THE UNITED REPUBLIC OF TANZANIA

PRIME MINISTER'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

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DODOMA

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) AND ENVIRONMENTAL CODES OF PRACTICE (ECOPS) FOR THE DAR ES SALAAM METROPOLITAN DEVELOPMENT PROJECT (DMDP)

LOCAL ROADS, SURFACE WATER DRAINAGE AND INFRASTRUCTURE UPGRADING

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DAR ES SALAAM, Tanzania

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
BD	Bidding Document
BOD	Biological Oxygen Demand
BWO	Basin Water Office
BWB	Basin Water Board
CBO	Community Based Organization
CD	Contract Document
COI	Corridor of Impact
CRB	Contractors Registration Board
CSC	Construction Supervision Consultant
CPT	Community Planning Team
DAWASCO	Dar es Salaam Water and Sewerage Company Ltd
DAWASA	Dar es Salaam Water and Sewerage Authority
DCC	Dar es salaam City Council
DLA	District Local Authority
DMDP	Dar es Salaam Metropolitan Development Project
DoE	Division of Environment
DSM	Dar es Salaam
ECOP	Environmental Code of Practice
EHS	Environmental Health and Safety
EIA	Environmental Impacts Assessment
EMA	Environmental Management Act
EMO	Environment Management Officer
EMP	Environmental Management Plan
ERB	Engineering Registration Board
ESIA	Environmental and Social Impacts Assessment
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework
ESMoP	Environmental and Social Monitoring Plan
GoT	Government of Tanzania
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
ICOM	International Council of Museums
ICPRCP	International Centre for Preservation and Restoration of Cultural Policy
IEMC	Independent Environment Monitoring Consultant
IMC	Ilala Municipal Council
INCP	International Network on Cultural Policy
IPS	Implementation Project Section

JICA	Japan International Cooperation Agency
KMC	Kinondoni Municipal Council
IMC	Ilala Municipal Council
MEMO	Municipal Environment Management Officer
MLHHSD	Ministry of Lands, Housing and Human Settlement Development
NEMC	National Environment Management Council
NGO	Non-Governmental Organization
OP	Operational Policy
PAH	Project Affected Households
PIU	Project Implementation Unit
PMO-RALG	Prime Minister's Office, Regional Administration and Local Government
PPE	Personal Protective Equipment
RAP	Resettlement Affected People
RoW	Right of Way
RP	Resettlement Plan
RPF	Resettlement Policy Framework
SIA	Social Impacts Assessment
SPM	Suspended Particulate Matter
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections
TAC	Technical Advisory Committee
TMC	Temeke Municipal Council
TANESCO	Tanzania Electric Supply Company Ltd
TANROADS	Tanzania National Roads Agency
TAT	Technical Assistance Team
ToR	Terms of Reference
TAZARA	Tanzania Zambia Railways Authority
TTCL	Tanzania Telecommunication Limited
TST	Technical Supervision Team
UN	United Nations
UNESCO	United Nations
URT	United Republic of Tanzania
US$	United States of America Dollar
UTI	Urinary Tract Infections
VCT	Voluntary Councelling and Testing
WB	World Bank
WHO	World Health Organization

CHAPTER 1: INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

Although Tanzania has strong economic growth, it remains one of the poorest countries in Africa. Dar Es Salaam (DSM) is Tanzania's primary city with a current population estimated at about 4.6 million which is expected to grow to more than 10 million by 2030. It accounts for about 40% of the country's urban population, is Africa's third fastest growing City with an average growth rate of 5.8% from 2002-2012.

Planning systems and development controls in Tanzania are less efficient, with an estimated 70-80% of residents in DSM living in unplanned, largely informal settlements. The City's sprawling form, its poor transport infrastructure and high vehicle population make, mobility and connectivity in Dar es salaam a growing challenge. Inadequate and poorly maintained storm water drainage and equally poor solid waste management systems significantly contribute to major flooding that frequently occurs in the City. Specifically, infrastructure provision particularly of roads, drainage, wastewater collection and treatment and solid waste management systems has lagged far behind the pace of urban growth. This is creating environmental and health hazards for residents and hampers economic development.

The above mentioned problems are exacerbated by the complex and fragmented nature of metropolitan governance. DSM is a region composed of a coordinating City Council (DCC) with three Municipal Councils: Kinondoni (KMC); Ilala (IMC) and Temeke (TMC) which are collectively known as DSM Local Authorities (DLAs). However the Municipal Councils (MCs) do not report to DCC but rather directly to the Prime Minister's Office-Regional and Local Government (PMO-RALG). The city has outgrown this structure and a regional approach is considered necessary to better address urban issues and service demands such as roads and transport, sanitation, waste management, drainage and flood control and thus,address sprawl and informality. Major changes are also considered necessary in the metropolitan planning and governance arrangements.

Partly, in response to the above situation, the Government of Tanzania (GoT) has requested donor assistance, to support a Dar es Salaam Metropolitan Development. Thus, under an on-going Tanzania Strategic Cities Project, the World Bank has supported the funding of a number of Feasibility, Preliminary and Detailed Engineering Studies for key infrastructure sectors as well as an Institutional Arrangement study. From these studies the GoT, through the Prime Minister's Office for Regional and Local Government (PMO-RALG), together with the World Bank have prepared the DMDP.

A total of 14 sub-projects were prepared under the DMDP and contracted various consultants to prepare comprehensive ESIAs that gathered valuable, Municipal-specific social, environmental and technical data and information.

Also, summary Environment and Social Management Plans (ESMP) and Environmental and Social Monitoring Plans (ESMoPs) were subsequently prepared for each sub-project. Crown-TECH Consult Ltd was commissioned to prepare a consolidated Environmental and Social Management Framework and Enviromental Codes of Practice (ECOP) to ensure that the proposed DMDP is compliant with the World Bank (WB) and Government of Tanzania policy and legal requirements.

This ESMF and ECOP consolidated report is prepared to present, in a more concise and consistent form, the various environmental impacts of the proposed projects, and to set up its ESMPs and ESMoPs for project implementation and operation. The majority of environmental conditions, issues and impacts in the three Municipalities of the Dar es Salaam Region are relatively similar and are presented as such in this report. Gaps identified during the review of the ESIAs, RAPs and ESMPs were addressed accordingly during the review stage. The project ESIAs and ESMPs have also been used as the key source for baseline and social and environmental conditions; screening tools for specific and residual and cumulative impacts; analysis of alternatives; and comprehensive record of the community consultations and engagement.

1.2 Summary of Relevant Baseline Conditions

Much of the baseline information on the three Municipalities is similar. Thus, this section provides general baseline conditions for the whole Dar es salaam City as it relates to the proposed DMDP.

1.2.1 Location, topography and climate

Dar es Salaam region which also makes the City is located along the Indian Ocean coast and covers a total area of 139.3 km2. Administratively, the City is divided into three Municipalities of Kinondoni, Temeke and Ilala.

- ***Geographical Location***

Dar es Salaam region is located between Latitudes 6.36 and 7.0 degrees to the South of the Equator and Longitude 33.3 and 39 degrees to the East of Greenwich. The region lies along the shore of Indian Ocean in the East and boarders *Pwani* region in the West, South and North.

- ***Topography***

Dar es Salaam is characterised by flat topography along the coast of the Indian Ocean in the south–east and getting slightly undulating and hilly in the hinterland mainly in the north-west **(*See Layout* Map).**

- ***Climate***

The climate is characterized by high temperatures almost throughout the year, ranging from 19^0C to 33^0C. The maximum temperature is experienced in October and November. The annual average temperature is 25.4^0C. Rainfall is bimodal with short rains falling from November to December and the long rains from March to June. Maximum average rainfall

ranges between 800 mm to 1200 mm and mostly rains in April. Humidity is around 96% in the morning and 67% in the afternoon.

1.2.2 Human settlement

Settlement patterns in almost all the municipalities is similar, where by it radiates from the city centre and grows linearly along major roads, except in the peri urban areas, where settlements are scattered. High density settlements are mostly found in Kariakoo, Buguruni and Mzizima (Dar es Salaam City Environmental Outlook, 2011).

According to the UN - Habitat report, 80% of residents of Dar es Salaam live in unplanned settlements (UN Habitat, 2010). Inadequate implementation of the City Master Plans coupled with weak enforcement of existing laws have influenced the existing settlement patterns. Among the major impacts of the unplanned settlements include the existence of sub-serviced settlements, encroachment of risk-prone areas that are flooded during the rainy seasons (i.e. Kigogo and Jangwani areas) and haphazard disposal of waste in water sources (i.e. along the Msimbazi River).

1.2.3 Existing roads, accessibility and traffic congestion

Kinondoni Municipal Council has a total of 178.8 km of tarmac roads, 478.60 km are gravel and 155.4 km are earth roads. Ilala Municipality enjoys good services of all important infrastructures. It can be easily accessed from all parts of the country by well maintained tarmac roads, railway lines, as well as air and sea services. The Mwalimu Nyerere International Air port is located in Ilala Municipality, making it an important gateway port. Also, both TAZARA and Central Railways have central terminals and headquarters in Ilala Municipality. Most of the road right-of-ways in Temeke Municipality have congested buildings of different types, values and used multi-purposely. Both public and individual buildings as well as services will be affected by the roads development. Some of the roads have public trees and flower beds. Gravel roads mostly pass through unplanned squatter areas.

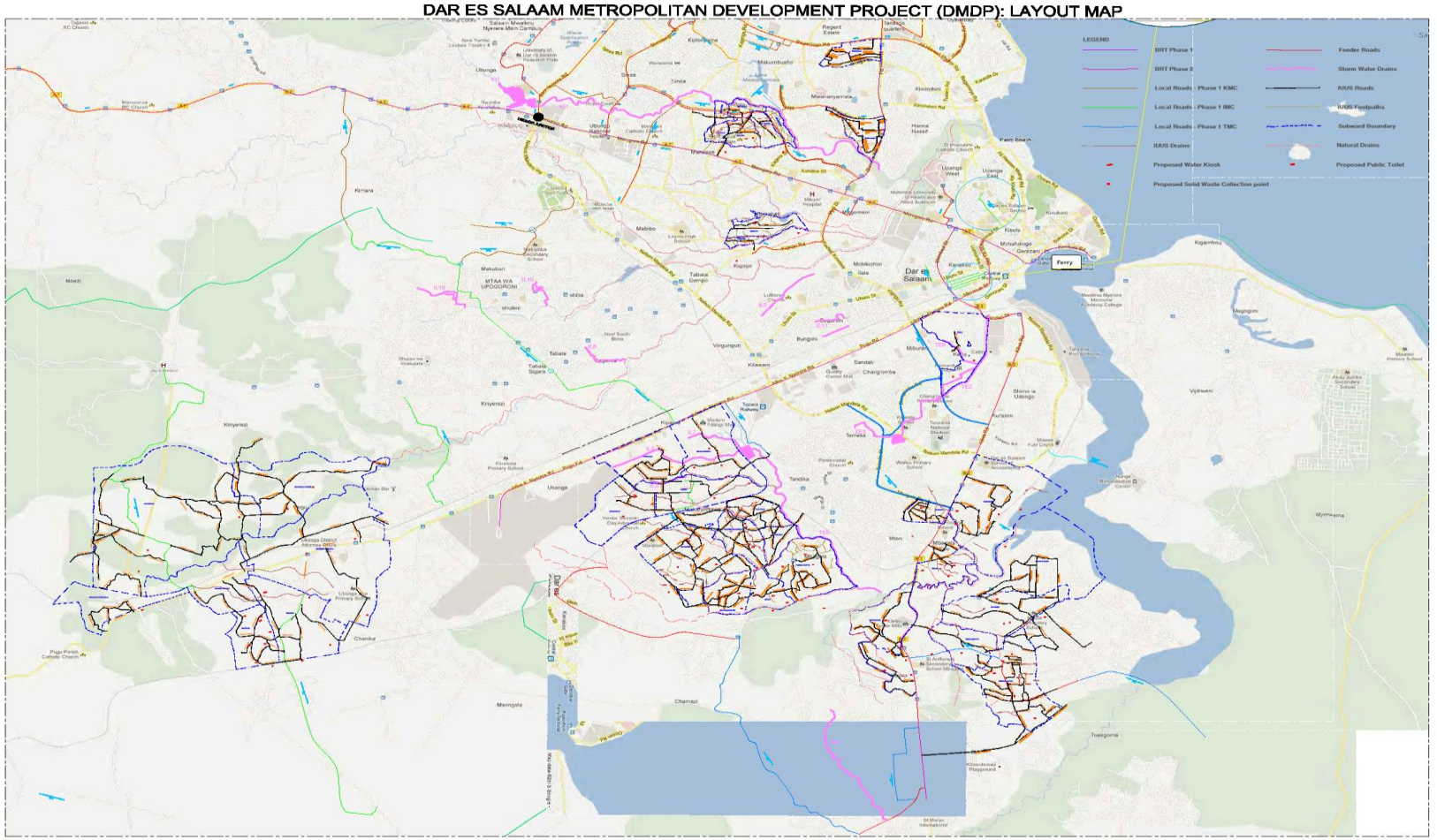


Figure 1.0: Map layout showing the Dar Es Salaam Metropolitan Development Project

The sub wards are accessible by main tarmac roads, and few internal roads. However, most of the existing roads have poor drainage system, while some of them have none **(Figure 1.1).** Most of internal roads have become narrowed by encroachment of settlements expansion. There are a significant number of internal roads which are encroached to the extent that they are not even passable by three wheeled vehicles i.e. they have dead ends. It is not surprising that the population in most selected roads expressed access road improvements as the main priority.

Figure 1.1: Example of Existing Walkway in TMC

Thus, some of the 'dead' roads are now proposed to be converted to walkways. Provision of walkways will be in such a way that they will interconnect the areas and will be wide enough to allow passage by the three wheeled vehicle (Bajaj) and hand push carts (used in waste collection). There are existing walkways in some of the sub wards **(Figure 1.2),** However, some of them need rehabilitation including paving, widening and installation of storm drains.

Figure 1.2: Typical roads in TMC sub wards Traffic Congestion

1.2.4 Air quality

There are many sources of air pollution in Dar es salaam, including gaseous dust and particulate emissions from motor vehicles, industrial stacks, construction activities and mining activities. The fish market contributes largely to odor problem in the city Centre. Sources of noise are such as construction actives, traffic, entertainment centers and commercial sites like markets. The main pollutants emanating from these sources are sulphur dioxide, carbon monoxide, nitrogen oxides and particulate matters Paul (2008) and Jackson (2005).

The amount of dust generated is determined primarily by the volume of traffic using the unpaved roads as well as the speed, weight, and number of wheels of the vehicle. The abrasive resistance of the road surface material and the amount of lanes as well as seasonal variations are also important contributing factors. Dust can result in stunted vegetation growth, become a nuisance and health problem to road users and nearby communities including hay fever and allergies. For motorists using unpaved roads traffic generated dust can reduce visibility and cause driving hazards. According to the ICF International (2009) suspended particulate matter (SPM) is the most critical transport sector pollutant for Dar es Salaam City, followed by SOx and NOx as shown in **Table 1.1** below.

Table 1.1: Estimated Annual Emission Loads of Air Pollutants in Dar es Salaam City

Air Pollution Source	**Suspended Particulate Matter (SPM)**		**NO_x t/yr)**	**SO_x (t/yr)**	**Benzene (t/yr)**
	PM_{10} (t/yr)	**$PM_{2.5}$ (t/yr)**			
Industrial	55,647	50,082	1,215	453	-
Domestic	19,366	17,429	-	3,325	339
Vehicle	442	398	1,250	2,851	436
Road dust	10,717	1,176	-	-	-
Total	**86,173**	**69,086**	**3,752**	**6,629**	**776**

Source: ICF International (2009)

Paul (2008) presents pollutants concentrations in major roads in the city Centre **(Figure 1.3).** Average concentrations of two major pollutants were found to be above the WHO guideline.These pollution levels are definitely higher today than presented here due to increased traffic levels in Dar.

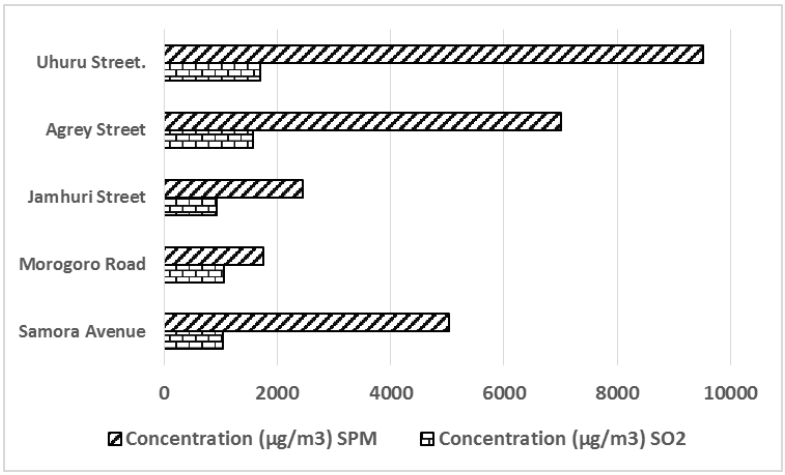


Figure 1.3: Roadside Concentration of Pollutants in Ilala (Source : Paul, 2008)

Regarding noise pollution, at any location in the Dar es Salaam City, both the magnitude and frequency of environmental noise may vary considerably over the course of the day. Variation is caused both by changes in the noise source, and by changes in weather conditions. According to JICA (2010), noise level (Leq) in Dar es Salaam City ranges between 40 and 80 dBA, and passenger vehicles contribute more significantly to the problem compared to other vehicles. According to Kassenga and Mbuligwe (1999), roads construction noise and vibration pollution in Dar es Salaam City varies between 60 dBA and 70 dBA and surpass Tanzania environmental noise standards for residential areas.

