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Federal Democratic Republic of Ethiopia
Ministry of Culture & Tourism
Authority of Research & Conservation of Cultural Heritage

ቁጥር
Ref.No. 01/14-1/028
ቀን 30 JAN 2018
Date:

Dr. Mechtild Rössler
Director World Heritage Center
7, Place de Fonteory
75352 Paris 07SP
France

SUBJECT: - Progress Report on the State of Conservation of the Lower Omo Valley heritage property

Dear Dr. Mechtild,

In accordance with Decision (41COM 7B,68) and your request dated on 29 July 2016, I am pleased to submit a progress report to the World Heritage Center for examination by the World Heritage Committee at its 42nd regular session in 2018. Therefore the progress report in the indicative format is enclosed to this letter for considerations.

I would like to once again reassure to the World Heritage Committee that the State Party of Ethiopia will continue to implement the World Heritage Convention (1972) to ensure the sustained preservation of outstanding properties of humanity.

Should you require any further information, we remain at your disposal.

The Federal Democratic Republic of Ethiopia Ministry of Culture & Tourism * Authority for Research & Conservation of Cultural Heritage *

Sincerely Yours,

Yonas Desta
Director General

Cc:
- Office of the Minister
- Office of the State Minister for Culture Ministry of Culture and Tourism Ethiopia
- SNNP Culture and Tourism Bureau Hawasa
- Permanent Delegation of Ethiopia Paris

ስ/ቁ +251 11 154 00 44 | ፋክስ / Fax / +251 11 154 00 33 | ኢ-ሜይል / E-mail / :- crcch@ethionet.et
Tel.No. +251 11 154 00 54 | የመ.ሣ.ቁ / P.O.Box/ 13247 | ዌብ ሳይት / web site: www.arcch.gov.et

Government of Ethiopia

STATE PARTY REPORT ON THE STATE OF CONSERVATION OF LOWER VALLEY OF THE OMO (Ethiopia) PROPERTY (C17)

IN RESPONSE TO THE WORLD HERITAGE COMMITTEE DECISION: 41 COM 7B.68

FOR SUMBISSION BY 1 FEBRUARY 2018

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Appendixes

Decision: 41 COM 7B.68 in Kradow, 2017

Lower Valley of the Omo (Ethiopia) (C 17)

The World Heritage Committee,

2. Having examined Document WHC/17/41.COM/7B,
3. Recalling Decisions **37 COM 7B.39** and **40 COM 7B.11** adopted at its 37th (Phnom Penh, 2013) and 40th (Istanbul/UNESCO, 2016) sessions respectively,
4. Reiterates its request to the State Party to provide adequate details of the Ethiopian Sugar Development Corporation Project (Kuraz project), including clear and precise information on its scope and location as well as information on the relocation of pastoral communities, in relation to the property as a matter of urgency and by **1 December 2017**, as requested by the Committee at its 38th and 40th sessions, respectively in 2014 and 2016;
5. Whilst welcoming the commencement of the EU-funded project that will address tourism development, property boundaries, legal protection and management, including risk preparedness and community involvement, urges the State Party to give priority to delineating boundaries as the outcomes of this work are needed to underpin the Heritage Impact Assessment (HIA) of the Kuraz project and the Management Plan, and to agree as soon as possible on a timeframe for the completion of the boundary work;
6. Notes the late submission of the HIA of the Kuraz project and request the State Party to liaise with the World Heritage Centre and the Advisory Bodies in its review to ensure that the HIA is compatible with accepted international standards and with the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties, and that the HIA is based on defined property boundaries and on clear and adequate and detailed information concerning the Kuraz project;

7. Also noting the scale of the ongoing Kuraz project, its potential direct and indirect impacts on the property, reiterates its request to the State Party to finalize and submit the EIA on the Kuraz project;
8. Finally requests the State Party to submit to the World Heritage Centre, by **1 February 2018**, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 42nd session in 2018.

Executive Summery

In response to the World Heritage Committee Decision **(41 COM 7B.68)** at its 41st session in held Kradow in 2017, the State Party of Ethiopia submits this progress report on the State of Conservation of the Lower Omo Valley World Heritage Site.

The report provides clarifications for the requests of the World Heritage Committee decision on the Kuraz Sugar Development Project (KSDP), taking into account the scope and coverage of the Project, which was brought about by the government of Ethiopia in the Southern Nation, Nationality and Peoples Regional State. The reports furthermore provides the advancement made in terms of the Environmental Impact Assessment of the KSDP, to measure the level its direct and indirect impact on the Lower Omo Valley world heritage property

The progress report also makes available the development of the European Union-funded PRPHEDEV Project, which is expected to establish the site's management system and legal protection along with site promotion and local community benefits. This report will be available for examination by the Committee at its 42nd session in 2018

As a follow up to the decision of the World Heritage Committee, the State Party of Ethiopia has been committed to work on the concerns raised by the Committee and will carry on to implement the World Heritage Convention.

1. *Responses of the State Party to the Decision of the World Heritage Committee*

This progress report responds to the requests of the World Heritage Committee decision **(41 COM 7B.68)** and associated concerns regarding the management and protection of the Lower Valley of the Omo, World Heritage Site as well as of development topics related the Kuraz Sugar Development in the area. The report is made available for examination by the Committee at its 42nd session in 2018.

1.1 Paragraph 3 - Request for adequate details of the Ethiopian Sugar Development Corporation Project (Kuraz project);

The Kuraz Sugar Development Project (here after Kuraz Project) is one of the projects managed under the Ethiopian Sugar Corporation. The Project is initiated by the Ethiopian Sugar Corporation in the Southern Nation Nationalities and Peoples Regional State in the South Omo district. The Project involves sugar cane plantation, construction of small scale housing units and small scale access road constructions.

The KSDP has been intended to construct four sugar mill factories where the first two factories (the Kuraz I and II) are located in Selamago Woreda on the left bank of the River Omo. The Kuraz III is located well in Maji Surma and Menit Shasha Woredas within the Bench Maji Zone and Decha Woreda within the Kaffa Zone. The Kuraz V is rather found in Nyangatom Woreda, on the right bank of the Omo River.

The KSDP was originally envisioned to develop 175,000 hectares of land and construct 5 processing factories. Seeing the productive nature of the project area, the government

of Ethiopia was convinced to revise the original KSDP plan with the objective of developing only achievable size of the Project, which was reduced to the total cultivable area size of 100,000 hectares. The revised Kuraz Sugar Development Project (KSDP) is also aimed at the total construction of four sugar processing factories to address the existing sugar demand-supply gap in the country.

Consequently, the revised KSDP integrated development scheme was comprised of three sugar processing factories (Kural I, II and III) with daily cane crushing capacity of 12,000 ton per day (TCD) and an annual production capacity of 150,000 tons of sugar, ethane and co-generation facilities. Furthermore, one sugar processing factory (Kuraz V) with daily cane crushing capacity of 24,000 ton per day (TCD) and an annual production capacity of more than 300,000 tons of sugar with ethanol and co-generation facilities was considered. Detail description of the KSDP has been enclosed to this report for further information. See also Annex-1. Likewise, the location of the Kuraz Sugar Development Project in relation to the Lower Omo Valley World Heritage Site has been updated and enclosed to this report for further review by the World Heritage Committee. (See also Annex-2)

***1.2* Paragraph 4 -** Urging the State Party to give priority for the delineation of boundaries the property, arranged within the framework of the EU-funded project to underpin the Heritage Impact Assessment (HIA);

In the framework of the European Commission supported project, for 'Promoting the Contribution of World Heritage for Sustainable Development and Reinforcing Capacities for Protection and Conservation of Paleontological Sites in Ethiopia' diverse sub-projects have been under implementation since 2016.

In its unique mandate of working in the sector of culture, Addis Ababa UNESCO Liaison Office is implementing the project on the intervention areas associated with the World Heritage Sites of the Lower Valley of Omo (LVO) and the Lower Awash Valley World Heritage Sites. These interventions are derived from the sub-project for "Promoting the

Contribution of World Heritage for Sustainable Development and Reinforcing Capacities for Protection and Conservation of Paleontological Sites in Ethiopia".

The prehistoric site of the Lower Valley of Omo, where many fossils have been found, most notably *Homo gracilis,* of paramount importance for the study of human evolution, is popular worldwide. The Site was put on the List of World Heritage by UNESCO in 1980. The LOV is rich in its fossil remains and tools dating back from 2.5 million (*Australopithecus robustus* and *gracilis*) to 3 000 years, which help to screen the evolutional records of humankind towards modern history.

The sub-component of the project aims at enhancing site protection and promotion of the property, tourism development and community support. To accomplish these objectives, a baseline survey, on the identification of local resources, boundary delineation, site management and legal framework, has been carried out by local consultants.

Anchored in the outcomes of the baseline survey, important stakeholder of the site, particularly researchers working in the Lower Omo Valley have been asked for comments of the survey results of boundary delineation and site protection. Accordingly they have technically reviewed the survey results and gave us their important feedback on the outcome of the survey. Similarly, the survey outcomes have been sent to the World Heritage Center for review and the State Party is very thankful for the technical review of the document by the Advisory bodies of the World Heritage Committee.

Based on the feedback obtained both from the researchers and Advisory Bodies, the boundary demarcation are being carried out by the Ethiopian Mapping Agency to finalize of the property delineation and then to produce appropriate maps of the property..

1.3 Paragraph 5 - Request the State Party to liaise with the World Heritage Centre and the Advisory Bodies in its review to ensure that the HIA is compatible with accepted international standards;

The State Party had submitted an amended Heritage Impact Assessment for the proposed Kuraz Sugar Development Project in South Omo Zone to the World Heritage Center for on 9th June 2017. In return, the State Party has received with thanks the feedback of the Technical review of the amended HIA by the ICOMOS in November 2017.

In accordance with the feedback obtained from the technical review of ICOMOS, the State Party is working to avoid every possible development impact that could affect the world heritage property. To this end, the Ethiopian Mapping Agency has been engaged in the boundary delineation of the property.

1.3 ***Paragraph 6*** - Request to the State Party to finalize and submit the EIA on the Kuraz project;

To finalize the EIA of the Kuraz Project, the assignment has been committed to local consultants and Scooping report had been produced for review. The final Scooping report therefore is enclosed to this report for further information.

2. Other current conservation issues identified by the State(s) Party (ies). N/A

3. Updates on any potential major restorations, alterations and/or new construction(s) intended within the property, the buffer zone.
   N/A

4. Public access to the state of conservation report.

   The State Party Ethiopia is most willing to make this Statement of Conservation Report open for public access.

