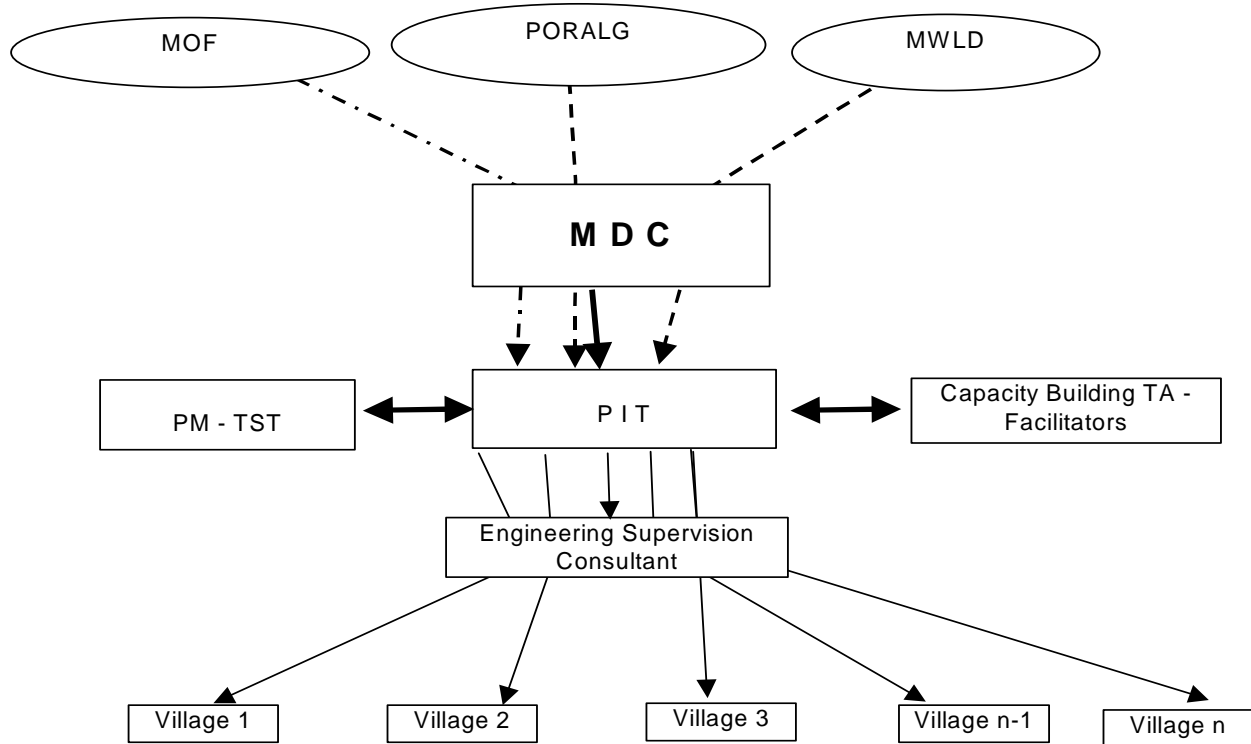
MAP SHOWING PROJECT AREA



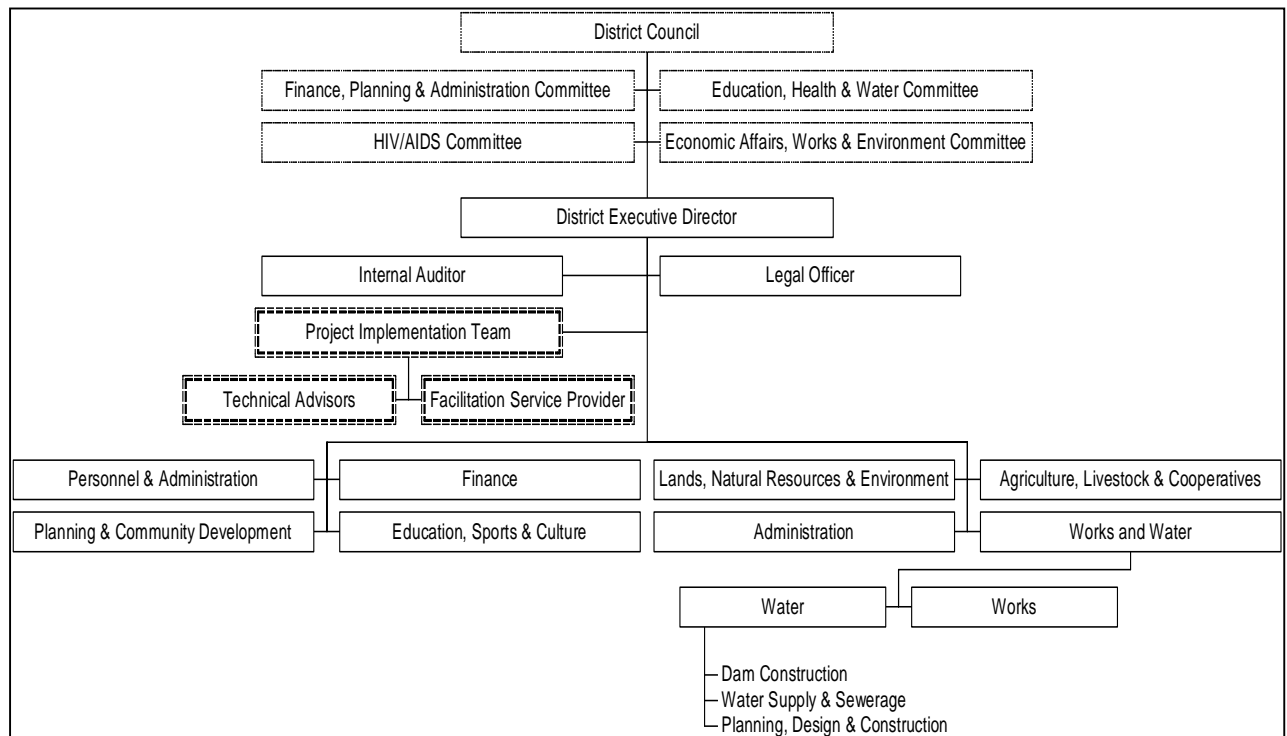
This map was provided by the African Development Bank exclusively for the use of the readers of the report to which it is attached. The names used and the borders shown do not imply on the part of the Bank and its members any judgement concerning the legal status of a territory nor any approval or acceptance of these borders