Noise pollution is more significant during day time, with peaks in morning and evening hours. During night times, noise levels decreases to values below 60 dBA. The WHO suggest that exposure to an environmental average noise level of 70 dB will not cause hearing impairment. An adult person's ear can tolerate an occasional noise level of up to 140 dB, but for the children such an exposure should never exceed 120 dB.

1.2.5 Storm water drainage

The intensive urban development (in terms of housing, roads and other, developments) in Dar es Salaam have greatly increased the amount of runoff water and at the same time reduced the surface area which can absorb the runoff through ground seepage. This situation is compounded by the fact that all three municipalities lack adequate drainage network, particularly in suburban areas. Since the existing drainage systems are over 20 years old, most drains no longer serve their purpose due to misuse such as garbage dumps and lack of maintenance **(Figure 4.10).**

Also, in most of the sub-wards, drainage is poor partly because roads, for which storm water drainage is normally provided, are in poor state. Fo example, during the survey it was observed that most of existing roads have no/or irregular storm drains. In some cases the available storm drains are not lined and are of inadequate capacity. On the other hand, the drains are clogged either due to excessive siltation and/or growth of vegetation or by solid

waste disposed into the drainage system. Poor provision of storm drainage system and/or poor management of the existing ones accelerate floods and soil erosion **(Figure 1.*4a).***

Figure 1.4a: Example of Unlined Storm Drainage Channel at TMC

Furthermore, rapid unplanned urbanization in the municipalities has led to flood risk in many informal settlements, with a wide range of associated health and other problems to residents. Floods are common in many parts of the City, where the resident population expressed that flood is the leading life risk in their environment. Records from the dispensaries in the City indicate that the health situation is characterized by high occurrence of common preventable diseases such as malaria, UTI, eye disease, diarrhoea, HIV/AIDS, skin disease, intestinal worms and other similar diseases. High occurrence of malaria and other water related diseases is associated with favourable mosquito breeding sites observed in most of the project sub wards **(Figure 1.*4*b).** Poor sanitation, lack of proper waste collection and disposal facilities and unavailability of quality and quantity water are related to prevalence of water borne diseases.

Figure 1.4b: Soil Erosion Due to Storm Water Flow Along a Walkway in Dar es Salaam

1.2.6 Surface and ground water quality

Surface water bodies in Dar es Salaam City have become waste dumping sites. Rivers and streams receive hundreds of tons of pollution loads from various industries. Physically, this is evidenced by the strong colors of the flowing/stagnant water in these streams. A number of industries especially in Ilala Municipality dispose either semi-treated or untreated wastewater in the Msimbazi River (URT, 2011). **Table 1.2** and **1.3** present pollution loads and seasonal water quality respectively.

Table 1.2: Pollution Loads in Msimbazi River, Dar es Salaam

Descriptions of diffuse pollution sources	**Pollution loads estimates (t/yr)**	
	Minimum	**Maximum**
On-site sanitation systems *	20.32	101.57
Industrial areas that have no sewers	17.70	141.56
Informal sector activities premises	16.12	80.61
Storm water from untrained areas	8.57	42.83
Farm and animal grazing lands	19.75	80.57
Illegal solid waste disposal sites	11.17	55.86
Total pollution load	**93.62**	**503.01**

* On-site sanitation systems exclude contributions discharged via tributaries and outfalls.

Source: Kassenga and Mbuligwe (2009)

Table 1.3: Water Quality in Msimbazi River During Wet and Dry Seasons

S/No.	Parameter	Period	Concentration
1	Iron (mg/L)	Wet Dry	0.68 - 1.39 0.66 - 0.87
2	Suspended solids (mg/L)	Wet Dry	59 – 131 28 – 50
3	Faecal Colliform (counts × 10^4 /100mL)	Wet Dry	2.7 – 58 3.69 – 11.7
4	Turbidity (ntu)	Wet Dry	62-70 30-41
5	Colour	Wet Dry	214-316 194-247
6	Chlorine (mg/L)	Wet Dry	402-413 372 – 450
7	Electric conductivity (mS/cm)	Wet Dry	8.7 – 9.7 8.9 – 10.4
8	Sulphates (mg/L)	Wet Dry	32 – 60.4 61 – 456

Source: Kassenga and Mbuligwe (2009)

Groundwater pollution in Dar es Salaam City is due to both point and diffuse sources. Point sources include on-site sanitation facilities (septic tanks and pit latrines), infiltration from waste stabilization ponds, solid waste dumpsites, underground fuel tanks, garages and petrol stations, industrial establishments and other commercial points. Most of these sources were observed in the City, with the exception of waste stabilization ponds and underground fuel tanks. Diffuse sources include urban agriculture (i.e. small vegetable farms seen in swampy areas or along the stream/river banks). Secondary data on estimates of ground water pollution load from households in unplanned areas are presented in **Table 1.4.** Such statistics can be used to estimate similar parameters from new toilets, and camp sites (if any).

Table 1.4: Estimation of Ground Water Pollution Loads in Dar es Salaam

Parameter	Pollution load (kg/yr)	
	Unplanned ares	Planned ares
COD	52.1	101.6
BOD5	5.2	10.2
TOC	29.8	58.1
NH3-N	19.3	37.8

Source: Mato (2002)

Secondary data on ground water quality from 36 randomly selected boreholes in Dar es Salaam City from the year 1999 to 2001 **(Table 1.5)** reports high levels of nitrite and bacterial contamination in boreholes randomly selected in Ilala. The connetrations of chlorides and faecal coliform were above TBS standard, indicating ground water contamination by human waste.

Table 1.5: Ground Water Quality Parameters (1999 – 2001)

Parameter	**Sulfates**	**Nitrites**	**Chloride**	**Turbidity**	**Feacal Coliform bacteria**
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(colonies/100ml)
Ilala Boma	30.7	1.8	1625	3	0
Msimbazi	32.1	1.7	920	1	0
Uhuru Mchanganyiko	58.2	3.5	1890	12	0
Gerezani	30.7	1	1262	0	3
TSB standard	600	100	800	30	0

Source: Mato (2002)

1.3 Project Objective, Principles, and Components

The Project Development Objective is to improve urban services and institutional capacity in the Dar es Salaam Metropolitan Region.

1.3.2 Principles

The following principles were adhered to during project preparation and design and will continue to be applied during project implementation:

- active participation by stakeholders including communities in the planning, design and decision-making;
- adoption of appropriate functional technical standards in the planning and design of infrastructure improvements, thereby ensuring costs are minimized and infrastructure provision is affordable by the municipalities and the communities.
- minimizing relocation and/or resettlement in order to maintain cohesion and social fabric of the communities.
- improved service provision to all households in upgraded communities upgraded, irrespective of their registration status.

1.4 Project Components

Component 1: Priority Infrastructure. This component will finance improvements and constructions of: (i) priority roads – local and feeder roads in the urban core to alleviate congestion hotspots, and support public transit, mobility and connectivity to low-income

communities, especially improving accessibility to the BRT system; and (ii) primary and secondary drainage system – including bank stabilization, retention ponds, connection to the secondary network etc. around five river basins of Dar es Salaam.

Component 1a - Priority roads supporting public transit, mobility, and connectivity to low income communities. This sub-component will finance improvements and constructions of priority sections of the existing local and feeder roads in the urban core, totaling 41.5 km, to reduce congestion hotspots, and improve accessibility to the BRT system by low income communities. The portions connecting to the BRT will incorporate transit and pedestrian oriented design principles, and help establish the standards for the BRT's future expansion.

The road sub-projects were identified from a long-list of priority investments provided by the DLAs. Roads were selected based on: (i) population density, and proximity to low-income communities; (ii) connectivity to DART and its feeder routes; (iii) contribution to developing compact dense urban areas, versus encouragement of sprawl; (iv) identification as strategic links of the urban road network plan; and (v) to spread benefits equitably across municipalities while having metropolitan-wide impacts.

Component 1b: Flood Control and Storm Water Drainage. This sub-component will support improvement of 31.5 km of the primary and secondary drainage system (bank stabilization, retention ponds, connection to the secondary network, etc.) around the five river basins of Dar es Salaam, including the Sinza (Kinondoni), Msimbazi (Ilala), Gerenazi Creek (Temeke),Yombo (Ilala and Temeke), and Kizinga (Temeke).

The project will introduce the use of retention ponds (i.e. low area that floods in extreme storm times, which can function as public green spaces during non-storm events). This innovative approach, not yet carried out in Tanzania, will significantly cut capital costs and resettlement requirements. The engineering design factors in the effects of climate change and allows for extra hydraulic capacity in the project investments. Dar es Salaam does not currently have a Drainage Master Plan – thus initial investments would be limited to the obvious improvements to the primary and secondary network, and some strategic sections of the secondary network. The project would (through Component 4) support preparation of a Drainage Master Plan to prioritize future secondary and tertiary investments, develop operations and maintenance schemes and budgets, related work for metropolitan urban resilience, and capital works planning.

Component 1c: Emergency Response. This sub-component will support, at GoTs request and the Bank's concurrence, activities (assessments, technical assistance, works, and purchase of equipment) resulting from natural or man-made disasters, or public health events in the Dar Metro. This is currently a zero sum sub-component, and funds could be made available by reallocation or additional financing.

Component 2: Upgrading in Low-Income Communities. This component will finance the upgrading of low-income communities in all three municipal councils, by improving basic

services including: (i) roads and road related infrastructure (roads, bridges / culverts, footpaths, traffic lights etc.); (ii) environmental related works (storm water drainage, solid & liquid waste management, street lights); and (iii) community related amenities (parks, markets and sub ward office).

Approximately 40 low-income community sub-wards, mostly in the urban core, have been identified for upgrading. The upgrading approach draws on experience from the past Bank-financed CIUP and aims to improve basic services, enhance connectivity between primary and secondary networks, and minimize resettlement by adopting flexible design standards. The community upgrading plans have been prepared using community participatory approach, and employed socio-economic surveys, focus group discussions, amongst other methods and involved multiple key stakeholders including the community, local leaders, municipal councils and non-governmental organizations.

The demand for upgrading is high in Dar es Salaam, therefore, selection factored in: (i) working in dense, highly populated communities with poor infrastructure; (ii) focusing on connectivity to the primary road and drainage network financed through DMDP; and (iii) investments that would not further encourage sprawl, but densification. While in-situ upgrading is one strategy to address the urgent housing needs and conditions of low-income communities, forward thinking and planning is also required to address the larger issues of land, informality and sprawl. Component 4 will have complementary analytical and planning work to help the government address related settlement issues, such as strategies for addressing informality, curbing sprawl, scaling-up upgrading, and land management.

Component 3: Institutional Strengthening, Capacity Building, and Urban Analytics. This component will support: (i) metropolitan governance arrangements and systems; (ii) municipal finances and technical capacity through own source revenue collection and development and integration of GIS; (iii) integrated transport and land-use planning; (iv) operations and maintenance systems; and (v) urban analytics. This component will be partially funded by the Nordic Development Fund (pending approval).

These sub-components are further elaborated below:

Component 3a: Improving Metropolitan Governance Arrangement and Systems. DMDP will support PMO-RALG and the DLAs with further technical analysis of the options, developing an action plan for implementation, and preparing legal documents, and transition support to improve the functions and efficiency of metropolitan governance.

Component 3b: Improving Own Source Revenue Collection Systems and Mainstreaming Geographic Information Systems. This component will launch and operationalize the Local Government Revenue Collection Information System (LGRCIS) for Dar es Salaam. Support includes the installation and training for LGRCIS, migration of data from the old system, update of the valuation role, improve billing and collection systems, and finance the hardware and software. It will provide training and equipment for developing GIS and

mainstreaming its use in DLA technical departments – as well as the institutional framework for better sharing spatial data and improving access for the public.

Component 3c: Support for Integrated Transport and Land-use Planning. This component, through integrated planning and technical support, will help maximize the benefits of the phase 1 BRT system, assist with developing priority nodes and serve as demonstration for future BRT corridors. The two key outputs are (i) Corridor Development Strategy and (ii) Strategies to Operationalizing TOD/Corridor Development. Activities would introduce transit-oriented design, station area development plans, traffic management strategies, non-motorized transport accessibility study/planning, PPP or other operational strategies, and culminating in a charette-based Corridor Development Strategy. Stakeholder capacity building activities oriented towards improving community participation, developing community of practice and increasing knowledge and execution capacity of the integrated corridor will be carried out. The sub-component will also provide just in time technical assistance to DART (and related organizations supporting the BRT and planning).

Component 3d: Strengthening Operations and Maintenance Systems. This sub-component will strengthen the capacity of GoT (including Ministries, Departments and Agencies) and the DLAs to plan, deliver, operate and maintain public infrastructure and services. Tasks include developing (i) a drainage master plan and (ii) road maintenance management systems for DLAs. The new GIS systems developed through the LGRCIS will help support this work. New ICT technologies may offer more cost effective means to support O&M, thus innovation pilots will be encouraged.

Component 3e: Urban Analytics. Related technical assistance will be carried out to address the long term urban challenges, and to improve competitiveness of Tanzania cities to establish sound analytical foundations for future engagements. Most activities will be identified through the forthcoming Tanzania Urbanization Review. Activities could include feasibility studies and policy analysis on topics such as metropolitan sprawl and informality, land management, development of economic opportunities (e.g. industrial zone development), cultural heritage, or other studies needed to prepare investments for future projects in the series, or later project phases.

Component 4: Implementation Support and Monitoring & Evaluation. This component will enable the key implementing agencies (PMO-RALG, DLAs and DART) to execute the project. This is expected to include operational costs for the direct project management and supervision functions, including procurement, accounting, financial management, monitoring and evaluation (M&E), audit of project accounts, meetings and workshops, and impact assessments. Resources for further project preparation are included. In addition, funds are allocated for critical maintenance equipment required for long term sustainability of priority infrastructure.

Safeguards instruments focused on Component 1a, 1b and Component 2, with identified institutional strengthening and capacity building activities for environmental and social management included under Component 3.

Table 1.6 summarises the three major project components (each of which is composed of several sub-components of project bid packages) and briefly elaborated in the paragraphs below.

Table 1.6: DMDP1 (First Cut) Sub-Projects

COMPONENT	SUBCOMPONENT – BY PROJECT BID PACKAGE	LENGTH (KM)
Surface Drainage		
	Sinza River - KI 1	7.5
	Msimbazi River - IL5; IL8; IL10, IL11	5.6
	Gerezani Creek - TE2; TE3, TE9	6.9
	Yombo River - IL3; IL7; TE8	9.8
	Kizinga River - TE4	2.0
IUUS Roads		
Tandale Ward	8 road sub-components	4.740
Mbulahati Ward	3 road sub-components	2.786
Mwananyamala Ward	10 road sub-components	6.346
IUUS Foot Paths		
Tandale Ward	8 foot paths	5.417
Mburahati Ward	3 foot paths	8.629
Mwananyamala Ward	10 foot paths	1.260
Local Roads		
	Kinondoni Pkg 1 (4 components)	9.0
	Kinondoni Pkg 2 (5components)	6.95
	Kinondoni Pkg 3 (3 components)	7.50
	Ilala Pkg 1 (5 components)	3.40
	Ilala Pkg 2 (1 component)	3.30
	Temeke Pkg 1 (I component)	4.60
	Temeke Pkg2 (2 components	4.99

1.5 Types of Works by Component

1.5.1 Surface water drainage

The Surface Water Drainage Systems involves the rehabilitation of storm water drainage, including construction of sequential detention ponds where necessary. The project design includes the following:

- Concrete lining of selected sections of the open channel.
- Enlargement of selected bridges.

- Enlargement of the open earth channels where necessary.
- Relocation of houses within the river bed where relevant.
- Construction of detention ponds on selected rivers to provide temporary storage and attenuation of surface waters.

Where the river channel needs widening, construction detail using gabion baskets will be employed for the new river bank and bed. For geotechnical reasons, reinforced concrete channel detail will be used where necessary. Where no channel widening will be required, only cleared of vegetation, garbage and sediments will be undertaken. Wherever it does not require resettlement or affect any other infrastructure, the design incorporates a correction of the riverbed path to improve the flow.

The design principle proposed for enlarging sections of the river is to increase the cross-sectional width. This approach avoids the need to construct levees on the river bank and/or to excavate and deepen the river bed. This will make construction easier and reduce the level of physical community severance when the riverbed is dry and forms a viable pedestrian link between the river sides.

1.5.2 Improvement of local roads

In broad terms, improvement will involve a combination of overlaying the existing road, partial reconstruction and/or total reconstruction of road sections as necessary. The rehabilitation and/or replacement of existing drainage structures and the construction of new, additional drainage structures are also important features of the proposed works. Pertinent features of the road design include:

- The width of the bitumen carriageway will be 7m (Asphalt Concrete)
- The width of the (paved) shoulders will be 1.5m
- The width of the walkways will be 1m
- The width of the cycle track will be 1m
- Provision of 60 passengers capacity bus bays for Major roads
- Cross-drainage structures, intersections and ancillary road works (ie Street lighting)
- A road reserve corridor will be negotiated with the communities. However, a mandatory construction corridor of 15m will be acquired.
- The road will still continue to have another 20-year design life

More specifically, project mobilization would entail recruitment of of labour force, mobilization of construction material and equipment and construction of offices/camps as well as acquisition of various permits as required by the law. Other activities during this phase include Topographical Survey, Geo-technical Investigation, Soils and Materials Investigation, Land acquisition, material storage and material preparation, Identification sources of material including and source of water. During project construction phase, major activities include;

- Extraction and transportation of materials (gravel, sand, hard stones, aggregates, water and bitumen)
- Clearing the Corridor of Impact (CoI).
- Formation of the road embankment, establishment of sub-base and base, road surfacing
- Construction of drainage structures.
- Construction of Bus Bays for major roads.
- Installation of road furniture.
- Provision of pedestrian crossings, speed humps and rumble strips where necessary.
- Landscaping of areas covered by the project roads and establishment of vegetation for functional and aesthetic purposes on cut and fill slopes.
- Final finishing and cleaning up of the roads after construction, treating of old roads and temporary diversion

In the unlikely event that that the project needs decommissioning, the major activities would include

- Demobilization of temporary structures will be done for proper restoration of the site including rehabilitation of the workshop and stockpile yard, rehabilitation of campsite at least to the original condition, clearance of all sorts of wastes (plastics, wood, metal, papers, etc).
- Deposit all wastes to the authorised dumpsite.
- Restoration of water ponds to a natural and useable condition
- Termination of temporary employment.