5. **SIGNATURE ON BEHALF OF STATE PARTY**

Full name Yonas Desta Tsegaye

Title Director General

Signature Yonas Desta Director General

Date

Ethiopian Sugar Corporation

DESCRIPTION OF KURAZ SUGAR DEVELOPMENT PROJECT

Sugar Corporation
Addis Ababa

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1. Introduction

A national survey conducted regarding the sugar sector has confirmed that Ethiopia has more than 500,000 hectares of land suitable for sugarcane development. And, the abundant water resource, suitable climate and untouched fertile as well as irrigable land needed for the sector which the nation is naturally endowed with have demanded a strategic plan that has enabled the country to utilize this huge potential effectively. Accordingly, the first Five Years Growth and Transformation Plan (GTP) the Federal Democratic Republic of Ethiopia (FDRE) government had set were highly cognizant of these potential of the nation for the sector.

The sector is one among other key development issues, in the long run, believed to play a pivotal role in transforming the country's economy to the level of those countries with middle income. This is because that the ten new sugar factories the nation had planned to build at the start of the GTP and been actively engaged in together with the concluded expansion projects on its existing sugar factories help the nation a great deal in not only doing away with the import of sugar but also enable it to export sugar to the international market in the very near future.

Moreover, the wide job opportunities the sector was proved capable of creating to citizens of the nation and the electric power these factories will in the end generate and send to the national grid will also play a significant role to the country's move to become an economy of industry-led one. Therefore, as the sector is an indispensible one to the effort the country has aggressively been exerting to get rid of poverty, it has, since at the outset, won the full commitment of the FDRE Government. And, to attain the aforementioned goals with regard to the sector, the nation has been actively engaged in building ten sugar factories since the kickoff of the First GTP.

2. The Project Background

Kuraz Sugar Development Project is aimed at establishing an integrated sugar development by establishing four sugar factories. According to the revised plan of the sugar development sector the command area of the project selected for the construction of those four sugar factories, one has a capacity of crushing 24,000 ton of cane per day (TCD) and the rest three with a capacity of crushing 12,000 ton of cane per day (TCD) individually, are 100,000 hectares where now cane cultivation is going on. The landscape of the selected sugarcane cultivation field is a plane one making cane farming through canal irrigation much convenient.

The factories are found under different level of construction and recently kuraz 2 has starting sugar production. Among the total four one i.e. factory 5 will work with 24,000 TCD (ton cane per day) and is capable of producing 556,000 tons of sugar and 52,324 meter cube ethanol a year while the rest which are factory 1,2 and 3 will work each with 12,000 TCD(ton cane per day) and are capable of producing 278,000 tons of sugar and 26,162 meter cube ethanol a year individually. While reaching their maximum crushing capacity, all together will be able to produce 1,339,000 tons of sugar and 130,810 meter cubic ethanol annually.

The project site can be reached by the 905 km from Addis Ababa – Arba Minch – Jinka - Hana village which is the nearest settlement center. Geographically, the entire project area is located $5^0$8'18" – $6^0$16'59" N latitude and $35^0$43'37" – $36^0$13'54"E longitude i.e., between UTM, 568 698 m – 695 365 m N and 137,256m – 193 226 m E.

The left bank development area is composed of 15,000 ha gravity and 23,000ha pump irrigation schemes. Only the gravity scheme is currently under construction, which is partially planted with cane and partially covered with maize for the pastoralist community of the surrounding area. This command area is found in Left bank of Omo River at north east part of the Kuraz Sugar Development Project. It is specifically located between $5^0$50'00" – $6^0$16'56" N latitude and $35^0$56'4" – $36^0$07'00"E longitude i.e., between UTM 645 000m – 695 269m N latitude and 160 673 m – 180 000 m E longitude. The nearest town is Hana located on the left side of Omo River about 120 km southwest of Jinka town.

The topography at left gravity scheme command area of Kuraz sugar development project is considered as plain with an elevation ranging from 476 m above sea level at the head of left bank main canal to 430 m above sea level at tail end of the irrigation command area. The slope is flat with a slope of less than 2 per cent in most places.

Regarding to Kuraz Sugar Development Project in the Right Side command area, only Block 1, which is specifically situated at north western part of the project covering the Right bank areas of the Omo River is located between 150 223 and 167 443 UTM East and between 655 166 and 679 135 UTM North. It has an estimated distance of about 918 km far away from Addis Ababa and 700 km far away from Hawassa town, the capital of the Southern Nations, Nationalities and Peoples Regional State of Ethiopia.

According to land evaluation report, the gross area of land in Block I, Right Side of Kuraz Sugar Development Project is 46,000 ha. However, based on the current soil evaluation only 32,000 ha potentially suitable area of has been identified in the project area. But out of the land suitable for cane plantation, only 22,000 ha is planned to be developed with sugarcane in Block I. Some area will be used for developing maize for pastoralists in the local areas. Some part of the block bordering the Omo National Park is reserved for wild life.

The other area planned for future sugar development is in Block II of Right bank area with a total net area of not more than 40,000 ha to be planted with sugarcane. This Block is found immediately downstream of Omo National park. The area to be used for sugarcane plantation in this Block will be delineated after soil suitability and other relevant studies are finalized.

3. Main Features of the Project

Item	Data
Project commenced	2010 G.C
Planned Construction period.....	15 years
Total Proposed Sugarcane area	About 100,000 ha
Head work type	Diversion Weir
Main canals.....	Two main canals
Left Bank main canal.....	65 km (under construction remaining about 20 km)
Right Bank main canal	145 km (under Construction)
Secondary and tertiary canals	2171 km
Drainage canals.....	1384 km
Access roads.....	2610 km
Land for camp &factories.....	300ha
Cane planting started	2011
Cane planted area till December, 2017.....	14,000 ha
Proposed residential towns and villages..	4 main towns, 10 sub head towns and 40 villages
Housing & facilities constructed till June, 2017.....	1,016 residential houses
Associated services and infrastructures...	11 non-residential blocks (Schools, hospitals, etc)

4. The Project Area Distribution

The sugar development project is located in South Nations Nationalities and Peoples Regional State (SNNPRS) Lower Omo Valley area in Selamago and NyangatomWoredas of South Omo, in Maji and Meinit ShashaWoredas of Bench-Maji and in DechaWoreda of Kefa Zone. The project Command Areas are distributed in these three zones.

The distribution of the command areas delineated for the Sugar Development Project is as follows: about 78% is in South Omo Zone, 21% is in Bench Maji Zone and 1% in Kefa Zone. The project command areas distribution by Woreda is 42% delineated in Nyangatom and 36% in SelmagoWoreda of South Omo Zone; 21% is in Meinit ShashaWereda of Bench Maji Zone. The rest 1% of the command area is in Decha Wereda of Kefa Zone.

5. Project Location and Accessibility

The project command areas lie in Selamago, Nyangatom, Decha, MeinitShasha and Maji woredas. SelamgoWoreda is on the left side of Omo River course where the diversion weir site is situated. It is accessible by a dry weathered road from Jinka, the capital of South Omo Zone.

Other Woredas of the project command areas; Nyangatom, Decha, MeinitShasha and Majiworedas, are found on the right side of Omo River. They are accessible to each Woreda capitals through Jima-Mizan-Jemu-Tum-Kibish and Kangaten. Except the road from Surma-Kibish to Nyangatom-Kibish, all the project commands areas of NyanagatomWoreda are accessible during dry season.

6. Access Roads and Bridges

To properly implement construction and operation work of the proposed project roads and bridges are essential. The following infrastructures construction is started and will be completed up on the progress of the project:

- Roads for sugar transportation from the factories
- Access roads along Right and Left Main Canals,
- Access roads along secondary canals
- Access roads to community villages

- A number of bridges and culverts will be constructed as construction of the scheme will necessitate construction of new road bridges and roads.

7. Sugar Factories

OmoKuraz-2 Sugar Factory

One among the four sugar factories planned to be constructed at Kuraz Sugar Development Project i.e. Omo-Kuraz-2 Sugar Factory with 12,000 TCD has started production in March, 2017. The construction work of the Factory is being carried out by a Chinese Company-COMPLANT.

OmoKuraz-1 Sugar Factory

Omo-Kuraz-1 Sugar Factory with similar crushing design capacity has carried out trial sugar production by end of June, 2017. Metals and Engineering Corporation, a government institution, is carrying out the factory construction work.

OmoKuraz-3 Sugar Factory

The construction of the third sugar factory i.e. Omo-Kuraz-3 Sugar Factory is expected to be completed construction work and start commissioning till June, 2018. Same Chinese company-COMPLANT is constructing the construction work.

OmoKuraz-5 Sugar Factory

The construction work of the fourth sugar factory which is expected to enter to regular production in 2020 with 24,000 TCD has begun a few months before the end of 2016. The factory construction work is being carried out by-Chinese Company known as JJIEC.

Those Four factories buildings will be constructed with associated structures including offices, residential houses and other social services acquiring an area of about 300hectare. The overall needed associated features, facilities and services such as electricity, water supply, social services and sewerage systems will be provided for the residents and employees of the sugar factories.

8. Housing Infrastructure

In Each factory project will have a plan to build main town, sub head town and agricultural villages. According to this plan Factory1, 2 and 3 will have one main town, two sub head towns and eight agricultural villages each. Factory 5 will have one main town, four sub head towns and sixteen agricultural villages upon completion. Til1 June, 2017 a total of 1016 residential houses and 11 blocks of non residential houses were already construct.

9. Benefit of the Project for the local Communities

The Federal Democratic Republic of Ethiopia Government, while launching Kuraz Sugar Development Project and also other projects gave priority to all forms of benefit of natives of the project areas. Accordingly, prior to the inception of the project, the Government had held successive discussions with the locals of the area as well as the concerned people and had started running the project getting their full consent.

As the majority of the people living around the command area of the project were pastoralists leading their lives wandering around searching for grazing land and water of their cattle there had never been any resettlement program around that had caused displacement. What in fact there is a villagization program with willing natives.

And, it is with the inception of Kuraz Sugar Development Project that locals around the project areas got the privileges of various infrastructures and social services such as schools, road, health stations of both human and cattle, flour mills, potable water, ponds, cattle-crossing structures, irrigable land, etc. There are about 167 students enrolled at Aligobiya Elementary School which was established in 2011/12 and found at Selamago District of Village Two. And in June, 2017 the first enrolled have completed fourth grade schooling.

Hence, the youth of these pastoralists have now got the chance to be enrolled in schools constructed around while other social service institutions built at their localities have made the lives of all natives of the project area much easier.