Monduli District Rural Water Supply Project

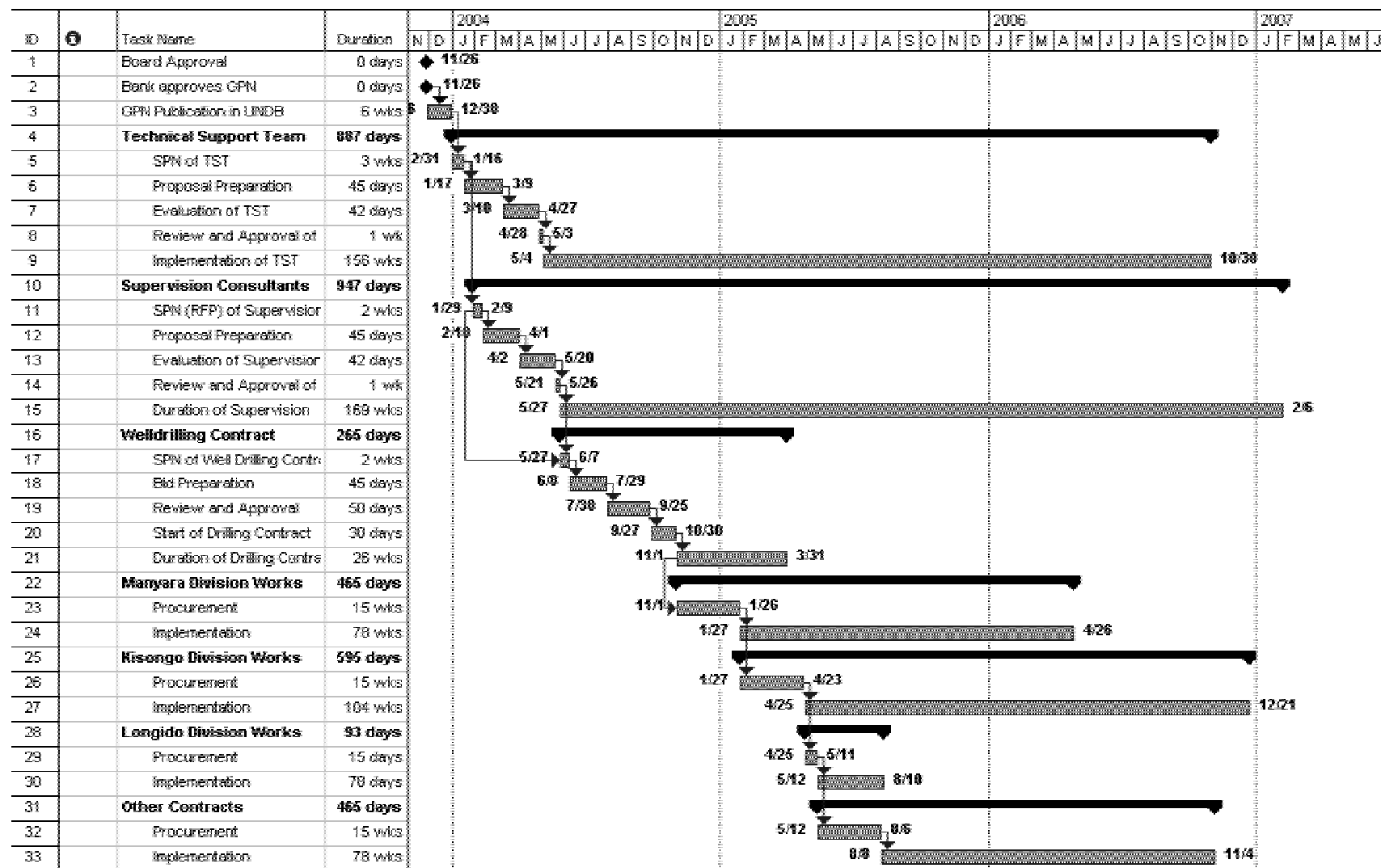
Institutional Arrangement of the Project