1.5.3 Infrastructure upgrading in unplanned settlements

The Project would finance the upgrading of a total of 21 critical local roads in Ilala Municipality constituted in Packages 1 and 2, specifically, upgrading them from gravel/earth to bitumen standard or by improving the existing tarmac roads. Within Kinondoni Municipality there are 3 such local road projects in packages 1, 2 and 3, to be upgraded mostly from gravel to bitumen standard. In Temeke Municipality, 3 local roads in packages 1 and 2, will be upgraded from gravel/earth to bitumen standard or improving the existing tarmac roads.

The Infrastructure upgrading shall be implemented in Unplanned and Un-served settlements, and include some or all of the following types of investments .

- Roads including road side drainage: Primary access roads with an average daily traffic (ADT) volume of more than 100 vehicles would be tarmac paved to prevent excessive maintenance costs. All roads will be designed with a side drain (at one side of the road only), with shoulders on either side of the roads.
- Bridges/Culverts;
- Footpaths: Most footpaths will be compacted earth constructions.
- Traffic lights;

- Street Lights;
- Storm water collector drains;
- Solid Waste Skip Containers
- Public Toilets;
- Community Water Kiosks;
- Skip Loaders;
- Community market Place; and
- Community Parks

1.6 Compliance with Tanzanian Policy & Legal Framework and World Bank Policies

1.6.1 Tanzanian policy and legal framework

The project complies with the Tanzanian Environmental Management Act (EMA, 2004), including the environmental and audit regulations (2005), standards and other relevant regulations which are described in detail in the component-specific ESIAs and listed in **Annex 1.**

Overall, DMDP infrastructure works are expected to improve key aspects of environmental quality in Dar es Salaam, including relieving traffic congestion which will result in improved air quality, as well as reducing flooding and improving sanitation and public safety. The project road works will contribute to lowering greenhouse gas emissions through reduced vehicle idling and planning such as building capacity for transit oriented development. DMDP drainage works and upgrading in low income communities will improve urban resilience to current and future climate variability through both traditional drainage infrastructure as well as piloting green infrastructure investments such as storm water detention ponds that can be preserved and utilized as green space during dry spells.

1.6.2 World Bank triggered safeguards

Overall, environmental and social due diligence has found that investments would pose no large-scale or irreversible negative environmental and social impacts, and are consistent with a Category B safeguards classification including when cumulative impacts of the project as a whole are considered. Environmental safeguard policies triggered include Environmental Assessment (OP 4.01) and Physical Cultural Resources (OP 4.11). DMDP infrastructure works are expected to improve environmental quality in Dar es Salaam, including relieving traffic congestion and air quality as well as reducing flooding and improving sanitation and public safety. Negative impacts of individual components are site-specific and largely able to be addressed through design, good engineering practices, and proper supervision. In addition to environmental safeguards, DMDP also triggers the Involuntary Resettlement policy (OP 4.12) given that residences, assets and livelihoods will be impacted.

1.7 Safeguards Approach

Safeguards due diligence has been carried out through preparing ESIAs for each component, and this document, an ESMF for the road, drainage and urban upgrading works (implemented by the DLAs). This consolidated ESMF includes standard Environmental Codes of Practice (ECOPs) that apply to typical impacts of road, drainage and upgrading works. In addition, specific measures are included in the ESMF that are unique to drainage works. **Table 1.7.7** outlines the DMDP civil works components and activities, as well as the approach to environmental safeguards and instruments prepared.

Table 1.7: Approach to Environmental Safeguards and Sustainability by Component

DMDP Component		**Activities**	**Approach to safeguards**
1a	Priority roads	Estimated 41.5 km of road upgrading, including gravel/earth to bitumen standard, and installation of road-side drains, and bridge improvements.	ESIA and preliminary RAP done for works with designs in each DLA and Environmental Codes of Practice included in ESMF.
1b	Flood control and stormwater drainage	Estimated 31.5 km of storm water improvements, including bank stabilization, retention ponds, and connections to the secondary drainage network.	ESIA and RAP done for works in each DLA and Environmental Codes of Practice included in ESMF.
2	Low income community upgrading	Basic service improvements in approximately 40 sub-wards, including roads, drainage, parks, markets, street lighting.	Preliminary ESIA and preliminary RAP done in each DLA and Environmental Codes of Practice included in the ESMF for future works.

Preparation of the ESIAs and the ESMF has undergone an extensive consultation process with relevant stakeholders, including local authorities, public utilities and water basin authorities, including technical review by the National Environmental Management Council (NEMC), Draft safeguards documents were disclosed in the InfoShop and made available in Tanzania in hard copy in the three municipal offices and PMO-RALG, and soft copies on PMO-RALG's website. Consultations with relevant authorities and communities have been ongoing throughout project preparation, and summarized in the ESIAs. A public comment period on the documents was open and a workshop with authorities to review the draft ESMF was held.

Environmental screening during the ESIA process found conditions in the project areas of the three municipalities included significant environmental degradation including poor sanitation (e.g. open dumping and mismanagement of refuse), frequent flooding and standing polluted water during rain events (facilitating the spread of water-borne illnesses and vector diseases), air pollution due to vehicle emissions and dust from poor road conditions, and degraded infrastructure. No sensitive sites of ecological or cultural significance in the project area were found in the environmental screening.

Environmental assessment of the local roads, drainage, and upgrading in low-income communities has been carried out separately but in a coordinated process. ESIAs prepared for each component in each of the three municipalities found general potential negative impacts including increased air pollution, vibrations, surface and groundwater pollution, soil erosion and sediment deposition, increased waste, traffic disruption and congestion, businesses losses, public and worker safety, and possible impacts on cultural or achaeological sites (though no direct impacts were found). In addition to general impacts, site-specific impacts of individual subprojects were assessed and found to be mainly associated with the surface water drainage component. These impacts included management and disposal of waste materials from dredging natural drainage courses, potential disruption of natural drainage during construction works causing flooding, damage and/or interruption of public utility services (electricity, water, and telecommunications), and loss of vegetation from land clearing that could worsen erosion.

However, the ESIAs found that the impacts can be mitigated through (i) the application of good engineering and construction management practices, (ii) close supervision and monitoring of contractors' performance, and (iii) close consultation with, and monitoring by local authorities and communities. Mitigation measures during the operation phase will be particularly critical for drainage infrastructure, to avoid negative impacts of improper management including management of detention ponds and ensuring that drainage infrastructure is maintained to avoid future flooding.

1.8 ESIAs Methodology

ESIAs were undertaken for each project component and specifically for each DLA. This consolidated ESMF and ECOPs draw from the conclusions of these ESIAs, and can be applied to the ESIAs and ESMPs for future works. The methodologies include the following:

- The matrix method was adopted for predicting and evaluating environmental impacts of various component activities during mobilization, construction and operation phases; the assessment factors were determined according to identification, filtration to various aspects such as the scope of the affected areas, affected extent and factors, etc.
- Information and data on geology, soils, hydrology, climate and meteorology, ambient environment and socio-economics were collected and analyzed for their relevance. Climate change was felt to be partially associated with vulnerability from floods and the drainage feasibility study took into account climate change projections which were considered in the designs.

- Representative samples of wastewater, surface water, groundwater, ambient air and noise levels, etc. were analyzed and compared with Tanzanian standards (and where necessary international standards) to assess the baseline conditions for the project impact area.
- Socio-economic and health surveys were conducted to investigate the baseline characteristics of the project areas. Views and concerns were collected from the local Governments and individuals.
- The project will include land acquisition and cause impacts on parts of properties such as buildings/houses, business premises, land, crops, trees etc. Particularly in relation with the Roads and Surface water drainage Sub-projects. Resettlement Action Plan (RAP) and valuation of affected properties have been conducted to establish the affected properties and value of the affected properties in order to ensure fair compensation.
- Public and stakeholder participation was carried out involving communities through public meetings, dialogues, government officials, municipal council, TANESCO, DAWASA, DAWASCO,TTCL and TANROADS officers responsible for the development and maintenance of the three major sub-projects in the City of Dar es Salaam. The consultations and meetings disseminated information to people and government about the proposed development and touched on the existing socio-economic situation in the area and the need to identify possibilities of people likely to be affected during the project implementation as well as the community assets and properties expected to be affected.
- The ESIA and ESMPs for the project sub-components have followed the national guidelines for undertaking EIAs in Tanzania. The ESIAs went through the various processes of registration, scoping, full ESIA, report writing and technical review by the National Environment Management Council (NEMC) for acquisition of the ESIA Environmental Certificate.
- Specifically under the Environmental, Social and Resettlement arrangement the following aspects will be carried-out:

    i. *Operationalization of grievance resolution mechanism involving Mitaa and Wards (Grievance and RAP Committees, Filing, nature & status)*
    ii. *Fairness in land-take: Cut-off date, valuation, compensation and resettlement*
    iii. *Maximizing PAPs participation (gender, age, income, geographical location, meetings, consensus and agreeing, etc)*
    iv. *Recording of the Nature and status of social and environmental risks and performance of ESMPs in place and;*
    v. *Processing and status of Approvals for Environmental and Social Impact Assessments*

1.9 Stakeholder Engagement Process

The DMDP has been prepared using stakeholder participatory approaches in which the stakeholders and the public have expressed their needs, concerns and aspirations. The project has been compiled by Community development experts, assisted by engineers elaborating to the communities the engineering solutions available and the costs so that the community select ed a knowledgeable choice.

Stakeholders were consulted during the ESIA process for Components 1a, 1b, and Component 2 as part of the overall DMDP consultation process, and additional consultations were also held specific to environmental and social impacts. Details on the consultation process can be found in the consultation and stakeholder engagement sections and annexes in the DMDP ESIA reports.

This section summarises the stakeholder engagement process on two levels: (i) the overall consultation process for DMDP, and (ii) the consultation process for the ESIAs and ESMF.

DMDP Consultation Process

Input from stakeholders and the public was considered essential for providing the authorities and the developer with an opportunity to ensure that consideration is given to the concerns and comments raised during the consultations. Consultations aimed at raising issues that are likely to be of interest to the communities and stakeholders in the ESIA process. Therefore, keeping in view of this requirement the first step in the process of stakeholder engagement was stakeholder identification; determination of who are the legitimate project stakeholders, and their key groupings and sub - groupings. Stakeholder consultations were done at the Regional and District level, and included decision makers and project affected groups such as local residents in and around the proposed sub-project location. Generally, major/key stakeholders included those who used utility services such as roads, water supply, sanitation and electricity. Other key stakeholders included regulatory authorities, municipal authorities, local leaders and local people of respective wards and jurisdictions. The Following stake holders were identified in the process.

- Officials of DLAs and sub wards.
- Elected representatives of regional, local, and municipal councils.
- Community Planning Team Members
- Utility supply companies (DAWASCO and TANESCO), and
- The Community at Large.

The consultation process started with the identification of major stakeholders of the project who had interest in the project and who were directly or indirectly involved. Most of the stakeholders identified were those who used utility services such as water supply, sanitation and electricity. Other stakeholders identified included regulatory authorities, municipal authorities, local leaders and local people of respective wards and jurisdictions.

Project briefing sessions were held at each of the priority sub wards presented by the Municipalities. The meetings were organised by the Focal persons in collaboration with the

Consultant and attended by Community Planning Teams (CPTs), Ward and Sub ward Officials. During the meeting the participants were introduced to the project and the process and the criteria for selection of investment Sub-Project Elements were presented and thoroughly discussed by the participants.

During scoping, meetings were conducted with CPTs at each Ward to brief the CPTs on the project to gauge their ideas, issues and concerns. When conducting the feasibility study (i.e. preliminary design, cost and cost benefit analysis etc.) the Consultant took into account all comments and opinions given by stakeholders including the Community. The proposed Investment Sub-Project Elements were then listed according to their weighted priority taking into consideration technical, economical, social, the Sub-Project impact to the community etc.

ESIA and ESMF Consultation Process

In addition to the overall consultation process for DMDP, specific questions and criteria were used in preparation of each of the project components in order to engage with relevant stakeholders and gain inputs on potential impacts as well as mitigation measures. These were then included in the ESIAs, ESMPs, and ECOPs designed in the ESMF. A summary of the process for each infrastructure component is presented below:

Component 1a (Priority Roads):

Preparatory activities were conducted by the team of consultants which aimed at engaging the stakeholders to take full part in the consultation process.

This included sending information towards leaders requesting their assistance in the preparation of public meetings within their respective constituencies. Stakeholders' consultations were done at ward level and mitaa located along the proposed roads within Ilala Municipal Council. The comments received and issues raised from these public participation exercises have been incorporated not only to enrich the report but also attached as appendix for reference. Indeed, the consultations greatly helped in determining mitigation measures for the project.

Different groups of people in the project areas participated fully in the public consultative meetings during the Study, the categories of interested people who participated are as exemplified but not limited to the following:

- Potential Land and Property Owners in the Project Area,
- Household members
- Women, Youth and Business community
- Leaders from wards and mitaa (chairmen and executive officers)
- Utilities and other institutions

Stakeholder concerns about positive and negative impacts included:

- Noted business improvements, job opportunities and access to social services
- Reductions in traffic congestion and accidents
- Concerns about HIV/AIDs during construction and operation of roads

- Resettlement impacts, including ensuring participation and fair and timely compensation
- Construction safety
- Nuisances such as vibrations, dust and noise
- Road safety issues during construction and operation of roads
- Impacts on public utilities

The consultative meetings both public and the focused ones to key informants from various institutions were successfully conducted and provided useful information related to the project's general socio-economic conditions in the project areas, and directly influenced the mitigation measures in the ESMPs for Component 1a as well as the ECOPs in this document. The minutes of the public consultations were recorded and have been attached as an appendix to each ESIA for evidence and reference.

Component 1b (Stormwater Drainage):

A stakeholder analysis was conducted to identify stakeholders, their major functions as they relate to the drainage works, and a determination made if they would be key to consult for inputs related to subprojects. Relevant stakeholders were then involved to get their views and concerns regarding the project. Most stakeholders were identified during early environmental scoping stage while investigating the main environmental and social issues of concern. Stakeholders were also identified through discussion and interviews with other stakeholders who thoroughly identified roles and responsibilities of different government organs, institutions and groups. Expert opinion was also used to identify major stakeholders of the project. Five major levels of stakeholders were engaged including:

- National levels: Comprising of Ministries
- District Levels: Municipalities
- Wards and Mtaa Levels (Local People and community leaders)
- Government Agencies and Departments
- International Organizations

Major issues of concern among stakeholders included the following issues most closely related to the project:

- *Resettlement and compensation*: Concerns included compensation payments prior to construction, timing of the valuation and compensation payments, and valuation of flood-affected households.
- *Community sensitisation:* Ensuring communities are engaged to manage infrastructure, for example to prevent theft and vandalism to sanitation infrastructure and to overall ensure a sense of project ownership
- *Health and safety:* Rules pertaining to health, safety and waste management should be enforced during construction and operation and increase waste collection points

Meeting minutes and consulted stakeholders are included as annexes to the ESIAs.

Component 2 (Community Upgrading):

ESIA and RAP consultations for Component 2 were embedded in the process to select community priorities as well as subprojects. The investment selection criteria included several related to environmental and social management, including:

- Relief of common problems in the community.
- Minimization of compensation requirements.
- Availability of land/right of way.
- Benefits are accessible to both advantaged and disadvantaged group.
- Socially and environmentally acceptable.

Stakeholders included government agencies, beneficiaries, commercial companies, and all other formal or informal groups associated with the project. Interviews and Community meetings were used in the process of stakeholder involvement. From one stakeholder, the team was connected to another and another stakeholder, in chain like or network process. Consulted stakeholders included:

- Municipal Council officials from the DLAs
- Utilities (including DAWASA, DAWASCO, and TANESCO)
- Community members, including Community Planning Teams in each of the targeted wards
- Local NGOs and CBOs

The primary positive and negative concerns by stakeholders related to the ESIA included:

- *Demolition of Houses*: The project will entail expropriation of land and property, especially houses. The owners were asking for fair compensation.
- *Accidents*: It is feared that the tarmac roads will claim people's lives due to reckless driving, over speeding and accidents. Advised the contractor/City council to carry out road users' education, installation of clear and understandable road signs (preferably in Kiswahili), use of speed humps at villages and general police surveillance.
- *Other Infrastructure*: Some stakeholders showed concern on the presence of other infrastructure such as water pipes, sewerage network etc near the project road
- *Improved Accessibility:* The roads will guarantee easy accessibility and therefore more physical development.
- *Dust during construction*: dust production is inherent to all road construction works. The contractor must have means to dampen the dust otherwise conditions may be intolerable.

Environmental and Social Management Framework: The ESMF includes measures consolidated from individual ESIAs – as implementers of the ESMF, this document was sent to the Dar es Salaam municipal councils as well as the city council and discussed in a meeting on September 9, 2014. The ESMF was subsequently revised based on inputs from the DLAs, and publicly disclosed by PMO-RALG, the DLAs, and the World Bank on 16 December 2014.

CHAPTER 2: DESCRIPTION OF PROJECT ALTERNATIVES

2.1 General Considerations

The proposed project investments are consistent with the respective Municipality's Master Plans as approved by the local governments. In accordance with national laws and regulations the Master Plans were also subject of approval by the environmental authorities. The baseline conditions and alternatives were considered during the project feasibility analysis, as presented in the Municipal ESIAs and project-based ESMPs where a brief analysis of a theoretical "without project" case, clearly demonstrate the benefits of the projects.In the course of the feasibility study and ESIA preparation, a more detailed analysis of alternatives was undertaken – where appropriate – for some sub-components, considering a combination of technical, economic, environmental, and social criteria.