Moreover, to enable the locals become semi pastoralists, Ethiopian Sugar Corporation has made irrigable land ready to them. And, as the natives of the command area were unfamiliar with

farming specially plowing, the Corporation had delivered farming skill training program which now-a-days has enabled them to cultivate crops of their own choice.

The successive experience sharing programs of natives travelling to one of the nation's pioneering sugar factory, WonjiShoa Sugar Factory, has brought about attitudinal shift from the locals so that they became more eager to see the factory under construction at their place start producing sugar. And they have now seen their dreams being realized with the Omo-Kuraz-2 Sugar Factory entering into production.

Natives of the project area, organized in sugarcane out growers associations and cultivating cane, are now ready to supply it to the Omo-Kuraz Sugar Factory Two which has started production. Till to date sugarcane out growers organized in three associations which have 1,067 members in total are cultivating cane at 864.75 hectares of land of the Project.

Training of natives of the project area as well as the surrounding locals in various skills such as tractor operation, machine operation and other professions relevant to the sugar development sector is the other approach made to benefit the local communities.

These all were possible for they voluntarily join the villagization program the SNNP Regional Government has conducted and become settled at villages with every facility made ready by the corporation prior their arrival. It must be clear enough here that the villagization program that emanates from the nation agricultural policy and aims at bringing about the countries self reliance on food is being carried out in all the region including the command areas of the project.

Therefore, around the project in each factory areas there is a plan to construct local community villages. Each village has their own social services and infrastructures. Around Factory 1 three villages and factory 2 two villages were construct and ready for Bodi and Mursi natives respectively. While in the Factory 3 region four village sites are identified and social services construction is undergoing for Surma, Meanit and Dezi natives. In around factory 5 region village site will be identified and social services will be constructed for Nyangatom natives up on the progress of the project.

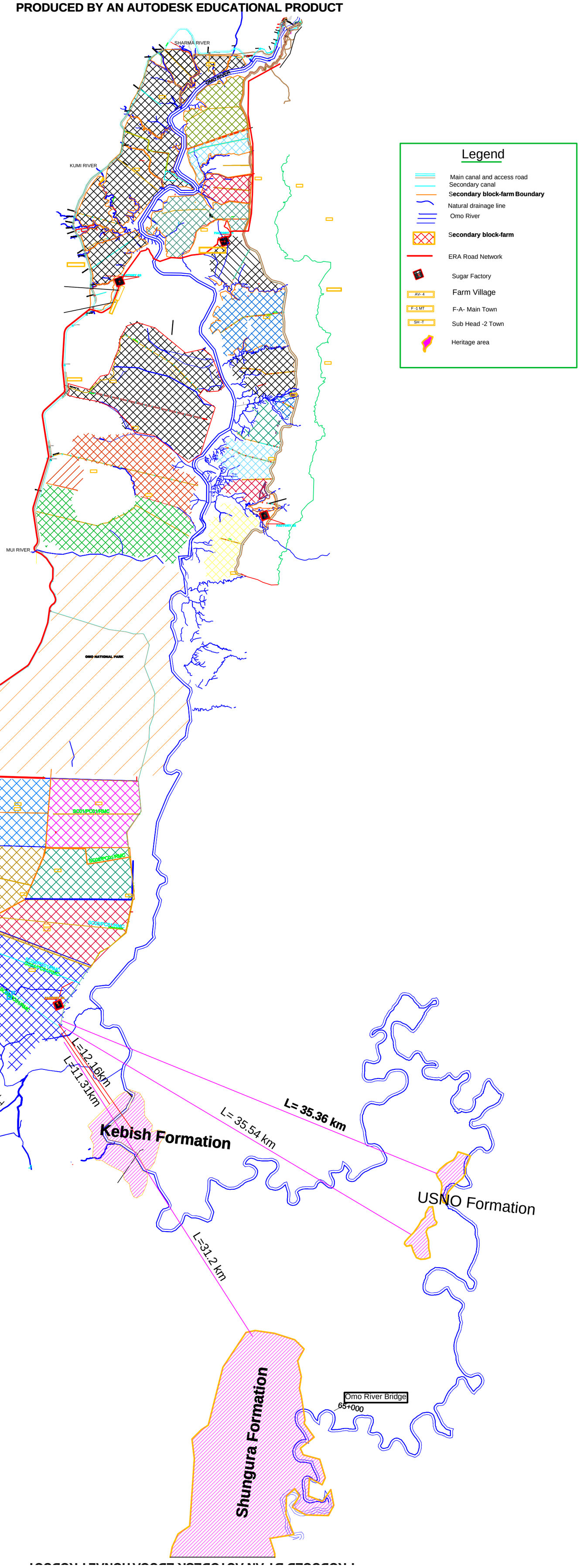
10. Lower Omo Heritage

Lower Omo Heritage area is found along Omo river banks and the project has no any potential impact on the heritages. The distance from the end of farm block to the Heritage area is discussed below.

Kibish– It is found in the Nyangatom Woreda and about 12 km far from the command area and not threatened by the sugar development projects.

Usno- – It is found in the Nyangatom Woreda and about 35 km far from the project's command area and there is no threat from the sugar development projects.

Shingura-It is also found in the Nyangatom Woreda like that of Usno. It is about 31 km from the command area and there is no threat from the sugar development projects.



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FDRE SUGAR CORPORATION

EIA Review,Study and Validation forKuraz Sugar Development Project

Final Scoping Report

Submitted to:FDRE Sugar Corporation

by

Position	JVs Partner Consultants' Addressees	Nationality
Leader	Lead Consultant ,Name: Ejigayehu Global Trading and Development Consultancy PLC , Address: Addis Ababa, Sub City; Bole , Wereda:03 : Kebele: 03/05-, H.No 375/Room No 201,Telephone:0118502600, E-mail:-taessey@yahoo.com, Addis Ababa ,Ethiopia	Ethiopian
Partner	Name: ABEL Development & Protection Consulting PLC Address: Addis Ababa, Sub City; Bole , Wereda:03 ,Megenagna ,SleshiShen Business Center, 6 th floor ,Room No 603,Telephone:- 0911220275/0911666795,E-mail:-abebet2004@gmail.com,Addis Ababa ,Ethiopia	Ethiopian
Partner	Name: Hydroland Consulting Engineers , Address: Bole Sub City, Werda 07, H.No-New,, Addis Ababa ,Ethiopia; Telephone:-0911259586/87;E-mail:admin@hydroland.co.uk	Ethiopian

ADDIS ABABA, ETHIOPIA
NOVEMBER, 2017

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Major List of Acronym/Abbreviations

^{O}C	Degree Celsius
E	East
EFY	Ethiopian Fiscal Year
EPA	Environmental Protection Authority
EIA	Environmental and Social Impact Assessment
FDRE	Federal Democracy and Republic Ethiopia
g	gram
GIS	Geographic Information System
GTP1	Growth and Transformation Plan 1
hr	hour
ha	hectare
m	meter
masl	meters above Sea Level
IL	International Labor Organization
MoEFCC	Ministry of Forest, Environment and Climate Change
MoLSA	Ministry of Labor and Social Affairs
MoWIE	Ministry of Water ,Irrigation and Electricity
m/s	meter Per Second
mm	Millimeters
MoA	Ministry of Agriculture
SNNPRS	Southern Nations and Nationalities People Regional State
TCD	Total Crushing per Day
UN	United Nation

EXECUTIVE SUMMERY

The scoping report of this EIA is designed to identify the major stakeholders and their engagement extent; the project and project area descriptions; the potential impacts of the project and its alternatives; policy, legal and institutional frame works; and the proposed methodologies to be applied in the EIA Review, Study and Validation for Kuraz Sugar Development and related ones.

The assessment has conducted stakeholders' discussions; and reviews of the former EIA, sectorial and environmental laws and guide lines, and other relevant documents. The report is more developed through the technical (constructive suggestions and comments) contributions of the stakeholders stated in main body of the report and reached common consensus with them on how to proceed the EIA. The stakeholders, and potential environmental and social impacts and its alternatives are identified and elaborated in the report.

Some of the findings which were not in the former EIA are the revision works on the development project were done, the net irrigation land was condensed from 175,000ha to 100,000 ha and the factories reduced from 5 to 4. Currently, two of the factories are at the status of production (factory 1&2) ,one at commissioning(factory 3) and another one will be completed its first phase and start commissioning by the next year. The revised activities have impacts on increasing the water balance of the down streams, harmonize international environmental conflicts, decrease the number of affected people, and protect heritages, archaeological and biological effects of the area, decreases project costs and others.

Another one is no settlement found in the project area (may be due to pastoralist nature). However, at present moment, the Corporation involves in the settlements' plans of the government (ten community villages) by providing health centers, schools, roads, both potable and farming waters and others.

The scoping report consists in the main body are descriptions of the project and project areas, potential environmental and socioeconomic impacts and its alternatives, applicable environmental legislative and institutional framework, stakeholders' consultation, compilation of baseline description, proposed methodologies for EIA, and related ones.

Finally, we believe that the scoping report will pave the ways to optimize the economy benefits of the project by harmonizing possible negative environmental and social impacts in the project, surroundings and downstream areas. Besides, it provides a green light to win –win solutions by minimizing the conditions which lead to "no-go" option of the planned project through proposed mitigation measures.

1. INTRODUCTION

1.1 EIA Overviews

The development of sugar industry including Kuraze Sugar Development Project has its own roles in boosting the economy of the country through saving /gaining foreign currency ie import substitution/export rising ;narrowing the local demand and supply gap of the products; creating job opportunities(improving incomes); transferring technologies; it's by-products use for generating steams and electricity (baggasse) , production of ethanol/use for industrial, medicine, fuel (by mixing with petrol) and drinking purposes/, and for livestock feed ; and others.

On the other hand, giving attention on the environmental ,health and social activities in relation to the stated project are also crucial in reducing international political/water conflicts such as on Omo River, promoting indigenous community interactions/reducing local conflicts, protect cultural/heritages, create better working and labor conditions including health& safety issues , moderate flooding, create environmental friendly designs ,constructions and operations of the factory and plantation processes ,and encourage settlement and infrastructure development of the area.

EIA is an instrument for an effective environmental and social protection program of any planned new / expansion or modification of existing large/medium scale industries.

The major objectives of EIA are, but not limited to:-

- ensure that environmental considerations are explicitly addressed and incorporated into decision making process;
- incorporate environmental issues into project design, execution and operation;
- identify that biophysical and social impacts ;
- anticipate and avoid, minimize or offset the adverse significant biophysical, socio economy and other relevant effects;
- enhance the positive impacts of the proposed project;
- protect the productivity and capacity of natural systems and the ecological processes , which maintain their functions;
- promote development that is sustainable and optimizes resource use and management opportunities, etc

FDRE Sugar Corporation needs Full EIA Review, Study& Validation for Kuraze Sugar Development Project which fulfills the local and international standards, which are acceptable by UN, World Class Institutions (World Bank(WB),Africa Development Bank (ADB), etc) and concerned governmental bodies (Ministry of Foreign Affairs, MoWIE, MoEFCC and others).

