HAWASSA CITY ADMINISTRATION

ENVIRONMENTAL PROTECTION AND FOREST DEVELOPMENT OFFICE

PROJECT PROPOSAL ON

ENVIRONMENTAL PROTECTION and FOREST DEVELOPMENT AROUND HAWASSA CITY AND THE LAKE

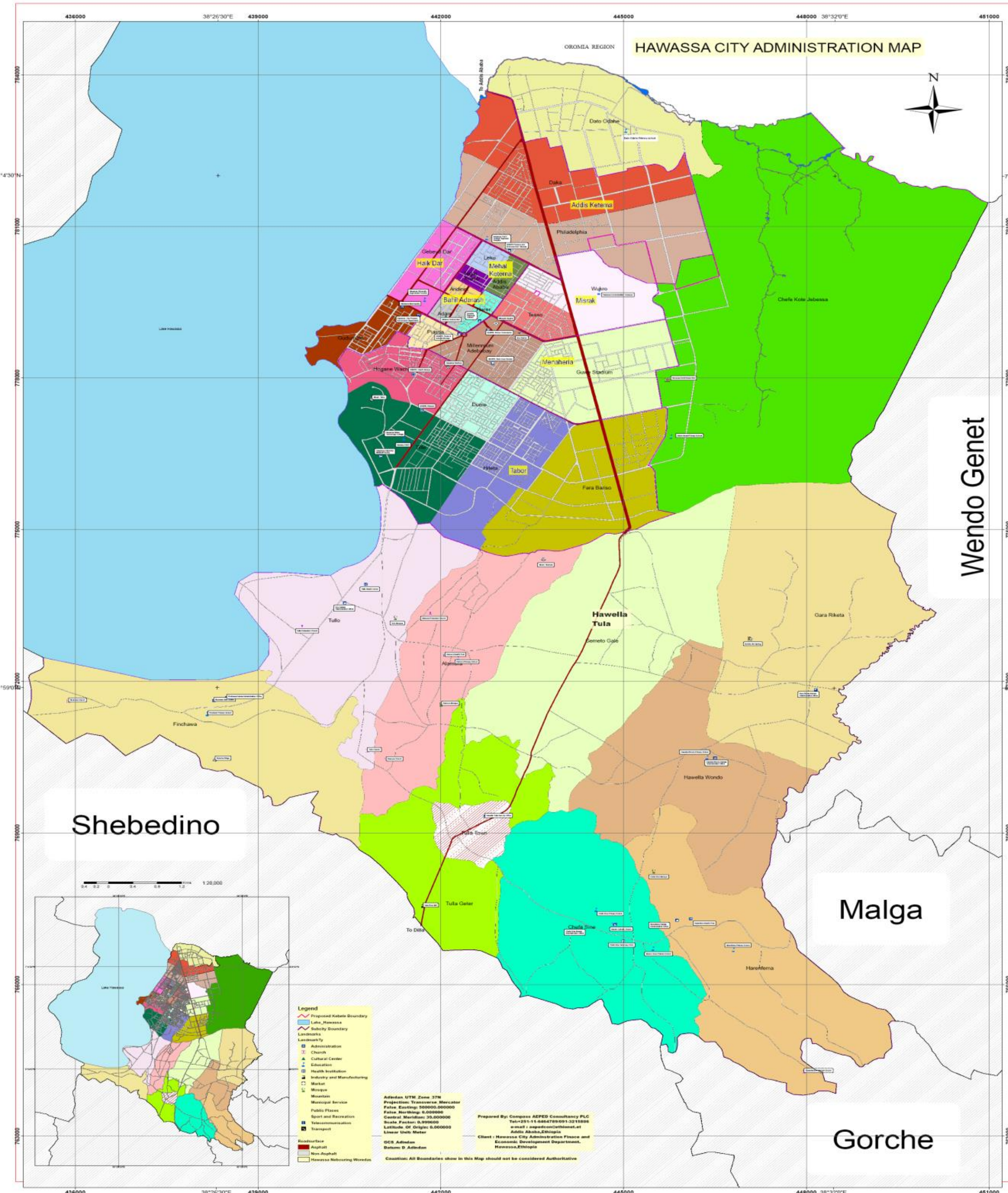
SUBMITTED TO: ***Czech aid***

1. DESCRIPTION OF THE PROJECT AREA

Hawassa city is one of agglomerating urban centers in the Southern Nations Nationalities and Peoples Regional State established on the shore of Lake Hawassa. It is located in the Great Rift Valley region; 275 km south of Addis Ababa via DebreZeit and 1125 km north of Nairobi. The city serves as the capital of the Southern Nations Nationalities & Peoples Regional State and Sidama Zone. Geographically it lays between $7^0$3' latitude North and 38^0 28' longitude East. It is bounded by the lake in the West, Oromia Region in the North, Wondogenetworeda in the East and ShebedinoWoreda in the south.

Hawassa has a total area of 157.2 sq.km divided into Eight (8) sub cities divided into 32 Kebeles. These Eight sub cities are Hayek Dare, Menehariya, Tabore, Misrak, BahileAdarash, Addis Ketema, Hawela Tula and Mehalketema sub city.

The mean annual precipitation is 933.4 mm. Temperatures vary between 5°C in winter and 34°C in summer. The city experiences sub humid-called 'WoyinaDega' type of climate. It has the highest and lowest temperature of 34^0c and 3^oc respectively. The average annual temperature is 20.3^{o}c. Hawassa gets rainfall twice in a year. It falls during 'Belg' and 'Kiremt' (winter… rainy season). The first rainfall falls from 'Megabit' to the mid of 'Ginbot' (May) and the next comes from 'Sene' (June) to the mid of 'Meskerem'(September). Due to the city's location in the Great Rift Valley on the shore of rift valley Lake Hawassa, its weather condition changes dramatically from day to night.


HAWASSA CITY ADMINISTRATION MAP
OROMIA REGION
N
Dato Odahe
Daka
Addis Ketema
Philadelphia
Gebeya Dar
Hayik Dar
Mehal Ketema
Bahil Adarash
Wukro
Misrak
Tesso
Millennium
Hogiene
Menaharia
Gemeto Gale
Dume
Tabor
Chefe Kote Jebessa
Wendo Genet
Tullo