2.2 Alternative Local Roads

Three alternatives were considered in these road sub-projects including the 'no project' alternative; alternative sites; and alternative designs.

The"no project" alternative was disqualified because choosing that alternative shall imply remaining with the status quo (without project) and loosing all the benefits of the project such as increased productivity and economic growth in Kinondoni Municipality. Therefore, adopting a "no project" alternative would mean failure to implement the transport and poverty alleviation policies.

Selection of project sites (roads) alternatives was done through rigorous processes which involved technical personnel and the proposed communities while observing the laid down criteria for selection of local roads. Alternative designs looked at the advantages and disadvantages of using asphalt concrete over other pavement materials (including bricks and concrete)and covered channels over open channels. Asphalt concrete was selected because it offered a number of advantages over other pavement materials including durability, cost-effectiveness, safety ease of construction, staged construction and recyclability.

Regarding storm water drains alternatives, covered storm water channels were selected over open drains because the former had added advantages including: preventing solid waste from intering the channels and reduce their carrying capacity; minimum risk of accidents that can be caused when people (especially children) fall into the channels taking into consideration the project is located in unplanned area; and the fact that covered drains can be used as walkways and therefore serve the space that would be required for wakways as is the case with open channel. This inturn reduce compensation costs.

2.3 Alternative Surface Water Drainage Improvement Systems

Three alternatives were considered, whereby *Alternative One* is the "no project" alternative. *Alternative Two* includes construction of detention ponds and several selected interventions along the water course to widen and/or train the river or creek to meet the necessary hydraulic requirements; *Alternative Three* excludes detention ponds but implements several

interventions along the water course to widen and/or train the river to meet the necessary hydraulic requirements, study analysis shows the need for deeper channels in *Alternative Two* compared with *Alternative Three* and the necessity to enlarge 6 bridges in *Alternative Two*, while in the *Alternative Three* only 2 bridges will be affected.

The "n*o project" alternative* simply maintains the current arrangement with no extra expenditure made to improve the existing situation.This situation is already resulting into environmental health hazards to the local residents, especially the vulnerable poor section of the community living in unplanned settlements. The flooding events will also continue to damage the existing infrastructure and utilities, hence perpetuating poverty in the area.

The comparison of *Alternatives Two* and *Three* focused on the cost of the intervention works and the need for resettlement caused by the enlargement of the river sections.From the performed analysis it was found that *Alternative Two* offered the best option both in terms of lowest construction cost and reduced impact on residents and property. In addition, stakeholder consultations with the Ministry of Works, PMO-RALG, World Bank, and Water Development and Management Institute concluded that project designs were developed on the assumption that the modified/integrated ponds would be properly incorporated into the proposed Development Plan for the detention ponds areas.

2.4 Alternatives for Infrastructure Upgrading in Unplanned Settlements

Three alternatives were considered under this project component i.e. "No Project" Alternatives, Sites Alternatives, and Sub-project Alternatives.

The *"No Project"Alternative* entails retaining the current status quo without upgrading the infrastructure. Adopting this option would mean avoiding most of the negative impacts associated with the project and missing all the positive benefits such as increased productivity and economic growth in Dar es Salaam City. Adopting this alternative would also be going against a number of national and international policies including National Human Settlements Development Policy, National Community Development Policy, Tanzania 2025 Development Vision and National Strategy for Growth and Reduction of Poverty (2005).

Consideration of *Sites Alternatives* was done in stages whereby during the inception of the project more sub-wards (than the selected ones) were considered and the list further narrowed down through a number of meetings and site verification. Consequently each Municipal Council came out with the final list of the sub-wards which are considered by this project. The following criteria was used to select the sub-wards for this project;

- Sub ward with roads leading to collector roads finally connecting the Main Road in hierarchial order.
- Sub-wards without very long road sub project but with adequate Right Of Way (RoW) to avoid requirement of high compensation.
- Sub-wards with less compensations.

  Community is ready to offer free space used as roads before.

Consideration of *Sub Project Alternatives* was done separately for each sub-ward, including: roads side drainage; Bridges/Culverts; Footpaths; Traffic lights; Street Lights; Storm water collector drains; Solid Waste Skip Containers; Public Toilets; Community Water Kiosks; Skip Loaders; Community market Place; and Community Parks. Consultation with communities and DLAs was used to identify sub-projects which fit at respective Sub-wards. Final selection of sub-projects was based on a number of criteria including the following criteria;

- Sub-projects addressing pressing existing problems in Settlements.
- Up gradaing existing access roads leading to collector roads finally connecting the Main Road in hierarchic order.
- Avoiding very long road sub project without adequate RoW, hence avoiding high compensation rate.
- Sub-projects with least compensations.
- Sub-projects acceptable to larger community with benefits of easy accessibility to both disadvantaged and advantaged groups.
- Sub projects bringing harmony with neighboring community.

CHAPTER 3: ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

3.1 Introduction

This chapter summarizes the potential impacts of DMDP, based on the project description and the environmental and social data collected during the detailed municipal-level ESIA studies, taking into account national and international requirements for EIA preparation, the national EIA regulations, and the World Bank's safeguard polices triggered by this project. The potential impacts are briefly summarized, while social impacts due to land acquisition and resettlement are addressed elsewhere in the social safeguards instruments i.e. RPF, RAPs and also ESMPs.

3.2 Potential Positive Impacts

Implementation of DMDP will create positive impacts on livelihoods, environmental conditions and infrastructure services in the project areas, particularly in the DLAs affected by the project. Key positive impacts of the three project components will be as follows:

- *Urban traffic and transportation:* Upgrading of roads and construction of new ones will subsequently reduce traffic congestion and accidents, thus improving road safety and access including access by emergency vehicles, such as fire fighting trucks.
- *Job creation and increased incomes*: Increased local employment opportunities will result mainly from construction activities for all three sub-projects while local businesses will benefit from operation of better roads and access. Better roads and reduced flooding in the City will also increase the land value especially along the roads, while improved connectivity will contribute to the socio-economic development of the respective Municipalities and the Dar es Salaam Region in the medium and long term.
- *Surface water drainage:* The project will improve capacity and capability of the drainage system and sanitary conditions,thus reducing flooding levels and ensuring the health of people and that of the environment. Surface water drainage will also contribute to the improvement and development of infrastructure, and benefit the general development of the municipalities. Moreover, security and health risks due to flooding and inadequate sanitation will be significantly minimized.
- *Creation of detention ponds:* The project will improve the drainage systems, canals and rivers, but also increase biodiversity,beauty and aesthetics of the municipality landscape.
- *Improvement of community facilities:* Open spaces for community meetings and other activities will be clearly marked and properly managed, thus improving community welfare and amenity, and building community cohesion and spirit.

3.3 General Negative Impacts

Screening for environmental impacts in every project municipality and First-cut package specific ESMPs has identified significant negative environmental impacts due to DMDP, including the following:

- *Increased air pollution* due to transportation of construction materials and their stockpiling during mobilization and construction phases for all three sub-projects.
- *Increased noise pollution and vibration* due to use of heavy construction equipment mainly during construction phase of all three project sub-components.
- *Surface and groundwater pollution* due to earthworks and stockpiling of construction materials during mobilization and construction of all project components.
- *Soil erosion and sedimentation* due to stockpiling of construction materials, earthworks and construction activities for all sub-projects.
- *Waste generation and stockpiling* during mobilization and construction phases of all sub-projects.
- *Traffic disruption and congestion* due to transportation of construction materials and equipment during mobilization and construction phases of all sub-projects.
- *Lack of/slow restoration of areas damaged by construction* after completion of construction works and during operation of all sub-projects.
- *Occupational health and safety risks* due to operation of machinery, equipment,vehicles and general construction activities in all sub-projects.
- *Destruction of cultural or archaeological resources* due to site preparation and construction works mainly of Surface water drainage and Roads projects.
- *Vegetation clearance* due to site preparation and construction activities of all sub-projects especially Surface water drainage and Roads projects.
- *Soil pollution/contamination* due to stockpiling of construction material and accidental spills of oils, chemicals during mobilization and construction phases of all sub-projects.
- *Change in scenic and aesthetic quality* of the environment of all sub-projects due to movement of equipment, machinery and vehicles as well as of workers and construction activities and after completion of works.
- *Increased risk of HIV/AIDS and STDs* due increased interaction of many project workers from within and outside the project areas and the local people for all sub-projects.
- Interruption of utility services due to traffic increase for transportation of construction materials and equipment as well as construction activities for all sub-projects.
- *Overburdened local authorities* due to additional responsibilities mainly during construction and operation phases of all sub-projects.
- *Increased risk of accidents* due to increased traffic movement of machines, equipment and vehicles as well as construction activities for all sub-projects.
- Interruption of local hydrology due to earthworks, establishment of concrete dams and lined canals and channels for all sub-projects.

The works to be carried out under the three components (local roads, surface water drainage and IUUS) will involve small and medium scale civil works for which the potential negative impacts are generally reversible, temporary and localized. Such impacts can usually be mitigated through (i) the application of good engineering and construction management practices, (ii) close supervision and monitoring of contractors' performance, and (iii) close consultation with, and monitoring by, local communities.

3.4 Land Acquisition and Resettlement Impacts

Land acquisition and resettlement impacts have been addressed in detail in the DMDP Resettlement Policy Framework (RPF – for sub-projects to be identified later during project implementation, or where detailed designs are being prepared) and Resettlement Action Plans (RAPs – already prepared for the selected projects with detailed designs during preparation of DMDP), as per the Land (Assessment of the Value of Land for Compensation) Regulations, 2001 and World Bank OP 4.12. The residual impacts of this project are expected to be negligible following implementation of the mitigation measures set out in the RAPs and RPF.

Except for some road subprojects where land acquisition is not necessary, the remaining subprojects of Components 1a, 1b and 2 will require land acquisition for realignment, upgrading and/or expansion of the existing roads, as well as for drainage to fulfill the technical requirements (traffic safety, slope of stream or roads, etc.).

General, resettlement associated with the DMDP could include the following impact types:

- Loss of land, including (i) cropland for food /cash crops of affected persons; (ii) residential land (associated with fixed assets of households and persons currently living within the subproject areas); (iii) public land (for installation of infrastructures such as water pipes, electric pipes, optic cables, etc.), and (iv) communal land such as for mosques, churches, etc.
- Loss of houses/buildings
- Loss of other assets and structures belonging to private household/persons, public utilities (eg. water pipe; drainage/sewerage system; etc.)
- Loss of livelihoods;
- Loss of formal and informal businesses (eg. warehouse; business of vendors, barber shop, nail and beauty shop, restaurant, etc.)
- Loss of access to communal resources and associated loss of livelihood;
- Loss of economic immoveable assets;
- Loss of community assets such as water wells, tress, mosque, church, etc.

In adition, there are likely to be cases of physical resettlement (relocation to new sites). Such relocation impacts include:

- Loss of houses and other structures;
- Decreased land in host/receiving communities;
- Disruption of public services due to construction of new homes and facilities in host/receiving communities;
- Separation of family members and/ or disruption to social networks; and
- Strain on education and health services in host community

Initially assessment by the DMDP design consultants, DLAs of Kinondoni, Temeke and Ilala showed that there would be around 4,000 households who will be affected by the DMDP through loss of land, houses and structures, business and production, trees and crops, etc. Of these, around 535 (13%) of households will require relocation. Summary of estimated scope of resettlement impacts of the proposed subprojects and cost estimates are shown in **Table 3.1.**

Table 3.1: Summary of Estimated Number of Affected Households and Compensation Costs

DLA and Component	Total affected properties	Fully affected households	Total compensation cost (USD)
Ilala	**701**	**41**	**$2,988,938**
Priority roads	68	10	$349,605
Stormwater drainage	275	6	$642,720
Community upgrading	358	25	$1,996,614
Kinondoni	**1,442**	**274**	**$10,050,624**
Priority roads	908	163	$5,810,578
Stormwater drainage	388	86	$2,838,150
Community upgrading	146	25	$1,401,896
Temeke	**1,835**	**220**	**$12,514,596**
Priority roads	560	75	$3,305,368
Stormwater drainage	378	15	$1,532,803
Community upgrading	897	130	$7,676,425
Grand Total	**3,978**	**535**	**$25,554,158**

Source: DMDP Draft Resettlement Action Plans (December 2014)

The overall compensation cost associated with the DMDP is around US$ 25.5 million. **Table 3.1** includes a summary of the costs of compensation by components. It is notable that upgrading in low income communities in Temeke is relatively more expensive than in the other two municipal councils put together. Overall cost of flood control and storm water drainage (US$5.0 million) is also relatively low. The details on these costs are provided in the RPF and preliminary RAPs.

3.5 Implementation of Resettlement Action Plan (RAP)

3.5.1 Information, dissemination and public participation

The RPF, once approved by the DLAs, will be posted for PAPs and their community in public places such as the PMO-RALG, DLA offices, and ward councils. The approved RPF will also be posted on WB information centres in Dar es Salaam and Washington, D.C. Both the RPF and RAP documents will also be broadcast widely in the mass media on local radio and TV, newspapers, posters and leaflets.

3.5.2 Establishment of resettlement committees and grievance committee

Each of the DLAs (Kinondoni, Temeke and Ilala) will establish Municipal Resettlement Committees and Municipal Grievance Committees soon after the Project Agreement is signed to support DLA to implement the RPF and RAPs and address other grievances related to the project.

3.5.3 Capacity building for resettlement staff

All staff involved in the implementation of RPF and RAP at PMO-RALG and DLAs and the resettlement and grievance committees will be provided with training on resettlement to ensure their effectiveness in the implementation of RPF and RAP. Training subjects will include but not be limited to the followings:

(i) Participatory methodologies in regards to data collection and community meetings;

(ii) Consultation and information dissemination methods;

(iii) Principles, policies, and entitlements of the RAPs;

(iv) Valuation of assets and properties

(v) Implementation steps, procedures, and schedule;

(vi) Grievance redress mechanism; and

(vii) Powers and obligations of individuals/agencies involved in the process of resettlement programs.

3.5.4 Pricing application and compensation of PAPs

Resettlement committees in all municipalities will be responsible for pricing application and preparing compensation and support contracts for each project affected household (PAH). These will be subject to verification by MLHHSD, PMO-RALG and DLAs of unit prices, quantity of affected assets, PAP entitlements, etc. before posting them at each ward/sub-ward for the people to review and comment if any. All compensation contracts must be checked and signed by the PAPs to indicate their agreement.

3.5.5 Compensation and allowance payment

Payment of compensation and allowance will be handled under the supervision of representatives of DLA, DMDP WG of the PMO-RALG. Guidance will be given by DMDP-WG of the PMO-RALG to aid local resettlement committees in making payments to PAPs.

3.5.6 Relocation of PAPs

DLAs will assist PAPs who opt for individual relocation to seek and purchase or otherwise arrange replacement land to the satisfaction of PAPs. Assistance from DLA is also required to assist PAPs during construction and movement to the new houses.

3.5.7 Income restoration and social support assistance

All activities relating to income restoration and social support assistance will be implemented soon after compensation and allowance is made to the PAPs and continue for approximately 12 months after the date of compensation so that the PAPs can sufficiently restore their livelihoods at least equal or better than the pre-subproject condition.

3.5.8 Addressing grievance and disputes resolution

Grievance and dispute resolution will be implemented by ward office and DLA, etc. following specific procedures and principle.

3.5.9 Monitoring and evaluation

Internal and external monitoring shall start soon after the RAP is approved and continue throughout the construction period. A post-resettlement monitoring and evaluation will be undertaken by the external monitoring resettlement specialist within 6-12 months after the completion of all resettlement activities.

3.5.10 Award of civil works contract

Although civil work contracts may be awarded, no physical or economic displacement can occur until after all PAPs have been compensated and/or relocated in accordance with the approved RAP for the specific subproject.

3.6 Overall Compensation Costs

3.7 Site Specific Impacts of Surface Water Drainage Project

In addition to the general and resettlement impacts above, the municipal-level ESIAs have also identified a number of site-specific negative impacts mainly associated with Surface Water Drainage Projects. Such impacts may only be partially addressed using approaches outlined above, and hence they need more comprehensive mitigation measures. The potential site-specific impacts are mainly associated with the construction and operation phases, including:

- *Air pollution* due to odours associated with handling of contaninated storm water during construction works of Surface water drainage sub-project
- *Risk of transmission of water borne and related disease* due to temporal storage of storm water for the Surface water drainage sub-project and in the case of poor management of drainage channels and canals, during the operation phase of all sub-projects
- *Distruction of downstream properties* due to uncontrolled storm water floods during operation of Surface water drainage sub-project due to poor maintenance
- *Risk of river bed/bank degradation* due to downstream storm water flooding associated with accidental failure of dams for the Surface water drainage sub-project especially during project operation
- *Management of polluted sludge/dredged material* during construction and operation due to contamination of drainage ponds and drainage channels
- *Community health risks and accidents* due to proximity to detention ponds

CHAPTER 4: ENVIRONMENTAL CODES OF PRACTICE

4.1 Introduction

In this chapter presents a summary of Environmental Codes of Practice (ECOPs), which were developed by integrating the mitigation measures proposed in the DLA-specific ESIAs. The ECOPs are presented separately for the General Impacts, Resettlement Impacts and drainage-specific measures for all three sub-projects, and includes the environmental monitoring plans.

4.2 Approach to Impact Mitigation

This section includes strategies applied to mitigate the potential negative impacts (via avoidance, minimization, rectification, and/or compensation). Specifically, mitigation measures are included for significant negative impacts during mobilization, construction and operation. Given that most significant impacts will occur during civil works and transportation of construction/waste materials, they can be mitigated through a set of general measures that are typically applied to construction projects such as to minimize noise, dust,traffic disruption, waste generation, etc. These general measures have been transformed into a set of standard environmental specification incorporated into the bidding and contract documents (BD/CD) during the detailed design stage of the project commonly referred to as Environmental Codes of Practice (ECOPs).