1.2 Brief Purposes of the Scoping Report

The purposes of this scoping report are to review identification of boundaries of EIA studies, important issues of concerns, significant effects, reasonable alternatives and factors to be considered based on the aforementioned environmental laws and guidelines.

1.3 Structure of the Scoping Report

The structure of the scoping report consists of introduction, descriptions of the project and its alternatives, applicable environmental legislative and institutional framework, stakeholders' consultation, compilation of baseline description, proposed methodologies for EIA, timeframe and resources needed to carry out the EIA, major references and appendices.

2. DESCRIPTIONS OF THE PROJECT, POTENTIAL IMPACTS AND ALTERNATIVES

2.1 Project Descriptions

The annual per-capita per annum sugar consumption of the nation is low, about 5 kg, and40% of the consumption or effective demand is covered by imported ones. FDRE Sugar Corporation has a plane to increase the local production so as to minimize the local sugar shortages, to stop importing and at large to export sugar.

During the period of GTP1(2010), FDRE Sugar Corporation in collaboration with the Ministry of Water Irrigation and Electricity has identified a gross area of 1.5 million ha of land that is suitable for large scale irrigated sugar development so as to establish ten new sugar factories including Tana Beles(3), Arjo-Didessa(1), Wolkait(1) and Lower Omo Kuraz (5) sugar development projects.

The large-scale sugar development scheme in Lower Omo Valley ,SNNPRS, that uses Omo River, has an aiming at developing sugarcane plantations on net land of 175, 000(revised to 100,000) hectares and establishing 5 (revised to 4) sugar factories in order to address the existing the nation sugar constraints.

The challenges for the implementation of the project have been many such as financial constraints, resistant from the environmental extremists, and others. The government has been doing important things to mitigate the problems such as downsize the project, creates awareness about the project (international wide), reviewing the former EIA and others. The annual anticipated total production of sugar ,as to the revised plan, will be 1,390,000 tons ; and from its byproducts 130,810 meter cube ethanol and 295 megawatt electric power can be generated (100 will be used in the project areas and the remains (195) megawatts will go to the national power grid).

2.2 Project Area Descriptions

2.2.1 Location, Boundaries and Accessibility

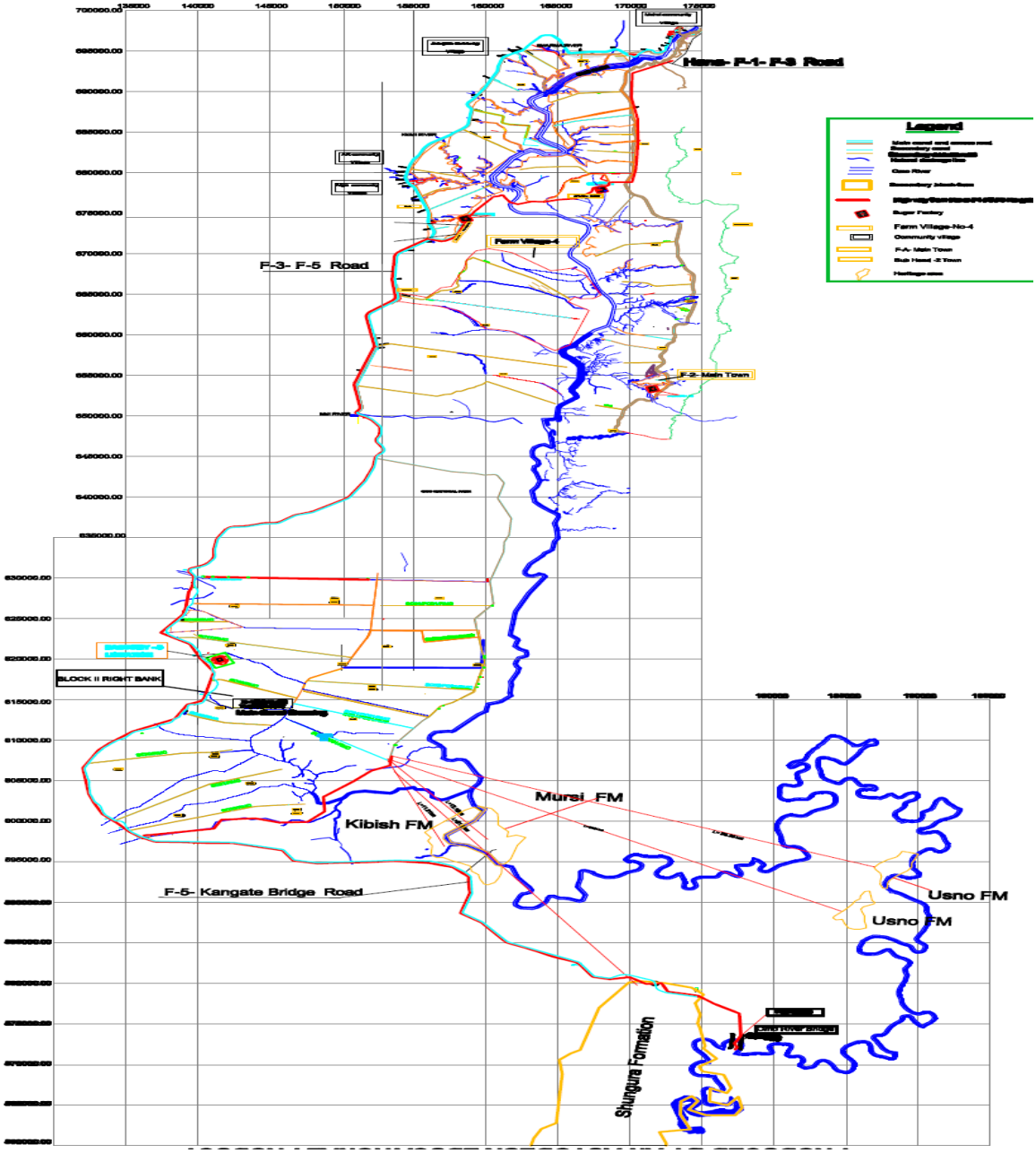
The Omo Kuraz sugar development project is found in SNNPRS between $5^0$8'14''- $6^0$17'3''N and $35^0$43'44''-$36^0$13'39''E within the ranging of 373 to 477 masl.

The revised project area net land 100,000 ha was delineated to 36.2% in Nyangatom and 20.9% in Selamago Weredas of South Omo Zone, 38.2% inMaji Wereda(Omo National Park)and

3.5% in Menit Shasha Weredas of Bench Maji Zone , and 0.6 % in Decha Wereda of Keffa Zone. As a result, this EIA review will be done on the mentioned Weredas.

SelamagoWereda is found on the left side of Omo River where the project site is located. It is accessible by a dry weathered road from Jinka, the capital of South Omo Zone where as the remaining Weredas are found on the right side of Omo River. The Weredas' capitals can be accessible through Jima-Mizan-Jemu-Tum-Kibish and Kangaten. All the project areas found in Nyangatom Wereda are accessible during dry season.

Figure 1: Map of Kuraz Sugar Development Project



Source : FDRE Sugar Corporation

2.2.2 Brief of the Project Command Area and Land Use & Land Cover

The revised plan consists of total gross land of net 100,000ha with four factories that are Maji 38.2%(factory 3), MenitShasha3.5% ,Selemago 20.9%(two factories(factory 1and 2)) ,Decha 0.56% andNyangatom 36.8%(factory 5). The former project command area of Nyangatom which is found below the project area(see the figure 1) gross land 81,329 ha (net 75,000ha) and one factory with a capacity of 24 000 TCD are excluded from the project.

The upper part of the project (consists of 3 factories(factory 1,2 and 3) is found in the upstream of Omo National Park between the park and the weir site in both sides of Omo River course. The left side is dominated by open grassland and followed by dense bush land. The right side is significantly covered by riverine forest.

The lower part of the project area includes ranging from the lower boarder of the upper part (consists of factory5) including Omo National Park to the bottom of project area. Bare soils cover dominantly and followed by open bush land and open grassland.

2.2.3 Brief of Farm Layouts and Irrigation & Drainage Canals

The project plantation will get its irrigation water from the Omo River through a diversion weir. The water requirement for the development of Omo Kuraz sugar development project for 150, 000 ha was also calculated at about 5.2 BM3/annum.

There are designed main canals on both sides of the project areas. The lengths of right and left main canals in their respective orders are 172 kms with 234 m3/sec and 62 kms with 62 m3/sec discharge rates.

Secondary canals will take irrigation water from the main canals into the command area which will run for 24 hours per day.

Water from the secondary canals would be delivered to standard size irrigation plots by unlined tertiary canals. There are different irrigation methods such as furrow (surface), drip, sprinkler, pivotal and others. The irrigation method that has been using for this project is furrow irrigation.

The project drainage canals' systems evacuate excess water from quaternary units which in turn discharge in to tertiary drains and the next step go to collector drains, and lastly to the river system.