Alamura
Hawella Tula
Finchawa
Gara Riketa
Hawella Wondo
Shebedino
Tulla Town
Tulla Geter
Chafe Sine
To Dilla
Hareffema
Malga
Gorche
Legend
Proposed Kebele Boundary
Lake_Hawassa
Subcity Boundary
Landmarks
Administration
Church
Cultural Center
Education
Health Institution
Industry and Manufacturing
Market
Mosque
Mountain
Municipal Service
Public Places
Sport and Recreation
Telecommunication
Transport
Roadsurface
Asphalt
Non-Asphalt
Hawassa Neibouring Woredas
1:20,000
436000
439000
442000
445000
448000
451000
38°26'30"E
38°32'0"E
Caution: All Boundaries show in this Map should not be considered Authoritative

PROJECT

1. LAKE SHORE MANAGEMENT AND LAND SCAPE BEAUTIFICATION AROUND BUFFER ZONE OF LAKE HAWASSA

1.1 Introduction

Soil erosion and sedimentation are serious problems in the Lakes basins. It affects land and water resources both where the erosion occurs and where subsequent deposition occurs (Novotny, V.andOlem, H.1994 and El-Swaify, S. A. 1994**)**.Soil erosion is the process by which soil is worn away from the land through various geomorphic processes, including soil detachment caused by rain and overland or sheet flow, rill erosion and transport, channel degradation and bank erosion. There are many factors that affect the rate at which soil erodes from land, including rainfall intensity and duration, soil erodibility, land topography and type of land use, type of vegetative cover and tillage practices also impact the rate of soil erosion.

The sedimentation process consists of soil erosion, soil transportation and sediment deposition. Both erosion and sedimentation reduce the productivity of agricultural cropland; adversely affect fish communities and wildlife habitat; negatively impact the recreational quality of lakes and it is integrally linked to land degradation, and excessive soil loss resulting from poor land management (Montgomery, 2007). Lake Hawassa is now covered by sediment deposition. Not only reduction water storage, but also other effects of sedimentation on aquatic habitats should be also taken in consideration.