The scope and content of the ECOPs is limited to construction activities for small and medium-size contract works whose impacts are of limited extent, temporary and reversible, and can be managed readily with good construction practices**.**

The ECOPs describe typical actions to be taken by contractors and other stakeholders, supervised by the construction supervision consultants (CSC) during mobilization and construction, and monitored by the communities and the Independent Environmental Monitoring Consultant (IEMC). These ECOPs also cover the applicable provisions under Section 4.0 of Construction and Decommissioning of the IFC-World Bank Group Guidelines for Environmental, Health, and Safety (EHS). Some of the applicable Tanzanian regulations (standards) that have to be strictly adhered to are:

- Air Quality Standards Regulations, 2007
- Soil Quality Standards Regulations, 2007
- Solid Waste Management Regulations, 2009
- Water Quality Standards Regulations, 2007

Where impacts require site-specific mitigation measures that are not adequately covered in the generic ECOPs, they must be addressed separately in the project's ESMP. For example, the above ECOPs do not fully cover impacts from detention ponds associated with the surface water drainage components. Also, social impacts caused by involuntary resettlement are addressed separately under the Resettlement Action Plan (RAP) for selected sub-projects and the DMDP Resettlement Policy Framework (RPF) in separate safeguards instruments.

4.3 Environmental and Social Management Framework (ESMF)

Environmental and social management planning involves undertaking mitigation or enhancement activities during the design, implementation and operation phases of a project. In this particular case, emphasis is particularly on mitigation, whereby activities are expected to be designed such that they eliminate, offset or reduce adverse impacts to acceptable levels. An ESMF therefore describes the mitigation management required to ensure proper implementation of agreed mitigation measures and verification of predicted environmental impacts.

Contractors should have in place a project-specific ESMP drawn out of ESIA that meets or exceeds the Environmental Codes of Practice outlined below. Performance of the ESMP will be monitored by the DLAs, PMO-RALG, and the World Bank as outlined in Section 4.5. In the present context, the impact mitigation measures are presented separately for General, site – specific Environmental, Social and Resettlement impacts as presented in 4.3.1 to 4.3.3 below.

4.3.1 ECOPs for General Impacts for Roads, Drainage, and IUUS Subprojects

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
Increased air pollution due to transportation of construction materials and stockpiling	• Avoid excavation, handling and transport of erodible materials under windy conditions. • Institute traffic management and safety programme including proper signage and training of heavy machine/vehicle operators and drivers, enforcement of speed limits, maximum loading restrictions and compliance with Tanzanian transportation laws and standards especially when crossing inhabited or sensitive areas. • Vehicles carrying fine construction materials must be covered during transportation. • Wet working areas without causing erosion or runoff. • Ensure regular cleaning of access roads and unpaved areas to avoid dust pollution due to wind or movement of vehicles and equipment.	During Mobilization and Construction	Contractor	Under the Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Increased noise pollution and vibrations	• Adopt and maintain moderate vehicle speed and traffic when crossing inhabited or sensitive areas. • Noise emissions shall comply with applicable national laws, standards and regulations. • Maintain construction equipment in good running condition, enforce vehicle/road restrictions and carry out	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	routine inspection of construction equipment • Operate noise generating equipment for short periods or during the times they will cause less community disturbance i.e. daylight. • Stationary noise generating equipment shall be placed as far away as possible from sensitive receptors and/or shall be housed inside a shed or covered to reduce the propagation of noise •				
Surface and groundwater pollution	• Ensure appropriate handling of fuels, oils, cement and other materials to avoid spills including storing them in impermeable, bunded containers and undertaking fuelling of machinery and vehicles in concrete floors previously identified within the site. • Ensure that all construction activities that could endanger water quality is avoided or controlled, through site planning and design of construction activities and preparation of site procedural protocols. • No discharge of muddy water should be permitted from the work areas into the adjacent water courses and/or bodies. • Ensure that waste water containing pollutants like cement, concrete, lime, chemicals and fuels are discharged into temporal tank for subsequent removal from site. • Contaminated water should in no way be discharged into municipal sewer systems. • Avoid deliberate disposal of wastes (even temporarily), on	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	the banks and beds of water drainage lines. • Maintenance of equipment and vehicles should be done on concrete ground/floor to avoid soil and surface and underground water pollution. • Establish awareness raising programme for city dwellers to avoid disposing waste and contaminated effluents into the storm water drainage systems. • Undertake appropriate and regular cleaning and maintenance of ditches and channels to avoid water stagnation. •				
Soil erosion and sedimentation	• Stockpiling of soil overburden should be confined to areas previously disturbed or ploughed and clearly marked and accessible by vehicles. • Plant vegetation with properties to prevent soil erosion, like indigenous creepers and herbs where necessary. • Material stockpiles must be appropriately protected against wind and water erosion	During Mobilization and Construction	Contractor	Under Contact TOR	Construction Supervision Consultant and Independent Supervision Consultant
Traffic disruption and congestion	• Institute traffic management and safety programme including proper signage and training of heavy machine/vehicle operators and drivers, enforcement of speed limits, maximum loading restrictions and compliance with Tanzanian transportation laws and standards especially when crossing inhabited or sensitive areas. • Prohibit construction of new roads unless it is absolutely	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	necessary. • Access to the construction site and work areas should be confined to existing roads. • Construction of physical barrier such as road humps should be undertaken where necessary to control speed • Make arrangements for traffic diversions via establishment of Traffic Management Plan.				
Waste generation and stockpiling	• Small volumes of organic waste that can easily decompose must be disposed-off in environmental friendly manner such as the use of pits. • Large volumes of wastes produced, including construction and demolition debris, must be collected by licensed private/municipal service providers for appropriate disposal e.g. in land-fills. • Office wasteshould be sorted and storage in four different types of waste bins i.e. for paper materials; organic materials; glass wastes; and plastics; and separately disposed. Construction sites, temporary warehouses and yards should be cleaned to prevent indiscriminate fires, burial or abandonment of waste. • Burning, burying and/or dumping of wastes by the contractor is prohibited	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Lack of/slow restoration of areas damaged by	• Restore cleared areas such as exhausted borrow pits, disposal areas, workers' camps immediately after completion of construction works followed by appropriate	During construction	Contractor	Under Contract TOR	Construction Supervision Consultant and

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
construction	landscaping, adequate drainage and re-vegetation of open areas using indigenous species. • Spoil heaps and excavated slopes shall be re-profiled to stable batters, and grassed to prevent erosion. • Plant trees on exposed land and on slopes to prevent or reduce land slippage or collapse and keep slopes stable. • Remove any soil contaminated with chemicals or hazardous substances and dispose them appropriately.				Independent Supervision Consultant
Occupational and community health and safety risks	• Comply with Tanzanian and World Bank and other international standards and regulations on health and safety requirements • Develop and implement in-house manual/guidelines on health and safety • Keep detailed incident reports in the case of accidents (sample form included in Annex 2) • Implement community sensitization programs on the risk for public health and safety caused byproject implementation. • Attach warning signs, barriers, and other precautionary signs on all areas of potential risk. • Prepare and implement action plan to cope with risks and emergencies including having emergency first aid equipment available at construction sites. • Train workers in occupational health and safety regulations. • Provide separate passageways for pedestrians and vehicles within and outside construction areas.	During Mobilization and Construction	Contrator	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	• Ensure that workers wear/use appropriate personal protective equipment (PPE), such as safety glasses, face shields, hard hats, safety shoes, noise protection ear muffs etc. • When working in confined spaces, such as deep excavation (trenches) use dewatering, adequate side-wall supports (shoring) and slope gradients that minimize the risks of collapse, entrapment or drowning.				
Destruction of historical, archaeological or cultural resources	• Adhere to the UNESCO 2003 Convention for Safeguarding Living Heritage; International Council of Museum (ICOM); the International Centre for the Preservation and Restoration of Cultural Property (ICCROM) and the International Network on Cultural Policy (INCP). • Adhere to Tanzania's Cultural Heritage Policy 2008 and Cultural Policy 1997. • In case any historical/cultural remains or artifacts are incidentally found, the workers shall be educated to stop works and notify Antiquities Department or Archaeologist and work will only resume when the conservation specialist (Archaeologist) has completed the work. • Should graveyards and any sacred places be found in the	During Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	project area, the contractor shall take precaution to avoid disturbing or destroying them and the process for their relocation shall be in accordance with Graveyard Removal Act (No. 9 of 1969) and local customs.				
Vegetation clearance	• Prepare a clearance, re-vegetation and restoration management plan for prior approval by the Construction Supervision Engineer and ensure strict complience. • Prohibit cutting of any tree unless explicitly authorized in above-referred plan. • When needed, erect temporary protective fencing to effectively protect all trees before commencement of any works within the site.. • Confine overburden material to specificall designated sites away from sensitive locations.	During Construction	Contactor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Soil pollution/contamination	• Ensure that soil overburden removed before construction is stored and immediately re-used for replacement at the closure of opened trenches. • Undertake appropriate cleaning maintenance of ditches and channels. • Ensure immediate replacement of the soils removed during the opening of trenches • Provide training of personnel in proper storage, handling and clean-up of contaminating materials into the environment.	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Change in scenic	• Minimize soil and landscape disturbance/change by re-	During	Contractor	Under	Construction

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
and aesthetic quality	planting vegetation with indigenous species • Confine overburden material to specificall designated sites away from sensitive locations. • Ensure that soil overburden removed before construction is stored and immediately re-used for replacement at the end of construction.	Mobilization and Construction		Contract TOR	Supervision Consultant and Independent Supervision Consultant
Increased risk of HIV/AIDS and STDs	• Workers must be educated about STDs, HIV and AIDS. • Disseminate information on HIV/AIDS and STDs through education promotion materials such as leaflets, placards, shirts, arts, etc. • Provide Voluntary Counselling and Testing (VCT) centres for HIV/AIDs at work place, • Enforce HIV/AIDS law and regulations	During Mobilization and Construction	District Health Authorities; PMO-RALG/Contractor/DLAs; NGOs	PMO-RALG/District Authorities	Construction Supervision Consultant and Independent Supervision Consultant in collaboration with Resident Engineer
Destruction/desruption of utility services	• Undertake prior consultation and contingency planning with utility providers (TANESCO, DAWASCO and TTCL) and local authorities about the consequences of particular service failures and establish appropriate construction schedules and alternative service provision. Install lighting at night (where necessary), to ensure safe traffic movement.	During Mobilization and Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Increased burden on local authorities	• Maintain open communication with the local government and concerned communities on agreed schedules of construction activities nearby sensitive places or at sensitive times.	During Construction	Contractor	Under Contract TOR	Construction Supervision Consultant and Independent

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	• Copies of the EMPs and of other relevant environmental safeguard documents in Kiswahili be available to local communities and workers at the site. • Maintain early consultations on any loss of amenities such as playground space, car parking with those affected, providing opportunities for investigation and implementation of alternatives. • Disseminate project information to affected parties through community meetings before construction starts; • Monitor community concerns and information requirements as the project progresses; • Respond to telephone inquiries and written correspondence in a timely and accurate manner.				Supervision Consultant
Increased risks of accidents	• Impose speed limits at work sites and place appropriate traffic signs along access roads. • Comply with all applicable laws and regulations regarding road transport and safety. • Prohibit construction of new roads unless it is absolutely necessary. • Access to the construction site and work areas should as much as possible be confined to existing roads. • Construction of physical barrier such as road humps should be undertaken where necessary to control speed • Make arrangements for traffic diversions via establishment of Traffic Management Plan.	Contractor	During Mobilization and Construction	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/ Source of Funds	Monitoring
	• Provide hard hats and industrial boots and enforce their proper use. • Develop, operationalise (including carrying out regular rehearsals) of contingency plans for dealing with incidents and hazards. • Train and enforce occupational health and safety practices (including PPE) to workers • Provide First Aid and evacuation facilities • Abide to national and international quality standards				
Disruption of local hydrology	• Ensure the drainage designs utilize as much as possible the existing channels and drains • Where possible, the designs shall leave some unpaved space alongside the road for water to seep into the ground • The design shall provide controlled and effective storm water dispersion by installation of appropriate drainage structures.	Contractor	During Design and Construction	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Excavation and deplition of construction materials	• Consult Local Government Authorities on authorised borrow pits or quarry sites for exploitation of construction materials. • Under no circumstances would materials like sand be excavated and exploited within the boundaries of the City of Dar es Salaam • All mined construction minerals (gravel, stone, sand etc.) must be procured from authorized sites with licenses per the Mining Act (2010)	Contractor	During mobilization and construction	Under Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant

4.3.2 Additional ECOPs for site-specific impacts for Drainage Subprojects

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/Source of Funds	Monitoring
Air pollution due to odours associated with handling contaminated storm water	• Deliberate disposal of wastes is forbidden (even temporarily), on the banks and beds of water lines as well as in the areas of high infiltration • Contaminated water should in no way be discharged into municipal sewer system. • The water containing pollutants or contaminants must be discharged into a temporal tank for later removal from the site • Prevent the accumulation of wastes and sediments in natural drainage lines • Ensure regular inspection of the storm water drainage system followed by immediate cleaning and clearing of spotted wastes and other contaminants.	During Construction	Contractor	Under the Contract TOR	Construction Supervision Consultant and Independent Supervision Consultant
Risk of transmission of water borne and related diseasedue to temporal storage of storm water	• Inform workers about the risks of flooding during major rainstorms • Provide sanitary and safety facilities at work places. • Implement community sensitization programs on the risk for public health caused by river damming and the risks associated with storm water ponding. • Attach of warning signs, barriers, and other	During Operation	District Health Authorities; PMO-RALG /DLAs; NGOs	PMO-RALG/District Authorities	

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/Source of Funds	Monitoring
	precautions on all areas of potential risk. • Natural flow regimes must be maintained and whenever necessary, alternative and temporary drainage systems must be established				
Destruction of downstrem properties and utilities *due breaching of storm water storage ponds*	• Ensure clearing of all components of the storm water drainage system leading to storm water ponds • Ensure frequent inspection of the storm water ponds during and after major rain storms. • Establish mechanisms for recording and responding to public reports. • Minimize sedimentation of ponds by ensuring regular dredging to remove sediments before the rainy season	During operation	PMO-RALG /DLAs; NGOs	PMO-RALG/District Authorities	
River bed/bank degradation due to downstream flooding associated with accidental pond failure	• Provide storm water dispersion by installation of appropriate drainage structures. • Ensure well designed discharge points to avoid flooding downstream • Ensure frequent inspection of the storm water ponds during and after major rain storms. • Establish mechanisms for recording and responding to public reports. • Minimize sedimentation of ponds and ensure regular dredging to remove sediments before the rainy season	During operation	PMO-RALG /DLAs; NGOs	PMO-RALG/District Authorities	
Management of polluted	• Ensure that all construction activities that could endanger water quality are avoided or	During Construction	Contractor, PMO- RALG	Under Contract TOR/ PMO-	

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/Source of Funds	Monitoring
sludge/dredged material	controlled, through appropriate site planning and design of construction activities and preparation of site procedural protocols. • Subsequently, all contaminated sludges and dredge material shall be collected and transported by licensed private/municipal service providers for appropriate disposal. • Ensure that clearing and disposal of sludge and dredge material is done immediately after dredging to avoid stockpiles • Undertake regular inspection of detention ponds for stockpiling of wastes.	and Operation	/DLAs;	RALG/DLAs	

4.3.3 ECOPs for resettlement impacts for DMDP

Impact	Mitigation Measure	Time Frame	Responsible Institution	Relative Cost/Source of Funds	Monitoring
Loss of land, properties and resettlement	• All PAPs shall be paid appropriate compensation according to the laws and regulations of Tanzania and World Bank Safeguard requirements, consistent with the DMDP Resettlement Policy Framework (RPF) • Establish and operationalize dispute resolution committees to be responsible for resolving	During Mobilization before Construction begins	PMO-RALG /DLAs	PMO-RALG/DLAs	Supervision Consultant

	conflicts and grievances related to land and properties compensation or resettlement • All conflicts or grievances related to land and properties compensation must be reported to the dispute resolution committee for resolution. • Establish programme to educate the project affected people (PAPs) about legal resolution mechanism.				

4.4 Environmental and Social Monitoring Plan (ESMoP)

Monitoring is essential for any ESIA study. In Tanzania, provision for monitoring is a legal obligation for developers. Monitoring helps to: (i) check compliance with regulatory requirements (including adherence to environmental standards); (ii) understanding the degree of implementation of ESMoP and the effectiveness of prescribed mitigation measures; and (iii) confirm the occurance and magnitude of predicted impacts. Monitoring is thus, a general term referring to the systematic collection of data through a series of repetitive measurements over a long period to provide information on characteristics and functioning of environmental and social variables in space and time.

Box 4.1 summarizes the commonest types of monitoring. In this particular case, for each impact, parameters for monitoring have been selected as well as frequency for their regular checks, and monitoring indicators (and parameters) have been suggested. The monitoring progamme also indicates responsible institutions to carry out the monitoring and an estimate of associated cost. The consolidated environmental, social and resettlement impact mitigation monitoring framework is presented as **Table 4.1.**

The principle stages of a development project life cycle to be checked and monitored for ESMP are during planning, designing, implementation, operation and decommissioning. Carrying out an ESIA acts as a check during design and an ESMP includes monitoring activities to be done during the implementation (construction) stage of a project.

Box 4.1: Common Types of Monitoring

- ***Baseline monitoring****:* The measurement of environmental parameters during a representative pre-project period in an attempt to determine the nature and ranges of natural variation and where possible, to establish the process of change.
- **Impact/effect monitoring***:* Involves the measurement of parameters (performance indicators) during project construction and implementation in order to detect and quantify environmental change which may have occurred as a result of the project. The importance of feedback and continuity in the EIA process cannot be overemphasized. Effect monitoring provides experience for future projects with a consequent improvement in accuracy and efficient use of resources, which can be better targeted, through a more appropriate selection of methods and techniques.
- **Compliance monitoring**: Not direct at environmental parameters, but takes the form of periodic sampling and/or continuous measurements of levels of discharge, noise or similar emissions or introduction to ensure that specific conditions are observed and standards met. Complience monitoring does not require baseline monitoring to which impacts can be compared or reference or control sites.
- ***Mitigation monitoring****:* aims to determine the suitability and effectiveness of the mitigation programmes, designed to diminish compensate for adverse effects of projects.