2.2.4 Factories and Manufacturing Processes

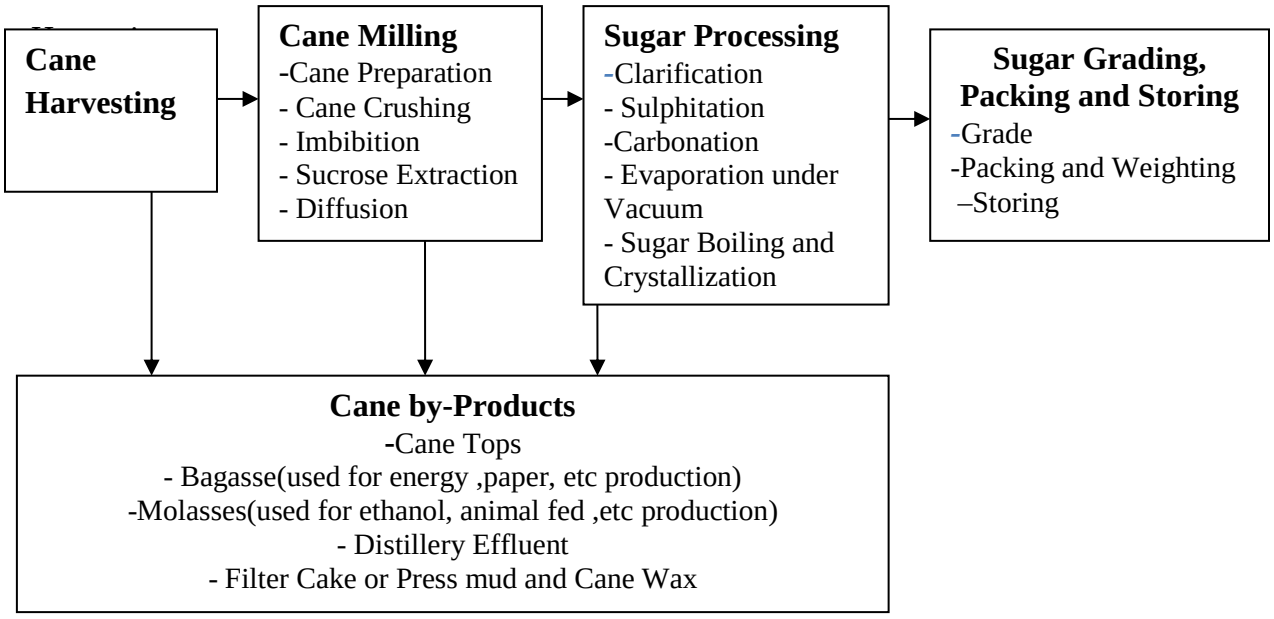
The maximum crushing capacity of Kuraz sugar development project, four sugar factories, will be 60 000 TCD (two factories with a capacity of each 12 000 TCD on the left bank(factory (Omo) 1& 2)and one (factory 3) with a capacity of 12 000 TCD in right bank of the upper project area; and one number (factory 5) with a capacity of 24 000 TCD found in the lower part of the project area (see figure 1).

The main raw materials used for production of sugar can be sugarcane, sweet potato and others. In this project the main raw material for sugar production is sugarcane. There are buds at each segmented stalk of sugarcane and when it mature small flowers seen at the top of the plant. Fertilizers and chemicals for weeds are applied during sugarcane cultivation process. Sugarcane fields are frequently weeded to attain optimum productivity. The optimum harvesting time of the cane varies from 8 - 22 months due to different factors such as types of soils ,cane varieties, land management ,etc.

The annual production of sugar will be 1,390,000 tons; and from its byproducts 130,810 meter cube ethanol and 295 megawatt electric power can be generated.

The major process of sugar production consists of the following major steps:-

Figure 2: Sugar Production Process



The designing works of the whole project were completed but the updating works especially on the farm lay outs are expected to be continuous. The revision works on the development project were done, the net irrigation land was condensed from 175,000ha to 100,000 ha and the factories reduced from 5 to 4. In this budget year (2010 EFY), factory 1&2will start its operation including production, and in the same year the construction/installation works of factory3 will be completed and start commissioning (testing production). Factory 5 is under construction and hoping that to be completed its first phase and start commissioning (testing production) in 2011 EFY. Factory 4 was excluded because of the revised plan.

2.3 Major Identified Potential Environmental and Social Impacts

2.3.1 Physical Environment Effects

The major effects are occurred due to disposal of excavated soil, increased soil erosion and sedimentation, generated solid wastes, impact on water balance and downstream environmental release, change in water quality, water logging and ground water rise. Eutrophication from released of nutrients, environmental degradations from increased pressure on the surrounding environmental resources, release of liquid wastes, air and noise pollutions and others are created in the construction and operation periods.

2.3.2 Biological Environment Effects

The effects are loss of vegetation cover and biodiversity, impacts on Omo National Park wildlife and other resources and their seasonal migratory movements, effects on aquatic ecology and creation of ecological imbalance. Proliferation of terrestrial plants and weeds, effects on rare and endangered species, etc are also expected to be major impacts on the environmental components of the project area.

2.3.3 Socio-economic Environment Effects

The causes of these effects are waterborne diseases, communicable and infectious diseases, malaria infestations, effects on water supply, sanitation and hygiene, settlement and loss of livelihoods, traffic hazards, pesticide poisoning, pressure on occupational health and safety, movement and access disruption, conflicts on resource uses, grazing land loss, impacts on social, cultural, historical, heritages, archaeological and recreational sites, pressure on biomass energy sources, impacts on women, etc.

2.4 Alternatives

The project location is highly favourable to sugar project development. The majority parts of the project command area are failed in Omo National Park. Implementable mitigation measures should be proposed to get win-win solutions for both the project and the park.

2.4.1 No Project Alternative

Do nothing alternative seems very unlikely from resource utilization aspects especially for a country (like Ethiopia) which suffers with deep poverty. It is expected from some extremists of

environmental issues who support such an alternative especially in relation to in such a cross boarder river, Omo River. However, the project can be go on by setting win -win solutions with environmental and socio- economy issues.

2.4.2 Down Size of the Project Development

The initial plan of the project was to develop the sugar plantation on net 175,000 ha but latter reduces to 100, 000 ha which in turn decreases the number of sugar factories from 5 to 4. It increases the water balance of the down streams, harmonizes international environmental conflicts, decreases the number of affected people, and protects heritages, archaeological and biological effects of the area, decreases project costs and others.

2.4.3 Designs and Layouts

It is one of the alternatives in reducing adverse environmental impacts due to the development of the project without compromising its benefits. Currently the design and layouts works are completed; however, during updating it or implementation time, environmental impacts should be considered continuously such as ecologically sensitive areas along the main, primary, secondary, tertiary canal system network, road and others.

2.4.4 Farm and Factory Technology Alternatives

i) Pressurized (Sprinkler or Pivotal and Drip) Irrigation

Sprinkler or Pivotal and Drip irrigation systems apply water to the entire irrigated area via a pressurized pipe through single or multiple nozzles. They can be used to supply adequate moisture for plant growth, as well as for crop cooling during dry months. The systems can also be used for the application of pesticides and fertilizers. Both Spray and Drip systems are excellent techniques for managing water efficiently, about 70% and 95% respectively, but requires high investment and operation costs and technical skills (more complex technology). This alternative may not recommend from financial view but has more advantages from the environmental aspect.

ii) Surface (Furrow) Irrigation

Furrow is a small, evenly spaced, shallow channel installed down or across the slope of the field to be irrigated parallel to row direction. It is relatively an inefficient system for managing water efficiently (50%). It requires relatively low investment and operation costs, and technical skills. It is the proposed irrigation system, by considering water availability and investment costs, for the project. The environmental problems can be reduced by recommended mitigation measures.

iii) Utilization of Improved Cane Varieties

Best cane varieties should be used by considering such as shorter harvesting time, high productivity, less water consumption, high capacity to resist weeding and pest side effects, less harvesting costs, environmental friendly and others.

iv) Different Manufacturing Process Alternatives

Different kinds of alternatives can be used in the manufacturing process of sugar in order to minimize the environment and social effects and at large to optimize the economic benefits of the project including state of art manufacturing technology, shorter product cycles, automation, etc. For instance, it could be maximized the potential use of bagasse to generate electricity by producing flexible proportions or mixes of commercial sugar, raw sugar and by products (different grades of molasses and filtered cake). If we consider the following five bagasse saving alternatives such as by producing 100% produce diluted juice, high-test molasses(clarified and partially inverted concentrated cane juice), raw sugar A(77 % of available raw sugar and type A molasses), commercial A and B raw sugar(89% of the total raw sugar and B molasses), and A and B commercial sugar & non-commercial C sugar(low-grade) and C or final molasses ; then the amount of surplus or saved bagasse are estimated to be 50 - 60 %, 25 -40% , 20 - 35 % ,10-30% and 5-20% of the total amount of bagasse needed to produce vapors, respectively.

3. BRIEF RELEVANT POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORKS

3.1 Policy Frameworks

3.1.1 Environmental and Related Polices and Strategies

i) Conservation Strategy of Ethiopia

The Conservation Strategy of Ethiopia (CES) sets out detailed strategies and action plans as well as institutional arrangements required for the implementation of sectoral as well as cross-sectoral interventions for the management of Ethiopia's natural, man-made and cultural resources.

ii) Environmental Policy

The Environmental Policy of the FDRE (EPE) supports constitutional rights through its principles. The principles are guiding all the development proposals in the country.

It emphasizes among others early recognition and incorporation of environmental issues and mitigation plans in project design and implementation, public participation in EIA process, development of EIA tools and capacity building at all levels of administration.

The governmental environmental responsible body, EPA, harmonizes Sectoral Development Plans and implements an environmental management program for the country.

iii) Water Resource Management Policy

The Ministry of Water, Irrigation and Electricity (former Ministry of Water Resources) produced in 1998 the Federal Water Resource Management Policy for a comprehensive and integrated water resource management.

It enhances and promotes all national efforts towards the efficient and optimum utilization of the available water resources for socio-economic development on sustainable basis.

It establishes institutionalized environment conservation and protection requirements as integral parts of water resources planning and project development.

iv) Wildlife Policy and Strategy

The Wildlife Policy and Strategy was developed by the former Ministry of Agriculture in 2005. The major objectives of the policy include:

- properly developing and administering the country's wildlife resources;
- capacitate the sector to contribute fully to the nation economy development process;
- protecting the wildlife resources and their habitats and
- maintaining the balance of nature for posterity in accordance with international wildlife conventions and agreements to which the country is a signatory.

v) National Policy on Biodiversity Conservation, Research and Development

The policy contains directives with regard to the need to explore, collect, characterize, evaluate, conserve and utilize biodiversity. Regulations of access to genetic resources through various measures including legislation and building appropriate institutional structures and mechanisms are also incorporated in the directives.

The policy provides guidance towards effective conservation, rational development and sustainable utilization of the country's biodiversity and contains comprehensive policy provisions for the conservation and sustainable utilization of biodiversity.

The government of Ethiopia has developed a National Biodiversity Strategy and Action Plan (NBSAP) in 2005 as a required action under the Convention on Biological Diversity to put in practice the biodiversity policy.

Besides, National Population Policy, Health Policy, National Policy on HIV/AIDS, National Policy on Women and other policies relevant to the study will be reviewed.

3.2Legal Frame Works

3.2.1 Constitution of the FDRE

The major residents in the proposed project area are pastoralists. Article 40(5) of the constitution indicates that Ethiopian pastoralists have the right to free land for grazing and cultivation as well as the right not to be displaced from their own lands.

People have the right to full consultation and the community has the right to express its views in the planning and implementation of environmental policy and to deal with the projects that directly affect them.

The displacement of people or adversely affect the livelihood of the local population shall give the right to commensurate monetary or other means of compensation including relocation (resettlement) with adequate State assistance.

All these aspects have to be considered in factory and irrigation projects as to explicitly stated in the EIA Legislation (EPA, 2002) and EIA Guideline Document (EPA, 2000).