1.2 Objectives

The project has intended to achieve the following objectives:

- To develop green zone through landscape design around the Lake to protect the Lake from siltation and pollution.
- To raise the awareness of the general public, lake side community, private sector, as well as for varies institutions and police makers around the issue of the lake and its buffer zone

1.3 Rationale

The Lake has wonderful natural reward to the city and it envelops the city north to southwest. The Lake is the name of the city and beauty; home to different biodiversity, source of food and income, etc. however, it is influenced by pollution problems that are induced by growth of industry at the city and siltation. To solve such problems the city administration understands that this naturally gifted beautiful Lake is under risk if in any measure could be taken. These problems require quick intervention to protect the Lake and its environs (surrounding) before it goes beyond control.

1.4Expected Outcome of the Project

- Training the concerned experts from Hawassa city administration stakeholders from different sectors
- Awareness raising conducted forlake side community and the general public
- Develop land scape design that protects the lake from siltation and pollution problem.

2. REHABILITATION OF DEGRADED MOUNTAINS AND CHANGING THEM TO ECONOMIC BENEFITS

2.1 Introduction

The natural vegetation in the Lake sub-basin can be divided into two categories. One is the disturbed natural high forest occurring in the highlands in the eastern and north eastern parts of the sub-basin largely in Wendo Genet wereda and some in Malgawereda. The second type of vegetation is the lowland acacia woodlands and bush lands occurring in the western parts of the sub-basin mainly in Siraro, Shala, HawassaZuria and Boricheweredas.The overarching aim of the national development strategy is poverty reduction, with agricultural development, decentralisation and capacity building in public and private sectors along with civil service reform supporting pillars. Agricultural development will be achieved, focussing on rural towns as growth centres, with increased private sector participation, strengthened agriculture technology systems and improved environment and watershed management.The Sustainable Land Management Investment Framework aims at the restoration, maintenance, and enhancement of the productive function of land in the country leading to improved economic and social well-being of those who depend on these resources while preserving the ecological functions of these lands. Significant progress in poverty reduction will depend on the ability to achieve growth in the agricultural sector and on attaining sustainable land management (SLM).

The high lake levels in LakeHawassa in the late 1990s and subsequent flooding were a cause of concern as well as having caused damage, and further study is justified. One suggestion to explain rising lake levels was that an increase in sedimentation in LakeCheleleka, to the east of LakeHawassa, had reduced the water attenuation capacity of that lake and wetland and therefore the lake level in LakeHawassa rose. Concerns had been voiced over the amount of sedimentation directly into LakeHawassa. The main factor contributing to high sediment load is upstream soil erosion driven by the expansion of cultivation in fragile areas, improper farming practices, deforestation and overgrazing all in turn driven by increasing population pressure.

2.2 Objective

To rehabilitate 180ha Alamura,Tabor and Kuyuata mountains concerned to conserve Lake Hawassa from siltation problem and also to tackle its biodiversity. Further, and contribution is made in combating climate change and sustainable development through community integrated action and improved livelihood.

2.3 Rationale

High sedimentation and siltation would be reasons for the raise of the Lake level and depletion in fish productivity.

2.4 Expected Outcome

- Community representatives were conducted trainings and raised their awareness level onrehabilitation and conservation of environment including the Lake Hawassa
- Furthermore, the community members decided to recover degraded mountains with indigenous and exotic seedlings especially that suitable to the ecosystem.
- Special nursery site will be established for indigenous trees in the city.
- Energy Saving stoves/Women are the most affected by environmental hardships; for example, they need to walk long hours to firewood/defforestation and animal dung /equal benefit from the various developmental activities.