Organization Chart of MDC



PROJECT IMPLEMENTATION SCHEDULE



DETAILED PROJECT COST ESTIMATES (US\$)

Components:		Units	Foreign	Local	Total	Year 1	Year 2	Year 3	Total
1.00	Capacity Building								
1.10	Training needs Assessment Study		15,000	15,000	30,000	30,000			30,000
1.20	MDC Level				-				-
1.21	Training of MDC Staff			104,300	104,300	52,150	52,150		104,300
1.22	Computers & Printers	7	28,000		28,000	28,000			28,000
1.23	Upgrading PASTEL		20,000		20,000	20,000			20,000
1.24	Photocopy	2	18,000		18,000	18,000			18,000
1.25	Communications & Promotional Equipment	5	45,000		45,000	45,000			45,000
1.30	Village/Town (For Domestic & Livestock) Entities Level								
1.31	Training of Water (For Domestic & Livestock) Mgt Entities			118,350	118,350	59,175	59,175		118,350
1.32	Support to the Water Mgt Entities - Administration Packages		112,500	337,500	450,000	225,000	225,000		450,000
1.33	Monitoring & Evaluation/Collection of Baseline data			15,000	15,000	15,000			15,000
1.34	Visits by the Water Entities to other Entities			30,000	30,000	30,000			30,000
1.40	Grassroots								
1.41	Awareness Creation			71,000	71,000	35,500	35,500		71,000
1.42	Gender Mainstreaming			16,000	16,000	8,000	8,000		16,000
	Capacity Building		238,500	707,150	945,650	565,825	379,825	-	945,650
2.00	Water Supply Infrastructure								
2.10	Preliminary & General Items		1,269,634	317,409	1,587,043	317,409	714,169	555,465	1,587,043
2.20	Ground Water Sources Development		670,818	206,454	877,272	175,454	394,772	307,045	877,272
2.30	Surface Sources Development		3,150,754	787,688	3,938,442	787,688	1,772,299	1,378,455	3,938,442
2.40	Alternative Treatment & Transm Tech		741,883	185,471	927,353	185,471	417,309	324,574	927,353
2.50	Pumping Stations & Plant		1,219,566	304,891	1,524,457	304,891	686,006	533,560	1,524,457
2.60	Transmission Pipelines		3,783,723	945,931	4,729,653	945,931	2,128,344	1,655,379	4,729,653
2.70	Distribution Storage & Accessories		571,960	142,990	714,950	142,990	321,728	250,233	714,950
2.80	Distribution Mains & Connections		939,937	234,984	1,174,921	234,984	528,715	411,222	1,174,921
2.90	Survey, Demarcation & Title			20,000	20,000	4,000	9,000	7,000	20,000
3.00	Livestock Watering Point		142,080	35,520	177,600	35,520	79,920	62,160	177,600
	Water Supply Infrastructure		12,490,353	3,181,338	15,671,692	3,134,338	7,052,261	5,485,092	15,671,692
3.00	Environment & Water Shed Protection								
3.10	Environmental Training and Awareness Building								
3.11	Community Conserved Forests - Dem & Conse		52,750	40,000	92,750	30,917	30,917	30,917	92,750
3.12	Pastur Dev & Management Plans		73,680	60,000	133,680	44,560	44,560	44,560	133,680
3.20	Support to Water Shed & Protection and Mgt				-				
3.21	Training of Environmental Committees/Village landuse planning		76,000	60,000	136,000	45,333	45,333	45,333	136,000
3.22	Environmental By-laws		43,500	23,500	67,000	22,333	22,333	22,333	67,000
3.23	Environmental Conservation Activities		80,000	80,000	160,000	53,333	53,333	53,333	160,000
3.30	Support To Malaria and HIV/AIDS		24,000	24,000	48,000	16,000	16,000	16,000	48,000
3.40	Environmental Monitoring		12,500	12,500	25,000	8,333	8,333	8,333	25,000
	Environment & Water Shed Protection		362,430	300,000	662,430	220,810	220,810	220,810	662,430
4.00	Sanitation Improvement								
4.10	Study (Sanitation - Solid/Refuse) and Social Marketing								
4.11	Study - Social & cultural on Sanitation		7,500	7,500	15,000	15,000			15,000
4.12	Social Marketing/Sensitization			20,000	20,000	10,000	10,000		20,000
4.20	Construction of Model Structures	140		140,000	140,000	35,000	70,000	35,000	140,000
4.30	Training of ToT + Technicians			25,000	25,000	12,500	12,500		25,000
4.40	Solid Waste Mangement			20,000	20,000	10,000	10,000		20,000
	Sanitation Improvement		7,500	212,500	220,000	82,500	102,500	35,000	220,000
5.00	Project Management								
5.01	Project Coordinator	36		10,800	10,800	3,600	3,600	3,600	10,800
5.02	Project Management & Procurement Advisor (TA)	24	120,000	120,000	240,000	80,000	80,000	80,000	240,000
5.03	Project Accountant	36	90,000	90,000	180,000	60,000	60,000	60,000	180,000
5.04	Water Engineer	36		10,800	10,800	3,600	3,600	3,600	10,800
5.05	Sanitary Engineer - Advisor (TA)	24	72,000	72,000	144,000	48,000	48,000	48,000	144,000
5.06	Livestock Expert	36		10,800	10,800	3,600	3,600	3,600	10,800
5.07	Livestock Expert (TA - Short Term)	12	30,000	30,000	60,000	20,000	20,000	20,000	60,000
5.08	Community Development	36		10,800	10,800	3,600	3,600	3,600	10,800
5.09	Community Development (TA - Short Term)	12	30,000	30,000	60,000	20,000	20,000	20,000	60,000
5.10	Environmental Resources Mgt	36		10,800	10,800	3,600	3,600	3,600	10,800
5.11	Environmental Resources Mgt Advisor (TA - Short Term)	12	30,000	30,000	60,000	20,000	20,000	20,000	60,000
5.12	Support Staffs	36		34,560	34,560	11,520	11,520	11,520	34,560
5.14	Vehicles	4	160,000		160,000	160,000			160,000
5.14	Motor Cycles	20	60,000		60,000	60,000			60,000
5.17	Office Equipment & Furniture								
	Furniture & Equipment	4	4,000		4,000	4,000			4,000
	Computers & Printers	10	40,000		40,000	40,000			40,000
	Photocopy	2	18,000		18,000	18,000			18,000
	Scanner	1	1,500		1,500	1,500			1,500
	Fax	1	1,500		1,500	1,500			1,500
	Telephone facility	2	400		400	400			400
5.15	PMU - Operating Costs	36	135,000	135,000	270,000	90,000	90,000	90,000	270,000
5.18	Preparation of Project Implementation Manual - Consultant			10,000	10,000	10,000			10,000
	Project Management		792,400	605,560	1,397,960	662,920	367,520	367,520	1,397,960
6.00	Consultancy Services & Studies								
6.10	Engineering Supervision of Infrastructure		1,175,377	391,792	1,567,169	313,434	705,226	548,509	1,567,169
6.20	Special Studies - Ad hoc (Water Supply)		46,368	46,368	92,735	46,368	46,368		92,735
6.30	Audit of Project			30,000	30,000	10,000	10,000	10,000	30,000
	Consultancy Services & Studies		1,221,745	468,160	1,689,905	369,802	761,594	558,509	1,689,905
	Total Base Cost		15,112,713	5,474,923	20,587,636	5,036,195	8,884,510	6,666,931	20,587,636
	Physical Contingencies		1,511,271	547,492	2,058,764	503,619	888,451	666,693	2,058,764
	Price Contingencies		985,427	356,993	1,342,420	154,993	554,505	632,922	1,342,420
	Total Project Cost		17,609,411	6,379,409	23,988,820	5,694,807	10,327,466	7,966,547	23,988,820