3.2.2 Environmental Legislative Framework

i) Environmental Impact Assessment Proclamation

This Proclamation (Proc. No. 299/2002) aims to make an EIA mandatory for specified categories of activities undertaken either by the public or private sectors and is the legal tool for environmental planning, management and monitoring.

Categories of projects have been defined that will require full EIA, partial EIA or for which study of EIA is not called for.

EPA has issued Procedural and Technical EIA Guidelines which provide details of the EIA processes and its requirements.

ii) Environmental Assessment Guidelines

Environmental guidelines have been issued by EPA. Technical and procedural EIA guidelines were issued in 2000/2003. They are intended to guide developers, competent agencies and other stakeholders in carrying out EIA.

The procedural guideline details the required procedures for conducting an EIA, the permit requirements, the stages and procedures involved in EIA process and the roles and responsibilities of parties involved in the EIA process. It also includes the categories of projects (schedule of activities) concerning the requirement of EIA and list of project types under each category.

The other valuable document is the Guideline for Reviewing EIA Reports (2003).This is a generic guideline prepared to facilitate the EIA report reviewing and decision-making processes and it includes review approaches and outlines a minimum report structure and information requirements.

It is believed that the guideline will help to make decisions in good time and faith, whether and under what conditions the project shall proceed.

iii) Environmental Pollution Control Proclamation

This Proclamation (Proc. No. 300/2002) is mainly based on the right of each citizen to have a healthy environment as well as on the obligation to protect the environment of the country.

Its primary objective is to provide relevant ambient environmental standards applicable to Ethiopia, and punish for those violate these standards.

3.2.3 Sectoral Legislative Framework

a) Ethiopian Water Resource Management Proclamation

This Proclamation (Proc. No. 197/2000) was issued in March 2000 and provided legal requirements for Ethiopian water resources management, protection and utilization.

The aim of the proclamation is to ensure that water resources of the country are protected and utilized for the highest social and economic benefits to follow up and supervise that they are duly

conserved, ensure that harmful effects of water use prevented and that the management of water resources are carried out properly.

The proclamation defines the ownership of water resources, powers and duties of the supervising body, inventory of water resources and registry of actions, permits and professional licenses, fees and water charges.

b) Proclamation on Conservation, Development and Utilization of Forests

Conservation, Development and Utilization of Forests Proclamation (Proc. No. 94/1994) was issued in 1994 to provide for the conservation, development and utilization of forests.

The objective of this proclamation is to provide basis for sustainable utilization of the country's forest resources and ensure conservation of existing forests and establishment of State Forests.

The proclamation categories types of forest ownerships (State, Regional and Private Forests).One of the objectives for the establishment of State Forests are to conserve forest resources within their ecosystems. The law prohibits felling of *Hagenia abyssinica*, *Cordia Africana*, *Podocarpus gracilior*, *Juniperus procera* and *Olea europaea* ssp. *Cuspidate* from their natural habitats. It provides the power for designation, demarcation, and registration of forests to the former Ministry of Agriculture and Regional Governments.

The proclamation then goes on to give some specific direction for the utilization of State and Regional Forests and lists prohibited activities within protected forests.

c) Genetic Resource Proclamation

It (Proclamation № 482/2006) states that the rights of local communities over their genetic resources and community knowledge shall be protected as they are enshrined in the customary practices and norms of the concerned communities. Besides, it obliges an access permit guarantee to respect the laws of the country particularly those relating to sanitary control, bio-safety and environmental protection.

d) Wildlife Development, Conservation and Utilization Proclamation

This proclamation considers the 2005 Wildlife Policy and Strategy. The Proc. No. 541/2007,policy, consists five main elements: wildlife resources development, protection and administration of protected areas; conservations of endemic and threatened wildlife, wildlife resources utilization which enables the country in promoting ecotourism and marketing of wildlife resources; encouraging investors especially private ones to participate in the conservation of wildlife; strengthening research, education and training on wildlife; and establishing a network to compile and disseminate information to national and international users.

The proclamation is supported by regulations issued in 2008 by Council of Ministers that is cited as Wildlife Development, Conservation and Utilization Regulations, No. 163/2008.

Ethiopian Wildlife Conservation Authority (EWCA) was established as to Proclamation No. 575/2008 on "Establishment of the Ethiopian Wildlife and Development Authority". The

Authority is responsible to execute the proclamation and reports to the Ministry of Culture and Tourism.

e) Proclamation on Rural Land Administration and Land Use

Rural Land Administration and Land Use Proclamation (Proc. No. 456/2005) came into effect in July 2005. The objective of the proclamation is to conserve and develop natural resources in rural areas by promoting sustainable land use practices. In order to encourage farmers and pastoralists to implement measures to guard against soil erosion, the proclamation introduces a rural land holding certificate, which provides a level of security of tenure.

The Ministry of Agriculture is charged with executing the proclamation by providing support and coordinating the activities of the regional authorities. In line with the national proclamation, SNNPRS, SNNPRS, Bureau of Agriculture, has issued the regional Rural Land Administration and Use Proclamation (Proc. No. 66/2007).

The Proclamation also considers landholding right, land re-distribution, land holding procedures and minimum land holding and conditions leading to deprivation of holding rights.

f) Proclamation on Expropriation of Land Holdings and Payment of Compensation

The Proclamation, Proc. No. 455/2005 was issued in July 2005 and deals with appropriation of land for development works carried out by the government and determination of compensation for a person whose landholding has been expropriated.

It includes provisions on power to expropriate landholdings, notification of expropriation order, and responsibility for the implementing agency and procedures for removal of utility lines.According to the proclamation the power to expropriate landholdings mainly rests on wereda or urban administration authorities.

g) Proclamation on Research and Conservation of Cultural Heritage

Proclamation No. 209/2000 provides legal framework for research and conservation of cultural heritage. The proclamation establishes the Authority for Research and Conservation of Cultural Heritage (ARCCH) as a government institution with a juridical personality. At regional, zonal and wereda levels, heritage issues are managed and administered by the respective Bureaus and Offices of Culture and Tourism.

The proclamation has provisions for management, exploration, discovery and study of cultural heritage and miscellaneous provisions.

Key international organizations with Ethiopian representation are the International Council on Monuments and Sites (ICOMS) and UNESCO. Ethiopia is a party to the UNESCO World Heritage Convention.

h) Labor Proclamation

This Labor Proclamation No. 377/2003 covers standard topics such as freedom of association and the right to collective bargaining and to strike and brings the legal code closer to

international norms, based on the ILO's Freedom of Association and Protection of the Right to Organized Convention of 1948 (No. 87).

Occupational health and safety is governed by the Occupational Safety and Health Directive (2008). This is also administered by MoLSA which has an Occupational Safety, Health and Working Environment Department (OSHWED).

The responsible government ministry is the Ministry of Labor and Social Affairs with Bureaus of Labor and Social Affairs at regional level and corresponding offices at zonal and wereda levels.

The Labor Proclamation (377/2003) made provision for the establishment of a Tripartite Labor Advisory Board, with responsibility for studying and examining matters concerning employment service, working conditions, the safety and health of workers, labor laws in general and giving advice to the Ministry.

i) Pesticides

Pesticides are administered under the Pesticide Registration and Control Council of State Special Decree No. 20/1990. Under the decree a Pesticide Registration Council has been established. This registers pesticides and issues provisional permits for importation and use of non-registered pesticides especially for use in the new floriculture industry and other huge mechanized farms.

An inter-agency National Pesticide Advisory Committee has been established to advise Ministry of Agriculture on implementation of the special decree.

3.2.4 International Environmental and Social Agreements

Ethiopia has ratified the following international conventions on natural resources and environmental management:

- Convention on International Trade in Endangered Species (CITES) (ratified through Proclamation No. 14/1970);
- Framework Convention on Climate Change (UNFCC: ratified through Proclamation No. 97/1994);
- Convention on Biological Diversity (CBD: ratified through Proclamation No. 98/1994);
- The UN Convention to Combat Desertification (UNCCD: ratified through Proclamation No. 80/1997);
- The Cartagena Protocol on Bio-Safety to the Convention on Biological Diversity (ratified through Proclamation No. 362/2003);
- Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), ratified in 1977;
- International Treaty on Plant Genetic Resources for Food and Agriculture;
- Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their disposal (Basel Convention): ratified in 2000;

- Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention): ratified in 2002 and
- Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn Convention): entered into force 01 January 2010 together with the Agreement on the Conservation of African-Eurasian Migratory Water birds (AEWA).

3.3 Administrative and Institutional Framework

3.3.1 Federal and Regional Administration

The Federal Democratic Republic of Ethiopia comprises the Federal Governments and the state members. There are nine National Regional States and two City Administrative Councils which are the members of the Federal Democratic Republic of Ethiopia.

Both the Federal Government and the Regional States have legislative, executive and judicial powers.

A policy of decentralization of authority to regional administration has been pursued since 1991. The powers and functions of the Federal Government are defined in the constitution under article 51.

The regional governments have legislative, executive and judicial power over their administrative areas, except in matters of defense, foreign relations, citizenship, etc, which fall under the jurisdictions of the Federal Government. The administrative structures in regional governments are zone, wereda and kebele.

3.3.2 Environmental Council

Environmental council was established by provision of Environmental Protection Organs Establishment proclamation No. 295/2002. The environmental council consists of representative from prime Minster office, Federal and regional governments, Ethiopian chamber of commerce, local environmental non-government organizations, the confederation of Ethiopian Trade Unions and the director general of EPA.

The Council is responsible for:

- review proposed environmental policies, laws and issue recommendations to the government;
- evaluate and provide appropriate advice on the implementation of the environmental policy of Ethiopia and
- review and approve directives, guidelines and environmental standards prepared by EPA.

3.3.3 Environmental Protection Authority

The Federal Environmental Protection Authority (EPA)(now MoEFCC) was established under the Proclamation No. 295/2002 as an autonomous public institution of the Federal Government of Ethiopia entrusted with the protection and conservation of natural resources in the country.

The Authority (EPA) is the competent environmental agency at the Federal level in Ethiopia with one of its objectives stipulated in Article 5 of the Proclamation No. 295/2002 indicating that the authority is established: *"to ensure that all matters pertaining to the country's social and economic activities are carried out in a manner that will protect the welfare of human beings as well as sustainably protects, develops and utilizes the resources base on which they depend for survival."*

The Federal EPA is the key national level environmental agency with a mandate to address environmental issues.

3.3.4 Sectoral Environmental Protection Unit

Proclamation No. 295/2002 requires at the Federal level each Sectoral ministry to establish in-house Environmental Protection Unit to ensure harmony with respect to implementation of the environmental proclamations and other environmental protection requirements.