1. Objective-out put

Narrative summary	Verification indicator	Means of verification	Opportunity/risk
Make the city green areas in advanced manner by fencing, make green and to have seating and other facilities	• Fencing 17 green areas • Planting and fencing 11 green areas • Construct 50 stone chairs • Install water pipe 20 green areas	Monitoring and evaluation	Governmental body positive and negative influence

Narrative summary	Verification indicator	Means of verification	Opportunity/risk
Buffer zone extension on the shore of lake	• Construction 5 km length on the shore of lake •	Monitoring and evaluation	

Narrative summary	Verification indicator	Means of verification	Opportunity/risk
To maintain the lake ecosystem by using bio remidation	• Planting vetiver grass on the lake shore • Awareness creating for • Harvesting vetiver grass as bio fuel • Planting pricket machine for re-cycling vit	• Monitoring and evaluation	• Extent of adoption pricket as afuel

Narrative summary	Verification indicator	Means of verification	Opportunity/risk
Formulate and strengthening environmental protection clubs in each project areas elementary schools	• Prepare stimulating song on environmental protection by well known organizer • Establishing environmental clubs on 40 elementary schools	Monitoring and evaluation	

Narrative summary	Verification indicator	Men of verification	Risk/opportunity
Bamboo nursery establishment	7 bamboo nursery in 4 sub city	Office report	
Bamboo seedling production	Produce 3 000000 seedling	Office monitoring and evaluation report	
Awareness raising on bamboo propagation and utilization	Awareness creation for 700 people	Monitoring and evaluation report	
Bamboo promotion and market linkage event	Two time event organizing	Monitoring and evaluation report	

2. Output-activity

Narrative summary	Verification indicator	Means of verification	Opportunity /risk
Establishing environmental clubs on 40 elementary schools	• Prepare training and panal discussion 4 times In ayear • Make available some tools and accessories for environmental clubs	• Monitoring and evaluation team of environmental office •	• Active or inactive of school management

Narrative summary	Verification indicator	Means of verification	Risk/opportunity
1.Allocate 1000 power saving stove 2.awareness creation on environmental degradation and deforestation	• Distribute power saving stoves to the Associations of specified kebles • Prepare and conduct trainings and panal discussions for 300 people in two times	• Monitoring and evaluation report	• Willingness of the societies to accept new technologies

Narrative summary	Verification indicator	Means of verification	Risk/opportunity
1.Increase expert qualification by international experience sharing and work shop	• To have international environmental protection experience for three experts • Transporting inputs for production and distribution of seedling and extended work of the project •	• Financial report and travel document	

Narrative summary	Verification indicator	Means of verifications	Risk/opportunity
1.Planting vetiver grass 2.awarens creating 3.harevesting vetiver grass as bio fuel 4.planting pricket machine for re cy-cycling	• Planting vetiver grass 3 k.m on the shore • Training for those farmers farming at the shore use chemicals(100 farmers) • Prepare Funding document and procedures • Prepare criteria to take fund of pricket machine	• Monitoring and evaluation report	Work habits and willingness of the association to handle the re-cycle plant

Narrative summary	Verification indicator	Means of verification	Risk/opportunity
Constructing 5 k.m length on extension work of buffer zone on lake hawassa	• Out sourcing the work • Prepare the necessary document for agreement	• Monitoring and evaluation	

Project cost

Activity/objective	standard	quantity	Unit price	Gross price	First year	Second year	
Waste management trainings	number	3000	120	360000	180000	180000	
Training and panel discussion	number	800(8)	100	640000	320000	320000	
Tools1:spade	number	80	150	12000	12000		
Tools2:hoe	number	80	150	12000	12000		
Tools3:wheel cart	number	40	800	32000	16000	16000	
Power saving stoves	number	1000	1000	1000000	500000	100000	
Training and panel discussion on power alternatives	number	600	200	120000	60000	600000	
International work shop and trainings	numbers	4	100000	400000	400000		
Constructing buffer zone	k.m	5	2000000	10000000	5000000	5000000	
Fencing green areas	number	28	40000	1120000	560000	560000	
Planting on green areas(seedling)	number	30000	15	450000	225000	225000	
Construction stone chair	number	50	10000	500000	250000	250000	
Install water pipe	number	20	15000	300000	150000	150000	
Bamboo nursery establishment	number	7	657142	4600000	2300000	2300000	
Bamboo seedling production	number	3000000	1.6	4800000	2400000	2400000	
Bamboo a forestation on degraded land	ha	5110.019	273.97	1400000		1400000	
Awareness raising training on bamboo propagation	hhs	700	428.57	300000	150000	150000	
Bamboo promotion and market linkage	event	2	150000	300000	150000	150000	