PROVISIONAL LIST OF GOODS AND SERVICES

Category		In US \$			In UA			Source of Finance in UA		
		Foreign	Local	Total	Foreign	Local	Total	ADF	GOT	Total
1.0	Goods									
1.1	Vehicles	160,000	-	160,000	114,947	-	114,947	114,947	-	114,947
1.2	Motor Cycles	60,000	-	60,000	43,105	-	43,105	43,105	-	43,105
1.3	Computers	88,000	-	88,000	63,221	-	63,221	63,221	-	63,221
1.4	Office Equipment	88,400	-	88,400	63,508	-	63,508	63,508	-	63,508
2.0	Works	-	-	-	-	-	-	-	-	-
2.1	Civil Works - Kisongo Division	3,069,142	812,191	3,881,332	2,204,923	583,491	2,788,414	2,453,804	334,610	2,788,414
2.2	Civil Works - Manyara Division	5,150,153	1,362,891	6,513,044	3,699,956	979,124	4,679,079	4,117,590	561,489	4,679,079
2.3	Civil Works - Longido Division	2,716,278	718,812	3,435,090	1,951,419	516,406	2,467,826	2,171,687	296,139	2,467,826
2.4	Alternative Treatment Techniques	741,883	185,471	927,353	532,981	133,245	666,226	666,226	-	666,226
2.5	Water Well Drilling	701,818	175,454	877,272	504,197	126,049	630,247	554,617	75,630	630,247
2.6	Improvements for Livestock	142,080	35,520	177,600	102,073	25,518	127,591	95,693	31,898	127,591
3.0	Services	-	-	-	-	-	-	-	-	-
3.1	Engineering Consultancy Services	1,175,377	391,792	1,567,169	844,410	281,470	1,125,880	1,069,586	56,294	1,125,880
3.2	Project Auditing Services	-	30,000	30,000	-	21,552	21,552	21,552	-	21,552
3.3	Studies	68,868	113,868	182,735	49,476	81,804	131,280	131,280	-	131,280
3.4	Technical Support Team	372,000	372,000	744,000	267,251	267,251	534,502	534,502	-	534,502
3.5	Water Entity Strengthening - Facilitation	112,500	337,500	450,000	80,822	242,466	323,287	323,287	-	323,287
4.0	Operating Costs	-	-	-	-	-	-	-	-	-
4.1	Project Operating Costs	135,000	223,560	358,560	96,986	160,609	257,595	191,554	66,042	257,595
5.0	Miscellaneous	-	-	-	-	-	-	-	-	-
5.1	Training	205,215	569,865	775,080	147,430	409,400	556,830	501,147	55,683	556,830
5.2	Others/Miscellaneous	126,000	146,000	272,000	90,520	104,889	195,409	170,983	24,426	195,409
	Total Base Cost	15,112,713	5,474,923	20,587,636	10,857,224	3,933,276	14,790,500	13,288,289	1,502,211	14,790,500
	Physical Contingency	1,511,271	547,492	2,058,764	1,085,722	393,328	1,479,050	1,328,829	150,221	1,479,050
	Price Contingency	985,427	356,993	1,342,420	707,947	256,470	964,417	893,453	70,964	964,417
	Total Cost	17,609,411	6,379,409	23,988,820	12,650,894	4,583,073	17,233,967	15,510,571	1,723,396	17,233,967