The duties and responsibilities of these Sectoral Environmental Units are to co-ordinate and follow up of the integration of environmental requirements in a proactive manner so as to ensure environmental sustainability of sectoral development efforts. Based on this provision different ministry such as Ministry of Water, Irrigation and Electricity, Ministry of Mines and Petrol, Ministry of Agriculture, etc has established sectoral environmental units. Recently the federal EPA has delegated its power to review EIA to these institutions.

3.3.5 Regional Environmental Protection Agencies

The Environmental Protection Organs Establishment Proclamation (Proclamation № 295/2002) requires regional states to establish or designate their own regional environmental agencies.

The regional environmental agencies are responsible for coordinating the formulation, implementation, review and revision of regional conservation strategies and for environmental monitoring, protection and regulation.

Regarding EIA, specifically, the Environmental Impact Assessment Proclamation (Proclamation Nr. 299/2002) gives regional environmental agencies the responsibility to evaluate EIA study reports on projects that are licensed, executed or supervised by regional states and that are not likely to entail inter-regional impacts. Regional environmental agencies are also responsible for auditing and regulating the implementation of such projects.

The responsible body for environmental protection in SNNPRS is structured under the Regional Rural Land Administration and Use Bureau.

At zonal level, environmental bodies are structured under Zonal Agriculture and Pastoralist Development Departments.

The environmental protection offices of the project areas are structured under the Pastoralist Development :- Selamago and Nyangatom weredas in South Omo Zone , Maji and Menit Shasha weredas in Bench-Maji Zone and Decha wereda in Keffa Zone.

4. STAKEHOLDERS'IDENTIFICATION AND CONSULTATIONS

4.1 Stakeholders' Identification

Federal, Regional, Zonal, Wereda and Project Kebele levels are identified as stakeholders to be contacted for discussion, consultation and interviews regarding the project and its environmental aspects. The details are:

- FDRE Sugar Corporation , Ministry of Foreign Affairs , Ministry of Environment ,Forest and Climate Change, Ministry of Water ,Irrigation and Electricity , Ministry of Culture and Tourism, Ministry of Agriculture, Federal Wildlife Conservation and Park Management of the Ethiopian Wildlife Organization ,and UNISCO.
- SNNPRS Bureau of Agricultural and Rural Development, Health, Land Use and Land Administration Department, Finance and Economic Development, Cultural and Tourism;
- Bench-Maji and South Omo Zones' Administrations, Culture and Tourism, Agricultural and Pastoralists Development, Water, Mines and Energy , Investment, Finance and Economy Development and Health Departments.
- Selamago , Nyangatom , Maji and Menit Shasha Weredas' Agriculture and Pastoralists Development Office, Water, Mines and Energy Offices, Culture and Tourism and Health Office and Woreda Councils and
- Selamago, Nyangatom, Maji and Menit Shasha Woredas of project command areas of Kebeles , Kebele councils, tribe leaders, elders, women and youth representatives and other household community members.

4.2 Stakeholders Discussions for Scoping Purpose

There have been discussions held with different major stakeholders and experienced and senior professionals in different disciplines found in the nation as far as it is both a nation and international issues such as hydrologists, GIS specialists, environmentalists, Sociologists and others.

The major stakeholders contacted were FDRE Sugar Corporation's high level concerned officers/experts , Prime Minister Office, Ministry of Foreign Affairs , Ministry of Environment ,Forest and Climate Change, Ministry of Water ,Irrigation and Electricity , Ministry of Culture and Tourism(expert), Ministry of Agriculture(expert) , Federal Wildlife Conservation and Park Management(expert) and UNISCO (expert).

During the stakeholders' focus group and individuals' discussions, following major issues were raised:

- Identifying the major potential environmental and social impacts and alternatives of the project,
- Local and international standards ,laws and frame works of EIA,

- Scoping report should considers potential impacts, alternatives, legal and policy frame works, etc,
- The contributions and the work plan engagement of stakeholders,
- The data should consistent, trustable and pertinent information. It should be gathered from original source,
- Discussions made on the time table of the EIA, basic requirements to conduct EIA, and
- Reached on consensus to perform the scoping report based on Ministry of Environment, Forest and Climate Change format.

In relation to community participation and settlement issues, for scoping purpose, we conducted interviews with the Sugar corporation concerned expert. Almost all indigenous people are pastoralist. No settlement in the project area. Currently, the Corporation involves in the settlements plan of the government (ten community villages) by providing health centers, schools, roads, providing both potable and farming waters and others.

For scoping purpose, the views of project area's community, officials and sectorial offices gathered from the previous EIA study. The major views from the angles of benefits, concerns, mitigation measures and conclusion are:-

Project Benefits

- creates job opportunities (rise income) and develop working habit; develops opportunity to use irrigation water (for farm and livestock); improves access to basic infrastructures, such as hospital and other health institutions, schools, roads ,etc; strengthen socio-cultural integrations; alleviate local sugar shortage and provides sugar for export market; bi-products are used for animal feeding and power generation.

Concerns

- Loss of grazing lands (cause to livestock's feeds constraints); restricting livestock movements to Omo River and pasture lands; aggravate malaria and other water related diseases; spread out communicable diseases such as HIV/AIDS prevalence; displace community members; and aggravate wildlife migration.

Mitigation measures:

- Omo National Park contains much wildlife so harmonizing works should be done to optimize the benefits from both the park and the proposed project; the project affects the free access of wildlife to Omo River so that the project should set wildlife corridors; immediate attention shall be given to supply of basic infrastructure to the community such as hospital and other health institutions, schools, roads, livestock health care ,etc ; and strengthen environmental protection activities.

In general, the local stakeholders' views were concluded with the positive impacts of the project outweighed than the negative impacts, and the project has got full consent of the residents in the project area.

5. COMPILATION OF BASELINE DESCRIPTION

The baseline descriptions categorized by two major categories: (i) Biophysical and (ii) Socio-economic and cultural environment. The major assessments to be considered in the above categories of the EIA are presented as follows:-

5.1 Bio-physical Assessments

- ✓ Description of detail site information within and around project area with clear diagrammatic representation such as geographical boundaries, the existing soil and vegetation, landscape and aesthetic values,
- ✓ Review of detail information about surface hydrology and water regime and impact on the same due to the onset of the project and meteorological data of the area,
- ✓ Water resource of the area groundwater and availability of potable water should be thoroughly explored,
- ✓ Water quality of any existing wells, ponds, rivers or streams in the vicinity of the development,
- ✓ Review of quantified water requirement that shows seasonal variation and year round availability of the water for the project and ecosystem requirement and downstream users,
- ✓ Review of detail water balance which includes but not limited to water intake, water usage, waste water generation, effluent treatment and reuse mechanism, and any other related water conservation mechanism. Hydrological and river basin modeling study that assesses the water balance including monthly tributary flows into Omo river ,monthly reservoir and flood plain evaporation; monthly dependable rainfall in Kuraz irrigation areas ;monthly variation of Omo-valley flood plain area and volume of flood lost by evaporation based on at least 10 years, Gibe III flood reduction (saving of water) on the Omo valley using Hydraulic model (HEC-RAS) and HEC-Resim ,establish river basin model (Omo-Gobe-Turkana) to assess the impacts of development on downstream areas using appropriate software.
- ✓ Review of ambient air quality and noise level data and proposal for ambient air quality and noise level monitoring site/sites; and details of traffic density and its impact on ambient air quality and noise level from stationary or mobile sources in the area of influence,
- ✓ Climatic conditions, wind speed and direction, precipitation, relative humidity and ambient temperatures, and

- ✓ Review the flora and fauna of the area, with special emphasis on rare, threatened, endemic, protected and endangered species. It includes National Parks, Wild Life Sanctuaries, Biosphere reserves, Elephant reserve, Breeding ground, habitat for migratory birds, wetlands, reserved forest, protected forests and etc. within the study area and its conservation and management plan if any.

5.2. Socio-economic and Cultural Environment

- Socio-economic & cultural issues; present and proposed land use; planned development activities,
- Population and settlement; economic base /employment; distribution of income; Infrastructure and other Social Services; Public services and facilities; goods and services; utilities; public health,
- Rationalizing the project area proposed comparing with other project option that could be considered based on the right type of scenario analysis,
- Review and analysis of the project distance from public water supply areas (surface water bodies and ground water),Scenic (tourist) areas, religious places, protected tribal settlements, monuments of national significance, World Heritage Sites, Flood prone areas, and any other features such as prime agricultural lands, pasture lands and migratory corridors both for human and wild life etc,
- Review and acquiring of GPS points for basic features such as tourist hot spot, factory site, camp site, conservation site, archaeological sites, and all related vital points of scientific and cultural interest of local people, and international community and development of topo sheet with 1:50000 scale for these vital features, and
- Review settlement plan for the project affected people or the community livelihood status nearby the project area will be critically considered.

6. PROPOSED METHODOLOGIES FOR IDENTIFYING AND ASSESSING ENVIRONMENTAL AND SOCIAL-RELATED IMPACTS

6.1 Major Data Collection Instruments

6.1.1 Baseline Data Survey

The relevant socio economy and natural environment data will be collected from the appropriate government sectors, NGOs, traditional institutions found in project site or kebele and others; and interpreted the project direct and indirect impacts on nearby and at large on the region/nation. The field surveys will focus on the assessment of heritages, indigenousness administration system, socio-economic conditions and other physical, biological environments of the project area.

i) Secondary Data Sources

Secondary data mainly focuses on that of reviewed published international, national and regional state policies, legislatives, regulations, guidelines as well as international conventions and research protocols ratified by the Federal Democratic Republic of Ethiopia (FDRE). The data expected to be collected from FDRE Sugar Corporation, Foreign Affair Minister , Ministry of Forest, Environment and Climate Change, Ministry of Water ,Irrigation and Electricity , Ministry of Culture and Tourism, Ministry of Agriculture, Federal Wildlife Conservation and Park Management UNISCO, Central Statistics Authority (CSA), Federal and Regional Sector Offices ,Guide lines of the MoA and Performance Standards on social and environmental sustainability documents and others. Besides, environmental and socio-economic data are also gathered from local government offices or institutions or NGOs mainly from Zones', Weredas' and Kebeles' sectoral offices.

ii) Review of Previous Studies and Policies

This task will include further review of previous study documents of similar projects and other relevant studies; relevant polices regulations and guidelines of the environmental study including national environmental policies, regulations and guidelines. Together with the baseline survey, this will help to identify and describe the natural and human environment of the study area including both direct and indirect impact zones.

iii) Primary Data Sources

Some of the principal approaches that we follow to primary data collection are observation; and qualitative and quantitative survey approaches, which target stakeholders or key informants, public consultation, focused group discussions and sampled households.