During mobilisation and construction, the DLA Project Implementation Unit (PIU) is responsible for the day to day monitoring of the implementation of the project ESMPs. The PIU will use an ESMoP developed **(Box 4.2)** based on the approved ESMP. A typical example of an ESMoP is included as **Annex 2.** The PIU has to submit a completed monitoring report to PMO-RALG on a quarterly basis (i.e. every 3 months). An example of an ESMoP implementation report is **Annex 3.**

Box 4.2: ESMoP Definitions

1. Monitoring parameter: The monitoring parameter is basically a physical, social or econonic variable derived from the potential impacts. The parameter is the object/area/persons that were identified to be potentially impacted during the different phases of the projects.
2. Monitoring frequency: This refers to the number of times the parameter is to be measured during specified period in which the mitigation measure is to be implemented. The frequency in which each parameter is monitored varies depending on the nature of the parameter.
3. Target level/standard: This refers to environmental or social condition that the proposed mitigation measure aims to achieve, thus restore or enhance the situation. It could also include legal standards that have to be observed.
4. Progress/status: This is completed by the IPS either through reports submitted by the contractor implementing the ESMP, or by observations made during site visits to the construction area(s). The status could be "completed", "on track", "not on track- review ESMP" or "to be implemented (date/month)". This should be accompanied by comments for followup.

Each PIU will include one environmental specialist and one social/resettlement specialist, who will be responsible for conducting compliance monitoring to ensure that the ESMP and RAPs are implemented as per **Box 4.1.** If the monitoring report is submitted quarterly by the PIU and there is close coordination between them, then the environmental and social specialists will mainly conduct spot-check visits to complete a compliance monitoring report. The environmental and social specialists will conduct spot-check visits at critical points in the construction/implementation programme when key actions and construction impacts can be inspected. Examples of project elements to be monitored include:

- Implementation and effectiveness of erosion and sedimentation control measures (e.g., prompt re-grassing of disturbed areas);
- Water management issues (e.g., water logging, flooding, and drainage issues);
- Waste disposal issues (e.g., disposal of demolition debris, spoil, used oil, old tires, and scrap metal, and the management of liquid and solid wastes);
- Management and reclamation of borrow pits and quarries or other sources or natural resources;

- Social impacts (e.g., related to compensation issues, resource use conflicts, communicable diseases);
- Public health and safety (e.g., accidents and accident risks during construction);
- Noise and dust problems during construction works (e.g. close to schools, hospitals and other sensitive human activities); and
- Occupational health and safety (e.g., the safe handling and storage of hazardous materials and safe operating procedures).
- Vulnerability of the project to natural hazards e.g flooding, landslides, earthquakes, tsunamis, strong hurricane like winds etc

The environmental and social specialists will subsequently submit the monitoring report to PMO-RALG, who will also submit to the World Bank. The same document can be used to report to NEMC when required.

Table 4.1: Consolidated Framework for Environmental, Social Impact Mitigation Measures for DMDP

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
I	***Noise pollution and vibration***				
	Indicator	Noise level (dBA)	Noise level (dBA)	NA	URT<110 World Bank Environmental, Health and Safety Guidelines
	Frequency	Once before the construction starts	Monthly	NA	
	Means of verification	Reports & community complains	Reports & community complains		
	Responsibility	*Contractor/ Env. Supervisor*	*Contractor/PMO-RALG/MC/Supervision Consultant*	*PMO-RALG/MC Env. Supervisor*	
II	***Air pollution***				
	Indicator	Dust (µg/m^3)	Dust (µg/m^3)	NA	URT <0.01 World Bank Environmental, Health and Safety Guidelines

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Frequency	Once before construction starts	Monthly	NA	
	Means of verification	Report & complaints	Reports & complaints	"	
	Responsibility	*Contractor/ Env. Supervisor*	*Contractor/PMO-RALG/ MC/Supervision Consultant*	"	
III	***Surface and ground water pollution***				
	Indicator	Turbidity (NTU) (mg/l), COD (mg/l), BOD (mg/l), pH, DO (mg/l)	Turbidity (NTU) (mg/l), COD (mg/l), BOD (mg/l), pH, DO (mg/l)	Turbidity (NTU) (mg/l), COD (mg/l), BOD (mg/l), pH, DO (mg/l)	TZS 789:2003 World Bank Environmental, Health and Safety Guidelines
	Frequency	1 location/day	Once per 3 months	Quarterly	
	Means of verification	Reports	Reports	Reports	
	Responsibility	*Contractor/ Env. Supervisor*	*Contractor/PMO-RALG/MC/Supervision Consultant*	*DMDP/PMO-RALG/MC*	
V	***Loss of land,properties and involuntary resettlement***				
	Indicator	Number of PAPs compensated or resettled without complants	NA	NA	All PAPs compensated according to the Resettlement Action Plan
	Frequency	Once before the construction starts	NA	NA	
	Means of verification	Field Survey, Valuation Report, RAP Report&complaints	NA	NA	
	Responsibility	*PMO-RALG/ MC/ consultant*	*NA*	*NA*	
VI	***Soil erosion and sedimentation***				

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Indicator	NA	Soil erosion along the road	NA	
	Frequency		Once in 3 months		
	Means of verification		Report and road inspection		
	Responsibility		*Contractor/ PMO-RALG/MC/ Supervision Consultant*		
VII	***Occupational health and safety risks***				
	Indicator	NA	Number of reported accidents	NA	
	Frequency		Once per month		
	Means of verification		Incident reports		
	Responsibility		*Contractor/ PMORALG/MC / Supervision Consultant*		
	Location				
VIII	***Waste generation and stockpiling***				
	Indicator	NA	Presence/absence of stockpiles of wastes	NA	At least 50 local people are employed
	Frequency		Monthly		
	Means of verification		Reports & inspection		
	Responsibility		*Contractor PMO-RALG /MC/Supervision Consultant*		
IX	***Disturbance and/or Destruction of cultural or archaeological resources***				

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Indicator	NA	Presence/absence of archaeological, cultural artifacts& sites	NA	
	Frequency		Monthly		
	Means of verification		Reports &complaints		
	Responsibility		*Contractor/ PMO-RALG/ MC/Supervision Consultant*		
X	***Disruption of utility servies***				
	Indicator	NA	Presence/absence of non-functional utilities&Complaints	NA	
	Frequency		Monthly		
	Means of verification		Reports, records and complaints		
	Responsibility		*Contractor/ PMO-RALG/ MC/ Envir. Supervisor*		
XI	***Vegetation clearance***				
	Indicator	NA	Presence/absence of vegetation	NA	
	Frequency		Periodic		
	Means of verification		Reports & inspection		
	Responsibility		*Contractor/PMO-RALG/ MC/Envir. Supervisor*		
XII	***Interruption of natural hydrology***				
	Indicator	NA	NA	Evidence of occurrence of clogged systems	

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Frequency			Every after a heavy storm	
	Means of verification			Reports, records & Inspection	
	Responsibility			*PMO-RALG/MC/Supervision Consultant*	
XIII	***Employment opportunities***				
	Indicator		Number of area resident people employed		
	Frequency		Monthly		
	Means of verification		Reports, Surveys		
	Responsibility		*Contractor/PMO-RALG/ MC/Envir. Supervisor*		
XIV	**Soil pollution /contamination**				
	Indicator		Incidents of indiscriminate spills/discharge of chemicals or contaminated water		
	Frequency		Monthly without notice		
	Means of verification		Reports and Inspection		
	Responsibility		*Environmental Consultant in collaboration with Resident Engineer As*		
XV	**Change in scenic and aesthetic quality**				

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Indicator	Changes in viewshed and landscape	Change in viewshed and landscape		
	Frequency	Once after completion of mobilization	Once every three months		
	Means of verification	Inspection	Inspection		
	Responsibility	*Environmental Consultant in collaboration with Resident Engineer As*	*Environmental Consultant in collaboration with Resident Engineer As*		
XVI	**Risks of HIV/AIDS and STDs**				
	Indicator	Knowledge and awareness on HIV/AIDS and STDs among communities & workers	Knowledge and awareness on HIV/AIDS and STDs among communities & workers		
	Frequency	Monthly	Montly		
	Means of verification	Office & medical reports, survey and assessment of status within project area	Office & medical reports, survey and assessment of status within project area		
	Responsibility	*Contractor/ PMO-RALG/LGA*	*Contractor/Supervision Consultant/PMO-RALG/LGA*		
XVII	**Risk of accidents**				
	Indicator	Number of reported accidents	Number of reported accidents		
	Frequency	Monthly	Monthly		
	Means of verification	Police, medical or office reports	Police, medical or office reports		

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Responsibility	*Contractor*	*Contractor/Supervision Consultant*		
XVIII	**Overburdened Local Authorities**				
	Indicator		Timely delivery of outputs	Timely delivery of outputs	
	Frequency		Every after three months (quarterly)	Every after three months (quarterly)	
	Means of verification		Office reports, urveys, public complaints	Office reports, urveys, public complaints	
	Responsibility		*Contractor*	*PMO-RALG/DLAs/ Supervision Consultant*	
XIX	**Odours associated with handling contaminated storm water**				
	Indicator		Presence/absence of offending odours	Presence/absence of offending odours	
	Frequency		Monthly	Monthly	
	Means of verification		Office report, surveys, public complaints	Office report, surveys, public complaints	
	Responsibility		*Contractor*	*PMO-RALG/DLAs/ Supervision Consultant*	
XX	**Transmission of water borne/related diseases**				
	Indicator			Incidences of water borne/related diseases	

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Frequency			Every after three months	
	Means of verification			Medical reports, survey and assessment of status within project area	
	Responsibility			*PMO-RALG/ DLAs/ Supervision Consultant*	
XXI	**Desruction of downstream properties and utilities**				
	Indicator			Incidents of property and utility destruction	
	Frequency			Every after major rain storms	
	Means of verification			Field inspection, office reports	
	Responsibility			*PMO-RALG/ DLAs/Supervision Consultant*	
XXII	**Downstream river bed/bank degradation**				
	Indicator			Incidents of river bed/bank degradation	
	Frequency			Every after major rain storms	
	Means of verification			Field inspection, office reports	

No.	Monitoring items	Mobilization	Construction	Operation	Standards (where applicable)
	Responsibility			*PMO-RALG/ DLAs/ Supervision Consultant*	

4.5 Monitoring for RAP Implementation

RAP implementation of DMDP activities will be participatory and has to be monitored and evaluated. Within the Project Implementation Unit (PIU) of each DLA, the social/resettlement specialist will coordinate a RAP Team or Committee **(See Box 4.3).** The team/committee will be responsible for coordinating RAP activities, including the performance of the RAP implementation in terms of :

- Disbursement of the compensation payments,
- Progress of resettlement and rehabilitation activities including construction of structures and houses and assistance during rebuilding
- Public consultation process/ Stakeholder involvement
- Employment and/or livelihood restoration activities.
- Types of grievance issues and effectiveness of the grievance redress mechanism to resolve them.
- Services to community/ improved livelihoods

Box 4.3: Membership of the RAP Team/Committee	
Member	***Responsibilities***
PIU Social/Resettlement specialist	• *Overall responsible for the development of the RAP and RAP implementation*
DLA Community Development Officer	• *To assist in identifying affected persons, properties and areas* • *To ensure public participation/consultation is carried out and incorporated into RAP* • *Ensure eligibility criteria are non-discriminatory against vulnerable groups*
PIU Environmental specialist	• *To ensure that RAP is implementation according to ESMP and compliant with National EM Rules, Regulations and Guidelines*
Land officer	• *To identify and document affected persons, properties and areas* • *To review project design and plan to avoid or minimize resettlement and compensation*

	• *To ensure that Tanzanian laws and World Bank standards are upheld* • *To submit the RAP for review and approval for implementation* • *To ensure RAP is implemented before project commencement*
Surveyor	• *To identify area for relocation sites and to survey plots to delineate areas.*
Land Valuer	• *To conduct a detailed survey of land and assets affected* • *To prepare valuation report of costs of land and assets affected*
WEO/MEO/Mtaa Chairperson	• *To assist in identifying affected persons, properties and areas*
PAP representatives	• *Gender balanced representation of the PAPs to ensure that their views and concerns are considered in RAP and promote fairness, equity and transparency*

Box 4.4 provides a typical example of indicators used when monitoring RAP implementation.

Box 4.4 : Example of Indicators used when Mmonitoring RAP Implementation
• *Number of meetings held with the PAPs;* • *Number of complaints lodged, complaints being addressed, and how* • *Number of complaints resolved;* • *Number of compensation payments made, and those pending;* • *number of houses/structures constructed, and those pending;* • *Number of PAPs relocated to their new houses/structures, and those unrelocated;* • *Number of vulnerable people assisted.*

In the case of displacement, the RAP Team/Committee is also responsible for prescribing the boundaries of the relocation area and assessing the environmental impacts of the proposed resettlement and measures to mitigate and manage these impacts. The PIU social/resettlement specialist will also be responsible for monitoring the implementation of the RAP and to complete the RAP monitoring report.

4.6 Project Design Review

The RAP team and the respective project designer (e.g. engineer) will visit the project site to identify possible modifications for minimizing the impacts of resettlement and compensation while the Valuer undertakes spot valuation to determine costs of compensation. The RAP Team submits the agreed modifications to the project design and associated costs to the PIU. Upon receiving these, the PIU may revise the designs. For an

example of outcome of project design review, **see Box 4.5.**

Box 4.5: Outcome of Project Design Review

i. *Activities that will cause resettlement as defined are identified (e.g. re-alignment of an existing road during rehabilitation, changing the landuse of a plot used for urban agriculture as an open space).*
ii. *Rough estimation of costs determined*
iii. *Proposed ways to avoid or minimize displacement and compensation (e.g. keeping existing alignment design and landuse plans).*
iv. *Proposed ways to avoid removal or minimize damage to existing infrastructure, social services, cultural properties and historic/archaeological sites*

NB: Opportunities for the design to be revised should be finalised before proceeding to prepare a RAP.

4.7 Redress and Grievance Mechanisms

The DMDP project grievance mechanisms must be made available to parties who have grievances or complaints. These grievances could relate to the valuation of assets, amount of compensation paid, level of consultation, non-fulfilment of contracts, and timing of compensation, amongst others. Complaints and grievances may also concern issues related to construction safety and nuisances caused by construction. Grievances will be handled through negotiation aimed at achieving consensus.

In order to address grievances, a Grievance Committee shall be established. This will include representatives of the RAP Team/Committee, the Distric Lands Department, the ward Council, as well as of the PAPs. In addition, it will include an independent valuer (if the grievance is related to compensation amounts). Grievance process will be administered as far as possible at the District and Ward level.

4.7.1 Grievance mechanism procedures

In the initial stages of DMDP implementation, communities will be informed about how to register grievances or complaints, including specific concerns about compensation and relocation. Affected communities will also be informed about the dispute resolution process, specifically about how the dispute will be resolved in an impartial and timely manner. Attempts shall be made to settle grievances amicably.

The grievance redress mechanism is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to the national level government authorities or national level courts for resolution. Compensation and resettlement plans (contracts) will be binding under statute. The Grievance Committee shall maintain records where grievances

and complaints, including minutes of discussions, recommendations and resolutions made, will be recorded.

The steps for handling grievances should be as follows.

(i) The affected person should file his grievance in writing, to the ward leader. The grievance note should be signed and dated by the aggrieved person. Where the affected person is unable to write, he should obtain assistance to write the note and emboss the letter with his/her thumbprint.

(ii) The ward leader should notify the Grievance Committee and respond within 14 days during which any meetings and discussions to be held with the aggrieved person should be conducted. If the grievance relates to valuation of assets, an independent valuer should be requested to revalue the assets, and this may necessitate a longer period of time. In this case, the aggrieved person must be notified by the Ward Leader that his/her complaint is being considered.

(iii) If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time, s/he may lodge his/her grievance to the District Administration.

(iv) The Grievance Committee will then attempt to resolve the problem (through dialogue and negotiation) within 14 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint can be taken through the formal court process, ie to the the Ward Tribunal where relevant, District Tribunal and the High Court (Land Division) at the National level.

The complainants will be exempted from all administrative and legal fees that might be incurred in the resolution of their grievances and complaints. The Grievance Committee will prepare a report containing summary of all grievances and will make this available to PMO-RALG on a quarterly basis.

4.7.2 Grievance and complaint procedures under the RAP

One of the major challenges in implementing RAP is dissatisfaction among PAPs regarding compensation amounts. Taking into account the complexity of resolving disputes and grievances, PAPs at the project area were informed about various grievance redress procedures and of their right to appeal if not satisfied.

During surveys and inventories of PAPs and their properties and during consultation processes, concerned individuals or entities became fully aware of the extent of damages to properties, crops and commercial activities that the Project would entail. Common concerns include:

- Amount, levels and time in which compensation is paid to PAPs;
- Seizure of assets without compensation;
- Handling and treatment of vulnerable PAPs and those without recognized ownership rights (e.g., tenants and squatters).

The mechanism for grievance management and redressed mechanism will be "affordable and accessible," and third parties independent of the implementers should be available at the appropriate point at the DLA level in the process. The grievance procedure will be simple, administered in the first instance at the local level to facilitate access, flexibility and open to various proofs taking into account the need for speedy, just and fair resolution of their grievances. Such grievance mechanism will take into account the availability of community and traditional dispute settlement mechanisms prior to resorting to judicial solutions.