SUMMARY OF ECONOMIC ANALYSIS

Year	'000 TShs								
	Costs	O&m	Total cost	Time saving	Surplus	Increased Milk	Increased Meat	Total Benefits	Net Benefits
0									
1	5,220,703		5,220,703	5,844	2,980	567,692	378,461	954,977	(4,265,726)
2	9,496,827	130,518	9,627,345	6,381	3,254	867,547	811,546	1,688,728	(7,938,616)
3	7,304,574	382,656	7,687,230	6,700	3,417	1,460,544	1,186,005	2,656,667	(5,030,563)
4		436,836	436,836	7,035	3,588	2,559,217	2,008,556	4,578,396	4,141,560
5		454,310	454,310	7,387	3,767	4,288,967	2,379,376	6,679,497	6,225,187
6		472,482	472,482	7,757	3,956	5,780,521	3,006,853	8,799,086	8,326,603
7		491,382	491,382	8,144	4,154	6,558,038	3,416,236	9,986,572	9,495,190
8		511,037	511,037	8,552	4,361	7,079,402	3,687,827	10,780,141	10,269,104
9		531,478	531,478	8,979	4,579	7,157,275	3,728,393	10,899,226	10,367,748
10		552,737	552,737	9,428	4,808	7,236,005	3,769,405	11,019,647	10,466,909
11		574,847	574,847	9,900	5,049	7,315,601	3,810,869	11,141,418	10,566,571
12		597,841	597,841	10,394	5,301	7,396,073	3,852,788	11,264,557	10,666,716
13		621,754	621,754	10,914	5,566	7,477,430	3,895,169	11,389,079	10,767,324
14		646,625	646,625	11,460	5,845	7,559,681	3,938,016	11,515,001	10,868,377
15		672,490	672,490	12,033	6,137	7,642,838	3,981,334	11,642,341	10,969,852
16		699,389	699,389	12,635	6,444	7,726,909	4,025,129	11,771,116	11,071,727
17		727,365	727,365	13,266	6,766	7,811,905	4,069,405	11,901,342	11,173,977
18		756,459	756,459	13,930	7,104	7,897,836	4,114,168	12,033,038	11,276,579
19		786,718	786,718	14,626	7,459	7,984,712	4,159,424	12,166,222	11,379,504
20		818,186	818,186	15,357	7,832	8,072,544	4,205,178	12,300,912	11,482,725
21		850,914	850,914	16,125	8,224	8,161,342	4,251,435	12,437,126	11,586,212
22		884,950	884,950	16,932	8,635	8,251,117	4,298,201	12,574,884	11,689,934
23		920,348	920,348	17,778	9,067	8,341,879	4,345,481	12,714,205	11,793,856
Total	22,022,104	13,521,323	35,543,426	251,558	128,294	145,195,071	77,319,255	222,894,178	
NPV (.10)	18,082,745	4,492,202	22,166,565	79,642	40,618	43,605,690	23,956,068	61,529,108	
EIRR								EIRR	33%
	Sensitivity analysis		20% decrease	20% increase					
	EIRR	Invest	41	28					
		O&M	33	34					
		Benefits	27	39					

Assumptions for Economic assumptions

- a) Calculations are done in constant 2003 Tanzania Shillings prices and a standard conversion factor of 0.9.
- b) Investment Cost: The total cost of the project form the basis of the calculations;
- c) The operation and maintenance costs were estimated at 2.5% of the investment costs and Project's life span of the project is 20 years and no replacements are taken into account
- d) Benefits: The time valuation was estimated at 285Tshs based on 22 days of 5 hour working period and basic agricultural wage amount. Consumer surplus is taken as half the time saving. Household fetches 2 to 3 bucket per day during dry seasons ad 4 to 5 during wet seasons; The population growth rate is estimated at 3% and basic agricultural wage in the province is estimated at 61488 TShs per month. A bucket of water is 20 liters while the time saving is about 3.6 hours. Out of 66748 cattle in the area 60% are cows and 75% of them are milk cows. A calving rate of 210 per annum The price of milk at Tshs150;The price of improved meat based on live weight of 210kg and 60% carcass weight thereafter increasing by 5%.