Thus, the RAP and RPF provide a simplified grievance redress mechanism that will enable timely settlement of compensation-related grievances to the PAPs. The grievance procedures will be anchored and administered at the local level to facilitate access, flexibility and openness to all PAPs. The grievance redress procedure ensures consultations with the Municipal Councils and Dar es Salaam City Council and other key stakeholders and provides for record keeping to determine the validity of claims, and to ensure that solutions are taken in the most transparent and cost effective ways for all PAPs.

Compensation and resettlement plans (contracts) will be binding under statute. The Grievance Committee shall maintain records where grievances and complaints, including minutes of discussions, recommendations and resolutions made, will be recorded.

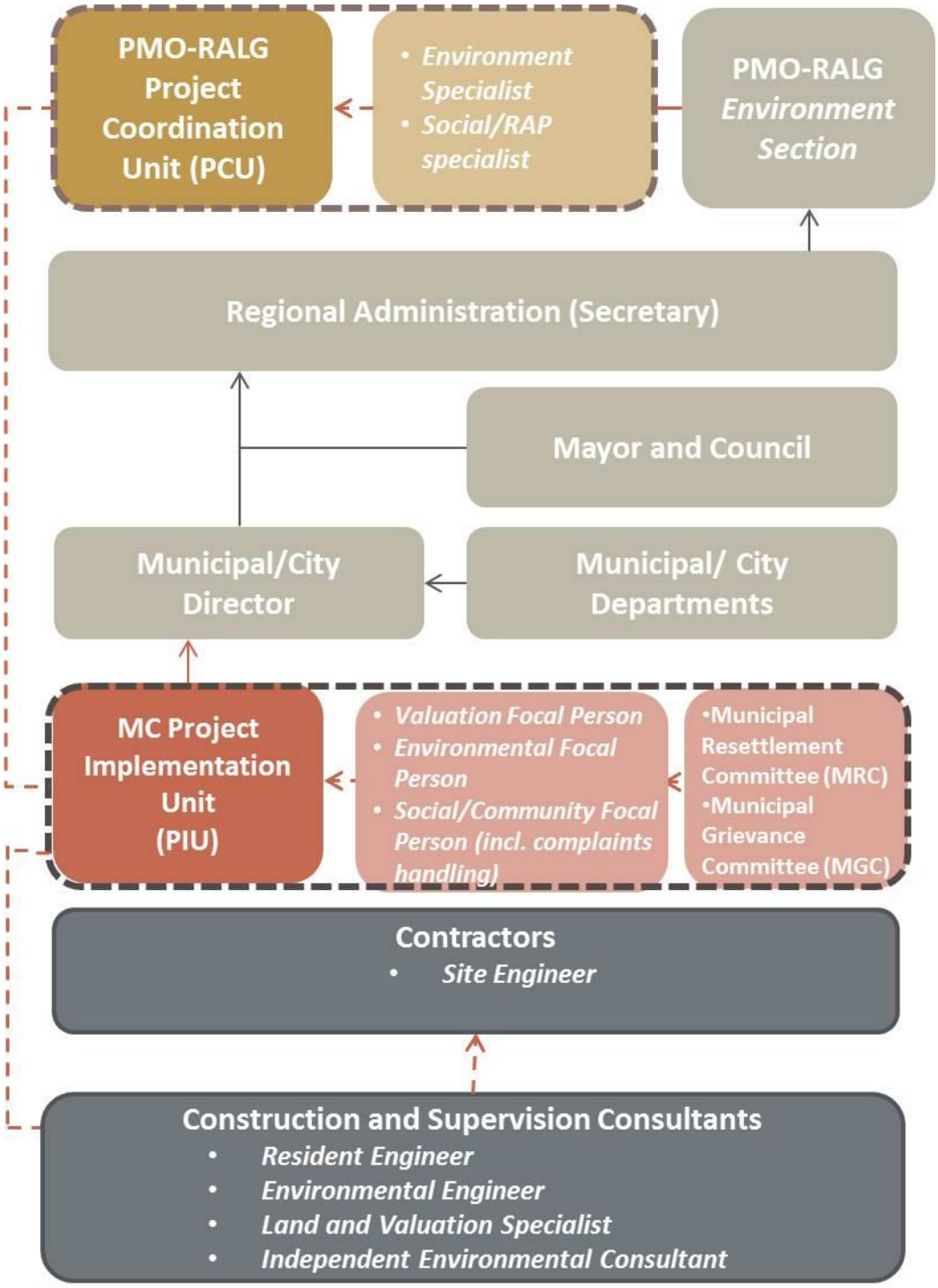
The complainants will be exempted from all administrative and legal fees that might be incurred in the resolution of their grievances and complaints.The Grievance Committee will prepare a report containing summary of all grievances and will make this available to PMO-RALG on a quarterly basis.

4.8 Roles and Responsibilities for Environmental and Social Management

4.8.1 Institutional arrangements

For the purpose of defining the institutional responsibilities for environmental and social management of the Sub-projects, it is proposed that the DMDP/PMO-RALG will play the lead coordination role, the DLA Project Implementation Units (PIUs) will implement projects, and both will work with other agencies, including ministries such as Ministry of Works, National Environmental Management Council (NEMC), other government agencies and the design and build contractors. **Figure 2** shows the organization chart for environmental and social management.

Figure 2: Environmental and Social Management Organization Chart



In order to have effective implementation of environmental and social management, there will be an integration of effort among various stakeholders. It is important that all responsible agencies / stakeholders appreciate that they are united and should interact and work towards a common purpose. The important stakeholders/ agencies identified in the ESMPs include PMO-RALG; DLAs, the Supervision Consultant; the Contractor; the Ward /

Village Councils and the Local NGOs/ CBOs dealing with project related environmental and social aspects in the project area.

The effective implementation of environmental and social management also requires that all persons working for the project to be aware of the importance of environmental and social requirements of the project; their roles and responsibilities in the implementation of the ESMPs. They should also be aware of the significant actual or potential environmental impacts of their work activities; the benefits of improved performance and the consequence of not complying with environmental requirements.

4.8.2 Institutional roles and responsibilities

ESMP roles and responsibilities are summarised in **Table 4.3** below.

Table 4:3 ESMP roles and responsibilities

DMDP/ PMO-RALG Project Coordination Unit (PCU)	DMDP/PMO-RALG is responsible for the overall implementation, administration and enforcement of the recommendations of the ESIA and the ESMP Report.	The Project Coordination Unit with oversight of the Ministry's Environment Section will: • Ensure that the ESMP provisions are included in all tender documents issued for construction work and activities on site and shall monitor/enforce that the Tenderers/Contractors abides by the specifications thereof; • Coordinating the implementation of the ESMP among the Dar es Salaam Local Authorities (DLAs), Basin Water Office (BWO) and other agencies and contractors; • Holding monthly coordination meetings on safeguard implementation with the PIU specialists and preparing meeting minutes that summarise progress, issues, and good practices. • Receiving safeguard compliance quarterly reports from DLAs and BWO and preparing annual environmental progress reports; • Conducting training for institutional capacity building; • Provide NEMC with reports on environmental and social compliance as part of their annual progress reports and annual environmental monitoring reports; • Report to International Development Association (IDA) on the status of safeguard matters through submission of annual progress reports.
Dar es Salaam Local Authorities (DLAs) – Project Implementation Unit (PIU)	As implementers of the projects, the oversight by local authorities is crucial for successful implementation of ESMP once some of the mitigation measures are better undertaken	Specifically, DLAs responsibilities include the following: • Visit and inspect major Sub-project sites regularly, to ascertain the level of compliance of works and report back environmental issues; • Maintain inspection reports on files; • Working with the Resident Engineers who have day-to-day interaction through supervisory staff; • Ensures the Contractors have all plans, procedures,

	by local communities with the support of the local government authorities. It is therefore important that Municipal Councils be involved in the implementation of ESMPs (through the PIU environmental and social specialists and Municipal Environmental Management Officers - MEMOs). The PIU environmental specialist has the responsibility to oversee and monitor adherence to, and implementation of ESMP by the Contractors (which includes compliance with the relevant obligations contained in the ESMPs).	approvals, and documentation in place to ensure ESMP compliance prior to commencement of any work; • Verifying environmental compliance and issuing of penalties for contraventions of the ESMPs; • Ordering the removal of person(s) and/or equipment not complying with the ESMP specifications; • Taking decisions in case severe non-compliances to the ESMPs are detected; • Providing input for on-going internal review of the ESMPs; • Stopping works in case of emergency or if significant environmental impacts are apparent or imminent; • Monitoring and verifying that environmental impacts are kept to minimum; • Preparing reports on environmental and social mitigation and monitoring and submit them to PMO-RALG quarterly; • Recommending PMO-RALG the issuing of penalties for contraventions of the ESMPs; • Support the Resident Engineer through the site construction supervision staff.
Contractor	The Contractor will be responsible for construction works and ensuring compliance with ESMP requirements. The Contractor shall appoint a **Site Engineer**.	Contractor shall: • Ensure that the environmental and social specifications of the ESIA and ESMP (including any revisions, additions or amendments) are effectively implemented; • Notify the MEMO/DAWASA, Basin Waters Office (BWOs) and Engineers immediately, in the event of any accidental infringements of the environmental requirements to enable appropriate remedial action to be taken; • Notify the MEMO/DAWASA, BWOs and other relevant agencies and Engineer, at least ten working days in advance, of any activity he has reasons to believe that may have significant negative impacts, so that mitigation measures are implemented accordingly; • Ensure environmental awareness among his/her employees and subcontractors so that they are fully aware of, and understand the environmental and social

		requirements and the need for them; • Report and record all accidents and incidents resulting in major injuries or death; • Inform MEMO/DAWASA, BWOs and other relevant agencies of problems arising when implementing the ESMP and ways of improving the ESMP; • Undertake rehabilitation of all areas affected by construction activities in order to restore them to their original state, as determined by the Engineer; • Undertake the required works within the designated working areas.
Construction Supervision Consultant (CSC)	The Supervision Consultant will be appointed by PMO-RALG and will be responsible for monitoring and supervision of the construction works including implementation of ESMP. The SupervisionConsultant will appoint a Resident Engineer. For supervision and monitoring of the implementation of ESMP throughout the construction phase, the implementing agency can engage an Independent Environmental Consultant.	Supervision activities will comprise: • Environmental compliance and monitoring, including checking, verifying and validating the overall environmental performance of the project through regular audits, inspection and review of project submissions. Monitoring activities by the resident engineer will comprise: • Visual observation during site inspection carried out at the same time as the engineering supervision activities, • Site inspections that will take place with emphasis on early identification of any environmental problems and the initiation of suitable remedial action; • Where remedial actions have been required on the part of the Contractor, further checks will need to be made to ensure that these are actually being implemented to the agreed schedule and in the required form.
Municipal RAP Committee (MRC)/ Municipal Grievance Committee (MGC)	Each MRC will support their respective DLA in organizing and implementing the compensation, assistance, and resettlement.	• Overseeing update of RAPs • Overseeing/monitoring implementation of RAPs including compensation payments • Implement public disclosure, consultation and participation • Handling grievance issues and keeping records • Quarterly reporting to DLA and PMO-RALG • Liaise with ward-level grievance desks

4.9 Capacity Building Program

4.9.1 Current capacity and capacity upgrading needed

The study on Institutional Strengthening of Dar es Salaam Local Authorities in Support of preparation of proposed DMDP conducted by Innovex in 2014, has stated that the three Municipal Councils(MCs) have no staff specifically dedicated to Environment and implementation of safeguard requirements. However the Municipal Councils have Urban Development, Natural Resources and Environment departments which as a whole oversee the Environmental Issues in the Municipality.

The departments have got at least one (1) environmental officer who solely deals with environmental issues on daily basis. Otherwise, other staff in these departments and whole Councils have limited knowledge of WB safeguard requirements and generally lack experience in environmental and social issues. Such low capacity represents a risk to the implementation of safeguards requirements as contained in the ESMPs and as required by the WB policy. The DMDP institutional framework includes the formation of a dedicated Project Implementation Unit in each DLA, which will include one environmental specialist and one social/resettlement specialist dedicated to the project. These will require support from other DLA officers, including the Municipal Environmental Management Officer, Community Development Officer, municipal engineers, and municipal valuers, who have limited experience with implementatation of World Bank safeguard policies.

It is, therefore, necessary to address this weakness through capacity building through technical assistance that will support the Municipal Councils during the implementation of the ESMPs. The technical assistance will specifically provide the necessary support to MCs in their work with contractors as well as other entities involved in the implementation of the ESMPs.

The technical assistance will include support to experts and training that will cover:

- general knowledge of safeguards requirements and project procedures, and
- important specific knowledge in safeguard procedures and requirements for project staff, consultants, and national contractors.

Specifically, the above will include, for example, assistance with the preparation of documents and implementation of training programs on environmental management and environmental monitoring for contractors and relevant staff of MCs (DMDP coordinators of contract packages) to do their tasks. It will also include assisting MC environment and social staffwith the review of contract documents to ensure compliance with the ESMPs. It will further provide general environmental guidance as requested by MCs to enhance overall project implementation and performance.

Given the nature, locations, and scale of construction, it is anticipated that the safeguard technical assistance support and training will be provided at least during the first 3 years of the project implementation. The WB safeguard specialists will support this in the capacity building program, in particular in the training activities as appropriate.

4.9.2 Proposed training programmes

Table 4.4 below provides examples of the basic training programs for safeguards during project implementation. The training programs will be developed and delivered by the Technical Assistance Team (TAT) for the implementation of safeguards for the MC training. The MC trained staff with the support of the TAT for the implementation of safeguards will provide the training to contractors and other entities concerned.

Other more specific and tailored training will be developed and agreed upon between MCs and the TATs for the implementation of safeguards during project implementation based upon reassessment of needs and the status of safeguards implementation.

- ***Target groups for the training****:* MC Staff, PMO-RALG staff, Contractors and community representatives in the project area.
- ***Training schedule:*** at least 1 month before the construction of the first contract. The training can be adjusted in line with the implementation schedule of the subproject/contracts.
- ***Training frequency***: The basic training programs proposed in **Table 4.4** below will take place every six months on a yearly basis and its content updated and adapted to implementation issues. Training frequency and content will be reassessed during implementation depending on needs. It is foreseen that the training program for MC staff will continue until year ending the construction period. Three days of training for contractors are also planned to take place twice a year on an annual basis for at least two years.

Table 4.4: Training Programs for Capacity Building in Social and Environmental Supervision and Management

Target Group	**PMO-RALG Staff and MC Staff**
Course Title	Social and Environmental supervision, monitoring and reporting
Participants	Social and Environmental staff and technical staff
Training Frequency	Soon after project effectiveness but at least 1 month before start of construction of the first contract. Follow-up training will be scheduled as needed.
Time	Four days of training, to be held twice a year, and then to be repeated on a yearly basis until year three of implementation.
Content	• General Social and environmental management relating to the project, and covering the requirements of WB; • General aspects of social and environmental supervision; • Implementation and supervision of mitigation measures; • Community participation in social and environmental supervision monitoring. • Guidance and supervision of contractors, Subcontractors and community representatives in the implementation of

	environmental supervision. • Use of forms for social and environmental supervision; • Risk response and control; • Receipt and submission of reporting forms • Other areas of training needs, as determined
Responsibilities	PMO-RALG, MC with support of the Technical Assistance Team for the implementation of safeguards.
Target Groups	**CONTRACTORS, SUBCONTROCTORS, WARDS AUTHORITIES, COMMUNITY REPRESENTATIVES**
Course Title	Implementation of mitigation measures
Participators	On-site construction management staff; environmental staff of contractors; ward/group authorities.
Training frequency	After bidding, and determine based on needs
Time	3 days of training for contractors and 2 days of training for others, to be repeated twice a year on an annual basis depending on needs
Content	Overview of environmental monitoring; Requirements of social and environmental monitoring; Role and responsibilities of contractors Scope and methods of social and environmental monitoring; Response and risk control; Propagate monitoring forms and guide how to fill in the forms and risk report; Preparation and submission of reports Other areas to be determined.
Responsibilities	PMO-RALG, MC with support of the Technical Assistance team for the implementation of safeguards
Target Groups	**COMMUNITIES AND WORKERS**
Course Title	Environmental sanitation and safety
Participators	Representatives of community and/or worker leaders (as appropriate)
Training frequency	As appropriate
Time	One-day presentation and one-day on-the job training twice a year, to be repeated on as needed basis
Content	• Preliminary presentation on environmental protection and environmental overview • Key issues that require communities' and workers' attention to minimize safety risks (roads, waterways, equipment, machines, open excavations, etc.) as well as reduce pollution (dust, fumes,

	gases, oil/grease spills, waste management, etc.) • Management of environmental safety and sanitation on work sites; • Mitigation measures at construction sites; • Safety measures on electricity, mechanical, transportation, air pollution; • Procedures to deal with emergency situations; • Other areas to be determined.
Responsibilities	Contractor and MC

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

The three project components and specifically eight first-cut package sub-projects under the DMDP are feasible and consistent with the socio-economic development plans of their respective municipalities, and of Tanzania. Apart from meeting the socio-economic development needs of the municipalities, they support sustainable development of the three Municipalities, through basic infrastructure upgrading, service improvements, including surface water drainage systems and environmental sanitation, and the provision of essential new road links including in unplanned settlement areas. Detailed EIAs were prepared for each municipal projects, whereby all potential environmental and social impacts were identified and evaluated.

The positive impacts of the project include employment opportunities to local people, improving the living conditions of the city residents, improving water supply quality and environmental quality for local people through the upgrading of water supply and drainage systems, and the construction of new wastewater treatment plants at the newly developed resettlement sites. Water quality in existing water bodies in the cities will be significantly improved over time as the sewers and drains will be connected to new treatment facilities, some of which are still in the planning or construction phases. Many existing alleys in low income areas, and connecting roads will be rehabilitated, improving access and reducing traffic-related environmental problems. The focus of the project will be on low income areas where environmental conditions require most improvement.

During project implementation, some negative impacts will affect the local environment and local populations in the project areas. Land acquisition and associated compensation of several hundred project-affected households will be required for all project components in all Municipalities. RPF and RPs have been prepared. Typical of all construction activities there will be negative impact related to noise, air and water pollution, generation of solid wastes, disruption of public utilities, occupational health risks, and soil erosion to mention a few.