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN SUMMARY

Project Title: **MONDULI DISTRICT RURAL WATER SUPPLY AND SANITATION PROJECT**

Project Number: **P-TZ-EA0-008**

Country: **TANZANIA**

a) Brief description of the project and key environmental and social components:

The water supply component includes: The project is justified by the welfare benefits associated with improved water supplies. The EIA is to demonstrate how environmental aspects have been taken into account in the study preceding the project. Another has been to influence detailed design in the second phase. The list of activities leading to the project expected water supply outputs can be summarized as including: (1) Implementation of physical works, and institution building in each of the project site. Water supply is based on various sources and technologies including: surface water – rivers and springs – intakes, boreholes, and small dams construction and rehabilitation, (2) Mobilization and training of communities; establishment of appropriate entities and training leaders); (3) Establishment of project management.

The sanitation project component includes: (1) Promotion of sanitation in rural areas by health officers; (2) Training technicians for designing and constructing pit latrines using local traditional materials; (3) Training of trainers; (4) Seed money for precast yard for manufacture of squat slabs and vents in each of the three divisions; and (5) Construction of demonstration latrines in schools and dispensaries.

b) Major environmental and social impacts: Improvement of water supplies in dry land has major social and environmental implications where traditional land use patterns and settlement have emerged in response to availability of water and pasture. More reliable water supplies, greater abundance of potable water, and improved water quality, all have well-known benefits for individual human health, productivity and well-being. Yet it is likely that conflict between pastoralists and other resource users will be exacerbated by changes in utilization of other natural resources. Indeed such conflict is increasingly common in Monduli, as in all parts of Tanzania where pastoralists and cultivators compete for resources.

For each village, the preferred technical option has been chosen on the grounds of need, local preference, size, technology, layout, raw materials and availability of skills for maintenance, plus the capability of the projected financial return to generate funds for maintenance after the participatory selection process. The environmental and social impacts associated to each project site are: (1) Intake from surface water and gravity flow by pipeline: Intake and treatment will have fully manageable impacts, provided treatment wastes are properly disposed. (2) Boreholes: The risk at boreholes is that the demands of water for cattle may grow and concentrate herds all year round in the same area leading to depletion of pasture resources and land degradation. (3) Small Dam construction and/or dam rehabilitation: Damming insures water supply for humans and animals and has the potential for recharging groundwater resources. However the side-effects, especially on water related diseases, transmission of wildlife diseases and wildlife/human/cattle can be significant, especially in these drought-prone areas. The construction and operation of dams and reservoirs include activities or components that can potentially induce environmental and social impacts: Exploitation of borrow pits; Activities associated with construction works such as the manipulation of fuel, waste and hazardous materials, production of wastewater, etc.; Accidental rupture of the dam and subsequent damages; Potential health Outcomes of the project: Increased exposure of vector-borne and other communicable diseases; Gender impacts: Variation in workload.; Changes in income-generating activities and available income; and Control over water resources.

Combined improvement of water supply and better livestock health may lead to higher pressure on pasture and can lead to degradation of vegetation cover, erosion and ultimately desertification. However, the conclusions of the carrying capacity survey implemented during project preparation indicate that the resources available can take more cattle without harm, especially when pasture improvement is undertaken as planned in the project. Environmental Assessment of the Sanitation Proposals: The sanitation component of the project has no potentially significant adverse environmental impacts as it comprises: Promotion of sanitation sector in rural areas by health officers, complemented by training of technicians for designing and constructing pit latrines using local traditional materials; Training of trainers; Seed money for precast manufacture of squat slabs and vents, and construction of demonstration latrines in schools, dispensaries, markets, etc.

c) Enhancement and mitigation program, monitoring program and complementary initiatives: The general specification for contractors routinely incorporates measures for the aversion of soil erosion and damage repairing. Such measures should carry the force of contractual conditions and be part of the main effort to construct and/or rehabilitate waterworks. In remote rural areas, the only measure likely to mitigate potentially adverse environmental impacts of an improved village water supply is involvement of the local population in the choice, design and operation of the local project. Because the Maasai are acutely aware of the inter-dependence of their well-being and that of their livestock with the sustainable utilization of available water and pasture, they are themselves the guarantors of sustainable development. Where the Maasai compete for scarce resources with newly arrived non-Maasai, the potential for conflict exists. In this situation, planning and controlling the water

supply is the most important of all social levers. Users of small dams assume responsibility for their maintenance. The Maasai know well that siltation is accelerated by soil erosion around a dam. To avoid damaging concentration of cattle, consumption points should be scattered as much as possible in the area. Exploitation of groundwater resources may lead to reduction of resources, lowering of the water table, and pumping of saline or soda loaded water. Land cover rehabilitation to improve infiltration especially at the recharge areas is needed. In the centers, environmental assessors will propose workable mitigation measures, which are acceptable, affordable and reasonably likely to be sustained. Potentially the adverse impacts to be mitigated are resource depletion and degradation, pollution, and perturbation of the downstream ecology. The project's Environmental Management Plan makes provision for the Monduli water project to comply with Tanzanian environmental and social policy and statutory requirements and the Bank's environmental policies. This has been done: (1) Now, influencing design decisions about the project, thereby averting potentially adverse environmental impacts; (2) by way of mitigation proposals; and (3) Later, assisting resource managers to make well-informed decisions as the situation develops over the whole plan period.