Most impacts will be typical and can be mitigated by the use of environmental codes of practice (ECOPs). TheECOPs provisions will form part of the project contractors'contracts and the PPMU and their CSC will ensure that the contractors comply with the provisions of their contracts, including those relating to environmental impacts. In accordance with their contracts, in case of site-specific impacts, contractors will be required to prepare site-specific detailed designs and ESMPs.The site-specific EMPs will be approved by the CSCs prior to the work commencing. Periodic monitoring reports will be prepared by independent environmental monitoring consultants and the results will be submitted to the PMO-RALG and the World Bank and the Government.

To facilitate effective mitigation of impacts during operation, the project will also provide substantial support for capacitybuilding, including training courses, at various levels to ensure that the ESMPs will be implemented and their performance monitored.Environmental monitoring will be carried out to ensure that the project activities will not create adverse impacts. The monitoring results will be periodically reported to the World Bank and the Government.

There were two rounds of public consultation in the course of the ESIA preparation, and the project is supported by, and received valuable comments and inputs from the affected local

communities and authorities.The ESIAs, and RAPs will be disclosed to local communities and authorities in the project areas.

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ANNEXES

Annex 1: Relevant Tanzanian Policies & Legislation Reviewed

The project is required to comply with the Tanzanian Environmental Act (2004), including the environmental and audit regulations (2005), standards and other relevant regulations. The following policies/legislations were reviewed in connection with the DMDP

Policies

***The National Environmental Policy (NEP)*, 1997** outlines the framework of fundamental changes that are needed to bring environmental considerations into the mainstream of decision making in Tanzania. It also provides policy guidelines, plans, priorities, and recommendations for monitoring and review of policies, plans and programmes that directly relate to the environment. The project will address these policy objectives by ensuring that environmental issues are mainstreamed into the project planning and implementation.

National Land Policy (NLP), 1995 (Revised in 1997) is a comprehensive policy pronouncement regarding land tenure, management and administration, whose overall objectives among others include to promote and ensure the existence of a secure land tenure system in Tanzania and to sustainably foster optimal use of land. The policy emphasizes integrated planning and improved management of urban centres and the designation of urban and land uses based on environmental impact considerations. In particular, it recognises the importance of social services such as water supply, road networks, waste management and energy development that take place on land for human benefits, to be done in a right manner so as to protect land for other uses and avoid land degradation. As this policy recognizes the importance of protecting public service utilities for environmental protection, the design and construction of the project has/will consider restoration of public service utilities and road infrastructure as well as during project operation and also ensure that solid wastes do not accumulate and create blockage of drainage systems.

The National Human Settlements Development Policy (2000) **r**ecognizes environmental protection within human settlements and protection of natural ecosystems against pollution, degradation and destruction in order to promote development of human settlements that are sustainable and facilitate the provisions of adequate and affordable shelter to all income groups in Tanzania. It also recognizes the need for attainment of urban development through coordination and cooperation with other sectors/stakeholders, including CBO, and NGOs in urban development planning. The proposed project itself has an ultimate objective of ensuring the safety and welfare of the people while considering the protection and sustainable development of human settlements.

The Agricultural and Livestock Policy (1997) addresses the changes that affect the agricultural sector in Tanzania and specifically addresses restrictions to agricultural practices stemming from the National Land Policy and the need for agricultural practices to ensure protection of the environment while improving food security and alleviating poverty, and promoting integrated and sustainable use and management of natural resources including

land, soil, water and vegetation. Although the proposed project is confined to urban areas, various vegetation forms will have to be cleared for the construction of the roads. Moreover, urban faming is practiced in some areas for domestic consumption and will have to be taken into consideration.

The National Forrest Policy (1998) has the overall goal of enhancing the contribution of the forest sector to sustainable development of Tanzania and conservation and management of natural resources for the benefit of present and future generations i.e. forests have to be managed in terms of socio-economic, ecological and cultural sustainability, as per the principles of multi-functionality and equitable benefits and responsibility sharing. The ESIA process will take into consideration the provisions of the National Forest Policy in particular ecosystem conservation and management where clearing of vegetation and widening of roads will be required.

***The National Water Policy (2002*)** recognises water as an important requirement for all humans to maintain health, and to restore and maintain the functions of natural ecosystems. The main objective is to develop a comprehensive framework for sustainable development and management of water resources and ensure that beneficiaries fully participate in all stages of water resource development and recognizes the fundamental but intricate linkages between water and socio-economic development, including environmental requirements. The project will ensure that receiver water bodies are appropriately managed to ensure the minimization of surface and underground water resources pollution.

National Policy on HIV/AIDS, 2001 has as its overall goal, to provide for a framework for leadership and coordination of the national multisectoral response to the HIV/AIDS epidemic. This includes formulation (by all sectors) of appropriate interventions which will be effective in preventing transmission of HIV/AIDS and other sexually transmitted infections, protecting and supporting vulnerable groups, and mitigating the social and economic impact of HIV/AIDS. It also provides for the framework for strengthening the capacity of institutions, communities and individuals in relevant sectors to arrest the spread of the epidemic. The project is expected to hire local people from all over Dar es Salaam City who will interact with the local communities along the road project. It is the responsibility of the Project contractor and developers to participate in the fight against HIV/AIDS by raising workers awareness and their individual responsibility in the prevention of the epidemics.

Legislations

Constitution of Tanzania, 1997-1995: The current Constitution of the United Republic of Tanzania was ratified in 1977. It is the country's fourth Constitution since the independence from the United Kingdom (9 December 1961 for Tanganyika and 10 December 1963 for Zanzibar) and recognises the basic rights for its people to the protection of their lives by the society in accordance with the law. The National Constitution has to be taken into account in the project especially in matters concerning human rights as stipulated in the constitution. It is expected that the construction of the project leads into land acquisition issues and loss of properties (including houses), which shall consider prompt execution of compensation according to the national laws.

Environmental Management Act (EMA) No. 20, 2004**:** The National Environmental Management Act (EMA) No. 19 of 1983 started the process of regulating environmental management in Tanzania. Although draft EIA guidelines and procedures were produced in 1997 and amended in 2003, the country lacked a coherent code of supporting legislation to enable effective environmental management. Therefore a study was initiated with funding from the World Bank, and culminated in the promulgation of the Environmental Management Act (EMA) No. 20 in 2004. EMA stipulates the need to conduct Environmental and Social Impact Assessment (ESIA) for development projects in Tanzania. EMA also provides a policy framework for environment and natural resources management and:

- Provides the legal and institutional framework for the sustainable management of the
  environment;
- Stipulates impact and risk assessments, the prevention and control of pollution, waste
  management, environmental quality standards, public participation, compliance and enforcement;
- Provides for the implementation of the National Environment Policy;
- Repeals the National Environment Management Act of 1983; and
- Provides for the continuance of the National Environment Management Council, as well as the National Environment Trust Fund.

Local Government (District Authorities) Act, 1982 has the objective of making better provisions for, and to consolidate laws relating to, local government, to repeal the Local Government Ordinance, certain other written laws and to provide for other matters connected with or incidental to the organization of local government in Mainland Tanzania. This Act aims at improving procedures and functions of local government authorities especially in urban areas e.g. Part 81 (1) advocates for respecting the provision of sanitary arrangements and conveniences of /or in connection with new or extended or altered buildings.

Land Acquisition Act No. 47, 1967 stipulates the power and the procedures for acquiring land and the required degree of compensation. The Act repeals and replaces the Land Acquisition Ordinance, to provide for compulsory acquisition of lands for public purposes and in connection with housing schemes. The relevance of this Act relates to the compensation of land taken and loss of properties of the people affected by the project.

Public Health Act No. 1, 2009 provides for the promotion, preservation and maintenance of public health with a view to ensuring the provisions of comprehensive, functional and sustainable public health services to the general public. Public Health Act also addresses the protection of the environmental health and sanitation including healthcare waste management. The central theme of this act is to provide for the promotion, preservation and maintenance of public health with a view to ensuring the provisions of comprehensive, functional and sustainable public health services to the general public and to provide for other related matters. Major issues addressed in this act include operation of housing & hygiene, human settlements, solid & liquid waste, food & nutrition, control of diseases and

workers' health. Relevant sections of this Act related to the implementation of this project include the following:

Section (81) Transportation and Disposal of Liquid Waste

- The authority shall ensure that sewage from cesspool and sludge from septic tanks are collected and transported by specified vehicles for liquid waste disposal;
- Ensure that sewage is appropriately treated prior to its discharge into water bodies or open land, the sewage will not increase the risk of infections or ecological disturbance and environmental degradation;
- Designate and ensure compliance with designated disposal ponds, sewage treatment facilities and sewer points.
- Section 73 (1) (c): to collect, transport and dispose of solid and liquid waste from buildings,
- premises and land.

Occupational Health and Safety Act No. 5, 2003 repeal the Factories Ordinance. It is an Act designed to make further provisions for securing the safety, health and welfare of persons at work; it provides for the protection of persons at work against hazards to health and safety arising out of or in connection with activities of persons at work; and provides for other health matters. The current Occupational Health and Safety (OHS) Act aims at protecting the safety, health and welfare of people engaged in work or employment. The goal of occupational safety and health act is to foster a safe and healthy working environment for all employees. Some of other important goals of this act include:

- Review of the effectiveness of health and safety measures;
- Identification of Potential hazards /incidents in a factory / workplace;
- Examination of major causes of incidents at the factory or workplace and;
- Internal health or safety auditing.

Water Resources Management Act No. 11, 2009 repeals the Water Utilisation (Control and Regulation) Act No. 42 of 1974. This law covers issues of institutional and legal framework, principles for water resources management and prevention and control of water pollution. It established the National Water Board (NWB), catchments and sub-catchments and offences and penalties. The objective of the WRMA is to ensure that the nation’s water resources are protected, used, developed, conserved, managed and controlled to meet the basic human needs of present and future generations. The Project ESIAs have taken into account this act and recommended mitigation of impacts on water resources in their quantity and quality aspects.

Water Supply and Sanitation Act No.12, 2009: The Water Supply and Management Act established the legal framework to the management and adequate operation and transparent regulation for water supply and sanitation services with a view to give effect to the National Water Policy, 2002. The Act outlines the responsibilities of government authorities involved in the water sector, establishes Water Supply and Sanitation Authorities as commercial entities and allows for their clustering where this leads to improved commercial viability. It also provides for the registration and operation of Community Owned Water Supply Organisations and regulates the appointment of board members.

The design and implementation of the projects takes into consideration the provisions of water supply and sanitation especially those which relate to the potential interruption of utility services for water and sanitation.

Mining Act No. 5, 1998 repealed 2010 regulates the law relating to prospecting for minerals, mining, processing and dealing in minerals, to granting, renewal and termination of mineral right, payment of royalties, fees and other charges and any other relevant matters. Mining license applicants are required to submit plans for environmental protection. The relevance of this Act for the rehabilitation of Sinza River and for the construction of the detention ponds relates to the possible need for earth materials acquisition and gravel for the construction activities. In order to minimize the environmental impacts associated with this operation recourse should be made preferably in quarries which area already licensed and in operation.

***Environmental Impact Assessment Guidelines and Audit Regulations, 200*5** provide procedures for carrying out environmental impact studies and environmental audits as provided in the EMA. They prohibit underataking development projects without EIA as per the EMA and define the contents and form of an EIA and the basic principles of an environmental audit. Accordingly, a developer shall apply for an EIA certificate as prescribed by these Regulations. The final decision on an EIA shall be taken by the Minister responsible for Environment. The Regulations also provide for public hearings in relation to contentious projects and appeal against decisions of the Minister.

***Environmental Standards*:** In terms of section 140 of the EMA, the National Environmental Standards Committee of the Tanzanian Bureau of Standards (TBS) is required to develop, review and submit proposals for environmental standards relating to: water quality, discharge of effluent, air quality, noise and vibration, subsonic vibration, ionising and other radiation, soil quality, noxious smells, light pollution, electromagnetic waves and microwaves.

Air Quality Standards Regulations, 2007 aims to set baseline parameters on air quality and emissions based on a number of practical considerations and acceptable limits and enforce minimum air quality standards prescribed by the National Environmental Standards Committee. It helps developers such as industrialists to keep abreast with environmentally friendly technologies aiming to ensure the protection of human health and the environment from various sources of pollution. The relevance of this standard to the project is reflected in section 1 (3) (d) where it states the objectives of this standard among others, is "to ensure protection of human health and the environment from various sources of pollution".

Soil Quality Standards Regulations, 2007 provides framework for environmental protection by different sectors into the mainstream of decision making to ensure minimum environmental negative impacts due to agricultural practices and use of external inputs. It requires the agriculture sector to ensure food security and eradication of rural poverty through the promotion of production systems, technologies and practices that are environmentally sound, with emphasis on strengthening of environmentally sound use, monitoring, registration and management of agro-chemicals.

Solid Waste Management Regulations, 2009 are guided by the *precautionary principle*, which includes a consideration of the cumulative impacts of the project, indirect impacts, residual impacts and areas of risk and uncertainty; the *democratic principle*, which involves consultations with stakeholders/public and minority goups and consideration of gender; the *polluter pays principle* which considers adequate analysis of project alternatives, comprehensive mitigation measures and monitoring plans and the *integrative principle* meaning that the three pilars of sustainable development are considere equally, i.e. socially, economically and environmentally.

Water Quality Standards Regulations, 2007 are intended to protect human health and to promote the conservation of the environment, enforcing minimum water quality standards prescribed by the National Environmental Standards Committee. At the same time the water quality standards enable the National Environmental Standards Committee to determine water usages for purposes of establishing environmental quality standards and values for each usage and ensure that all discharges of pollutants take into account the ability of the receiving waters to accommodate contaminants without detriment to the uses specified for the waters oncerned.

The Land (Assessment of the Value of Land for Compensation) Regulations, 2001
provide the possibility of claiming for compensation for land or "un-exhausted improvement" to be paid by the Government. The assessment basis shall be based on the market value of the land including certain allowances: Compensation for loss in any interest in land including the value of unexhausted improvement, disturbance allowance, transport allowance, accommodation allowance, and loss of profits. All affected people in this project will be compensated as stipulated in this regulation

Annex 2: Example of an Environmental and Social Monitoring Plan (ESMoP)

Potential impact	***Proposed mitigation measure***	***Monitoring Parameter***	***Target level/ Standard***	***Monitoring frequency***	***Status***	***Comments***
Dust pollution from excavation works	*Use dust boozers to spray water before large excavation/ earthworks*	*Air pollution*	*Dust particles less than ****	*Every day during large earth work activities*	*On track*	
Destroyed fruit trees used by local residents due to vegetation clearance	*Re-planting of fruit trees after major construction works*	*Planting of fruit trees*	*Fruit trees restored*	*Every week after major construction works completed*	*to be implemented (October 2013)*	*Construction works still underway*
Death due to accidents	*Build speed humps near construction areas to reduce speed*	*Traffic accidents*	*No traffic accident incidences recorded*	*Every month during construction*	*On track*	
Increased incidence in HIV/AIDS (or other Social diseases)	*Provide free clinic and counselling for construction staff*	*HIV/AIDS infection rate*	*No new HIV/AIDS infections during construction*	*Every 3 months during construction*	*Not on track- review ESMP*	*Staff reluctant to attend free clinic- to conduct awareness campaign*

Annex 3: A Typical Example of a SEMoP Implementation (source: TSCP Progress Report, 2011)

Component/ Indicator	Social-economic impact	Quantitative Indicator	Qualitative Indicator	Means of Monitoring	Frequency/ timing	Remarks
1	2	3	4	5	6	**7**
Compensation by DLA	Timely and adequate compensation of the affected properties	PAPs adequately compensated	Less disputes/ grievances/ complaints	Check list of PAPs & verify if compensated as scheduled	1st 6 months of Interest-Free Compensation	□ All DLAs compensated eligible PAPs using Own Source funds □ New previously unforeseen & skipped properties of formal, informal, temporary & illegal PAPs emerged. Councils paid and relocated them.
Grievances resolution by DLA	Effectiveness of grievance mechanisms	Low level of grievances reported to project office Reported grievances solved Few court cases reported	Satisfaction of the PAPs	Project reports on reported and solved grievances	The first three month after payment of PAPs	□ RC, RAS, DC, Arbitration Court, RAP Committees involving Agencies & PAPs mediated raised disputes & grievances to amicable consensus.
Stakeholders participation by DLA M&E	Consultation and participatio	Frequency of meetings	None or diminished complaints	Check in project minute	Every month	□ Bi-monthly RAP Committees gave guidance,

	n with stakeholders/ PAPs	with Sub-Project PAPs	/ disputes & hostility to Sub-Project	records on issues raised and methods of solutions		followed-up progress & reported on RAP implementation.
Employment /Livelihood activities by Consultant/ DLA	Change in nature of employment & income generation	-Increased formal and informal employment. -More businesses established Sub-Project areas where PAPs live -Increased assets owned by PAP households	In Sub-Project areas: -Quality of life improved -businesses -assets owned PAP households increased	-Employment survey in Sub-Project areas vs income -Household survey on property and assets owned	Bi-annually	□ Affected communities secured jobs in Sub-Projects; Improved H/H earning, belongings & closer family ties. Increased LGA revenue eg Arusha. □ Project areas showed improvement in lifestyle, business & street views.
Services to community/ improved livelihood by Consultant/ DLA	Roads, Drainage, Streetlights, Dumpsites, etc improved	-Mosque/ Churches replaced in the affected Streets -Mobility time reduced	-Improved targeted infrastructure services/coverage -Level of satisfaction on the availability of road infrastructure	Mtaa, WEO, RAP Committee report and DLA DMDP reports	Quarterly	□ Beautified street buildings & businesses; regulated traffic mobility, reduced accidents & urban vices. □ Post-compensation RAP mitigation measures enforced by DLA have made Project settlements livable