Monduli District Rural Development Programme (MDRDP) provided training on capability in database management and handling the graphic programmes for monitoring. In keeping with national water policy, monitoring should primarily be done by village water committees, which should report routinely to Village Councils and through them to the District Council. Where the risk of environmental degradation is highest, it is proposed that there should be an environmental audit as early as 2005 to check whether enhanced water supplies have indirectly accelerated environmental degradation of Monduli Mountain in consequence of unsustainable increase in the off take of woody biomass for fuel and building.

Environmental Management and Complementary initiatives: Environmental management of the water schemes should not be divorced from technical and financial management. Springs are protected and micro-catchments conserved to secure good water quality and to prolong the life of dams. The owner-users of a water scheme assume of the responsibility for these measures. *Mazingira* committees and other decision-making bodies need to be aware of the synergies prevailing. This calls for well-informed local land use planning and decision-making about allocation, use and conservation of natural resources. Such planning has to draw upon indigenous knowledge of land, water, pasture and woodland, which has served well enough in the past but is incapable of making provision for the impacts and implications of modern technology, sequestration of natural resources into individual and/or institutional ownership, rapid population growth and/or unfamiliar resource uses. The habitual Maasai coping mechanism, retreating into land unwanted by others, is no longer available; there is no more such land. Government's policy of empowering local communities to make local decisions about local resources is the best possible solution.

d) Institutional arrangements and capacity building requirements: The Project Implementation Team (PIT) will also implement the mitigation measures. The PIT will use the outcomes of the UNDP/GEF - East African Cross Border Biodiversity Project and supported by the outcome of the Monduli Biodiversity Project that has developed a botanical component of the surveys co-ordinated by the National Herbarium of Tanzania, and has established environment committees in villages around Monduli. Establishment and recognition of the *Mazingira* committees is the first step towards the development of effective joint management plans.

e) Public consultations and disclosure requirements: Stakeholders are the residents of Monduli District, the Ministry of Water and Livestock Development, the Ministry of Tourism and the tourists and business visitors to the district, representatives of scientific and conservation interests, and all other institutions active in the district, and the ADB. Stakeholders were fully consulted throughout the exercise by way of repeated visits to the villages, meetings and delegations. Villagers were represented on the project Steering Committee to whom all reports have been submitted at every stage. Estimated costs: Project environmental components: As was stated in the project's Basic Data & Criteria Report, provision will be made in the design and tender documents for mitigation of potentially adverse significant environmental impacts during implementation and, insofar as practicable, during operation of the works, most costs of mitigation to be internalized in the project. Cost of mitigation during construction, including making good any damage, therefore will be absorbed by the contractor. However, the project includes component sections intended to rehabilitate, and conserve the natural resources specially those directly related to water resources conservation an management. Details of these costs are in the appraisal report and in the Project implementation Document.

f) Implementation schedule and reporting: Implementation of the mitigation measures as well as that of the relocation and compensation is harmonized with the implementation schedule of the various phases of the project.

CONCLUSIONS

In conclusion, it is principally recommended that: (a) Standard precautions to secure the minimization of ecological disturbance and the prevention of pollution during construction be incorporated into all contracts for engineered water supply and wastewater management measures; (b) Water supply improvements in villages on the slopes of Mount Kilimanjaro should meet present needs but should not stimulate population or significant cattle numbers growth; and (c) Elsewhere in the district, measures for the protection of springs and for drainage

from water-points be integrated into the design and implementation plan of all minor water supply works, and that process be embedded into local communities by a programmed of HRD and institutional strengthening.

DONORS IN RURAL WATER SUPPLY SUB SECTOR

Program/Initiative	Services provided by program/Initiative	Direct Client / Customer	Financiers
Rural Water Supply Program in Kilimanjaro	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public; Water User Groups and Authorities	GOT, GTZ and KfW
Rural Water Supply and Sanitation Project in 12 districts	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public; WUGs and Authorities	GOT; World Bank
Small Towns Water Supply and Sanitation Project	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public; WUGs and Authorities	GOT; AFD
Chalinze water project	Construction of new water supply systems and establishment of water user organizations	Public; WUGs and Authorities	GOT; CHINA
Shinyanga Rural Water Supply and Sanitation	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public; WUGs and Authorities	GOT; NETHERLANDS
Hanan'g, Igunga, Singida ® and Ma yoni District	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public; Water User Groups and Authorities	GOT; JAPAN
Mtwara Lindi Water Supply and Sanitation Study	Water supply and sanitation study	Public; WUGs and Authorities	GOT; JAPAN
Singida Water Supply	Construction/rehabilitation of water supply systems and establishment of water user organizations	Public WUGs and Authorities	GOT BADEA
Monduli District Rural Water Supply Project	Construction/rehabilitation of water supply systems and establishment of water user organizations; capacity building	Communities; Water User Groups and Authorities	GOT; ADB

LIST OF ON GOING BANK GROUP FINANCED PROJECTS IN TANZANIA AS OF MARCH 2003

SECTOR/PROJECT TITLE	FUNDS SOURCES	DATE APPROVED	AMNT (UA Mill.)	DATE SIGNED	DATE EFFECTIVE	AMNT DISB.	UNDISB. AMNT	DEADLINE FINAL DISB	STATUS ON GOING
<u>AGRICULTURE</u>									
Livestock Marketing	ADF	27 June 1992	9.21	01 Dec. 1992	12 July 1994	6.19	3.02	31.07.03	On-going
Selous Game Reserve	ADF	26 Nov. 1997	5.91	21 Apr. 1998	11 Nov. 1998	2.52	3.39	31.04.03	On-going
Special Food Security	TAF	11-May-2000	0.77	30 Juin 2001	11-May-2001	0.77	0.00	31.08.03	On-going
Agric. Marketing Systems Dev. Programme	FAD	18-Sep-2002	15.90	-	-	0.00	15.90		Awaiting signature
Agric. Marketing Systems Dev. Programme	TAF	18-Sep-2002	1.00	-	-	0.00	1.00		Awaiting signature
SUB-TOTAL			32.79			9.48	23.31		
<u>TRANSPORT</u>									
Mutukula-Muhutwe Road Project	ADF	08 Oct. 1997	20.00	17 Nov. 1997	27-Jan-1999	5.34	14.66	29.06.04	On-going
Zanzibar Road Studies	ADF	09 Sep. 1998	1.06	20 Nov. 1998	19-Sep-2000	0.19	0.87	31.03.03	On-going
El Nino Road Rehabilitation	ADF	16 Dec. 1998	9.75	5-Jan-1999	1-Oct-2000	0.07	9.68	31.12.04	On-going
Shelui-Nzega Road Project	ADF	17 June 1999	24.00	19 Nov. 1999	7-Mar-2000	1.94	22.06	30.11.03	On-going
Road Rehabilitation / Upg. Project	ADF	03 Sep. 2001	38.65	28 Sep. 2001	-		38.65	31.03.07	On-going
SUB-TOTAL			93.46			7.54	85.92		
<u>INDUSTRY</u>									
SUB-TOTAL			0.00			0.00	0.00		
<u>PUBLIC UTILITIES</u>									
Monduli Rural District Water Supply Study	TAF	16 July 1997	0.78	17 Nov. 1997	03 Sep. 1998	0.67	0.11	30.09.02	Completed
Urban Centers Water & Sanitation Study	TAF	20 Oct. 1999	1.85	19 Nov. 1999	5 Feb 2001	0.00	1.85	31.12.02	Cancelled
Rural Electrification Master Plan	TAF	28 Jan. 2001	1.87	28 Sep. 2001	-	0.00	1.87	31.12.03	Not yet effective
Dar es Salaam Water Supply	ADF	01 Dec 2001	36.94	29 May 2002	-	0.00	36.94	31.12.07	Not yet effective
Dar es Salaam Water Supply	TAF	01 Dec 2001	1.31	29 May 2002	-	0.00	1.31	31.12.07	Not yet effective
SUB-TOTAL			42.75			0.67	42.08		
<u>SOCIAL</u>									
First Health Rehabilitation Project	ADF	03 Dec. 1997	15.00	08 May 1998	10 Sep. 1999	2.91	12.09	31.12.03	On-going
Education II Project	ADF	10 Dec. 1997	20.00	08 May 1998	06 Jan. 1999	5.96	14.04	31.12.02	On-going
Zanzibar Health Dev. Requirement Studies	TAF	03 Dec. 1997	0.91	08 May 1998	24 Sep. 1999	0.85	0.06	31.03.03	On-going
Small Enterprises Loan Facility	ADF	11 Nov. 1998	8.00	12 Apr. 1998	29 July 1999	1.30	6.70	31.01.05	On-going
Three Regions Health Studies	TAF	14 July 1999	1.75	19 Nov. 1999	6-Apr-2001	0.02	1.73	30.06.03	On-going
Alternative Learning & Skills Dev. Project	ADF	31 Oct 2000	5.56	30-Jan-2001	24-Dec-2001	0.39	5.17	30/06/07	On-going
Alternative Learning & Skills Dev. Project	ADF	31 Oct 2000	1.01	30-Jan-2001	24-Dec-2001	0.08	0.93	30/06/07	On-going
SUB-TOTAL			52.23			11.51	40.72		
<u>MULTI-SECTOR (POLICY BASED)</u>									
Structural Adjustment Loan II	ADF	03 Sep. 2001	40.00	28 Sep. 2001	8 Dec. 2001	20.00	20.00	31.12.03	On-going
SUB-TOTAL			40.00			20.00	20.00		
GRAND TOTAL			261.23			49.20	212.03		

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