- **Observation/Site Visit**

Observation/ Site Visit will be carried out to gain first-hand knowledge of existing environmental and social conditions of the project area. It would be a good instrument in assisting the secondary and primary data collected from the project site. During site visiting the study team will use different techniques to acquire more realistic information such as informal discussion with residents or workers, visiting the core project areas, photographing the critical observed environmental and social conditions, etc.

- **Qualitative Approaches**

a) Stakeholders' Consultation/ Key Informant Interviews

It is an instrument used to obtain the attitudes of the stakeholders or depth individual interviews with key informants towards the project and finally to consider their fears and feelings (merits and demerits) in the project design and implementation processes. They could be representatives of project workers or management bodies at different positions and responsibilities, affected parties of the project, the environmental protections' affaires, agricultural development offices,

health and sanitation, tourisms and cultural affair, women, child and youth representatives and the like at different level of administration from Federal to Keble.

(b) Public Consultation

Public consultation and participation assure the views and concerns of all interested and affected parties. It is a very an appropriate tool in identifying or evaluating more pragmatic issues (benefits (opportunities) ,adverse effects, threats, constraints) and mitigation strategies of EIA than the stakeholders, and the existing literary documents.

(c) Focus Group Discussions(FGD)

FGD have special merits in that they are sort of group interactions having synergistic effect , that initiate participants to forward ideas and /or opinions producing better information and insights than would be obtained in other forms of interviews. In the view of this fact, the assessment will carry out a minimum of FGDs with 5-8 selected members from different target groups possibly from local communities (elders), women and the other group from Keble or wereda administrative offices. The FGD are expected to provide a detail analysis about the social attitude toward the project, asserting of social intervention in the project, the general impacts of the project that already grasped by the community and many other issues.

- **Quantitative Approach**

The study will employee quantitative method of data collection to acquire the necessary quantitative data for both the social and natural environments of the project area like age based social composition, house hold income and expenditures, land utilization and others.

Applying census method to collect quality and invaluable data is more preferred than sampling technique if it is possible. However, sampling method is commonly used rather than census if the household numbers are many, high homogenous nature of the community , availability of adequate data, many constraints such as money, time ,trained personnel and other factors ,etc . When this study decided to adopt a cross sectional house hold survey, the initial steps taken will be determining statistically acceptable sample sizes and selecting sampling technique type.

(a) Sampling Design

In order to reach the selection of final sample households, a combination of different sampling methods will be utilized. Primarily, stratified and random sampling technique will be used for sample selection. This approach can result in substantial savings in terms of time, financial sources, data will be collected from geographical location of the project site, which in turn reduces sampling errors and the surveyed data will be more expressive.

(b) Survey Instruments

The purpose of this household survey is to generate quantitative data that would be used as supplementary data or to fulfill the data gap collected from secondary and primary qualitative data sources including baseline data, consultation and like. The survey instrument or questionnaire will be designed to have both open-ended and closed-ended questions to gather

relevant information from the sampled households. The questionnaire consists of both major socioeconomic and natural environmental issues of the project area such as demography characteristics, social composition, house hold income and expenditures, land utilization, water resources systems, utilization of fertilizers, chemicals, mobilization manpower, and others.

6.1.2 Methodology for Bio –Physical Activities

The methodology involved to identify, assess and evaluate bio-physical natures of the project area will have the following features; but not limited

- **Secondary Sources**

The available studies, maps, documents, literatures, annual or biannual or quarterly government offices' reports and other secondary sources will be used as inputs where the EIA needs.

- **Observation and Reconnaissance**

The project site, upstream and downstream areas will have put under close and profound observation and the lands will be described and categorized based on such as presence or absence of farming, climate, water availability, drainage condition, soil condition, live stock, wildlife , vegetation cover, population and the relative level of urbanization, etc. Besides, after the reconnaissance observation using appropriate sampling techniques, water and soil profile samples will be taken and analyzed as necessary.

- **Species Composition and Density**

The project area is very large so that the study will use GIS modeling to identify vegetation coverage. For conformation purpose, some areas will be observed by the study team.

- **Interview**

This approach is very useful especially in identifying and gathering some basic but not founding frequently information such as wildlife, type and level of flooding, etc. The study at least will use the following methods;

- Appropriate and experienced agricultural experts who are found in the wereda, kebele and project offices will be interviewed .based on the check list.
- Informal discussion with pastoral, mixed farming and other communities that are found or living in the area.
- Some relevant bio-physical questions such as land use, agriculture , environmental issues, etc will be incorporated in the household sampling survey.

- **Soil Survey**

For the survey of soils, for this EIA purpose, the interpreted maps such as topographic maps prepared by the Ethiopian Mapping Authority and satellite digitized maps will be used as a base map for field data collection and refining of the boundary. Only verification of the past study and the supplementary data will be required to fill the missing data gap through field investigation.
After collecting soil samples for laboratory analysis or taken from the feasibility studies, the analysis will be essential for soil classification, fertility status, land degradation evaluation, erosion hazard assessment, etc.

- **Natural Resources**

Aerial photos and digital maps can provide information on the land cover status though there will be a land cover change as time passes. Hence, only interpolation can be made from the land cover for probable use but land use more can only be confirmed through detailed field investigations.
Wherever heterogeneity prevails, each land cover type will be separately described and their coverage within the unit will be estimated in percentage to determine their distribution extent. In some cases, where access will not available extrapolation will be adopted.
In addition, discussions will be made with representative wereda and PA offices, community leaders, elders, women and youth representatives, etc to confirm the probable use of the identified land cover types and get their impression about the study. Finally, the data analysis will be conducted.

6.2 Direct and Indirect Impact Zones

For the purpose of clearly, identification of significant environmental impacts, the project site will be divided in to two zones*: direct* and *indirect* impact zones:-
Direct Impact Zone: The direct impact zone of the project includes areas under the direct influence of the project components and its immediate environments. This is the area in which implementation will definitely bring about measurable and sometimes significant changes to the physical environment and ecology, as well as the social and economic conditions. The project area with its farm related structures including (access roads and canal) and river stretch and adjacent land downstream will be investigated. The study of the direct impact zone will include investigation of any important ecosystem components and existing human or socio-economic activities.
Particular emphasis will be given to the following, but not limited to:-

- detailed analysis of useable land losses due to land acquisition by the project components and its environmental impacts;
- Socio economic issues including displacement and resettlements if any;

- the effect of the farm/factories on the existing terrestrial and aquatic ecology (flora and fauna);
- possible land degradation due to various factors after the implementation of the project;
- investigate prevalence of diseases with particular emphasis to water based and water related diseases such as malaria and schistosmiasis (bilharzias); and
- the impacts of the sugar projects upon the bio-physical environments of the project areas will also be assessed.

Indirect Impact Zone: The indirect impact zone includes areas far away from the project site that will be influenced by the project and/or that will have an influence on the proposed project. For the purpose of the study the area will include the administrative units (wereda) which the project is located in. Here, emphasis will be given to:

- the effect of the project on other land use patterns, its quality and availability ,etc;
- assessment of the socio-economic activities upstream and downstream of the proposed project site will have an adverse impact on the project; and
- assessment of immediate environmental conditions such as deforestation, soil erosion, etc.

6.3 Major Activities (to be included in the EIA report)

Major activities to be accomplished in carrying out the environmental impact assessment of the proposed project, the activities are categorized at three stages. The overall environmental impact assessment work (activities/tasks) to be carried out is divided into three stages as follows.

6.3.1 Pre-fieldwork

At this stage, all collected previous studies will be exhaustively reviewed. The following activities will be carried out, but not limited to-

- review of previous studies and relevant documents;
- interpretation and preparation of base maps for the fieldwork;
- contact stakeholders found in Federal Offices for scoping report purposes;
- produce final scoping report
- planning, preparation and arrangements(including logistics) for field visit;
- preparation of all the necessary formats, checklists and questionnaire, those will be used for filed data collection will be duplicated at sufficient quantity; and
- stakeholders engagement at Federal levels
- producing inception report

6.3.2 Fieldwork

The following activities will be carried out at this stage, but not exhaustive:-

- Conducting field observation and make exhaustive list of all impacts in the direct and indirect project impact area to have views of the biophysical features;
- Conduct community consultation with representatives of different segments of society in selected kebeles;
- Hold discussions with experts working in relevant organizations at Regional , Zonal, Wereda and Kebele levels on relevant issues;
- Identify institutional responsibilities and needs for capacity building to implement recommendations of ;
- Assess environmentally sensitive areas and valued resources that may need special protection;
- Assess other existing or proposed development projects within the study area;
- Assess energy and construction sources of the project area and look for alternative energy sources;
- Collection of water sample for water quality compatibility, if available.
- Assess the physical, biological, ecological and social conditions within or around the study area will include the following but not limited to issues:-
    - ✓ Ecological conditions; natural habitats, biodiversity, wildlife, wet lands, if any;
    - ✓ National parks, conservation areas, wildlife reserves and any protected area nearby the project;
    - ✓ Land use/ cover, land use patterns,
    - ✓ Biological environment such as vegetation types, species composition fauna rare or endangered species, species of special ecological and /or of economic /medicine importance and species with potential to become nuisance or dangers to the general agricultural activity of the community.
    - ✓ Land degradation, soil erosion, deforestation etc
    - ✓ Topography (mainly focus on preparation of slope map by slope categories), soil, climate, hydrology, erosion intensity, and water resources.
    - ✓ Assessment of flora and fauna
    - ✓ Endemic species of flora and fauna;
    - ✓ Aesthetic values and tourist attraction sites;
    - ✓ Settlement pattern;
    - ✓ Demographic characteristics
    - ✓ Social services (Health, culture, water supply and sanitation, education, and other infrastructures)
    - ✓ Economy Sectors such as financial ,tourism, industry including micro enterprise projects ,trade, marketing ,Credit systems and Facilities ,etc
    - ✓ Labor and working conditions such as safety protection

- ✓ Household socioeconomic survey
- ✓ Beneficiaries attitude towards the envisaged project i.e, irrigation
- ✓ Gender Issues
- ✓ Environmental health issues, malaria prevalence;
- ✓ Flood hazards, sedimentation; pollution if any
- ✓ Gender Issues:-assess how the project intervention will affect men and women, the potential risks for spreading of HIV and sexually transmitted diseases due to the large influx of workers.

6.3.3 Post Fieldwork

The following major activities will be carried out at this stage, but not exhaustive:-

- Summarize pertinent legal, policy and standards governing environmental issues;
- Predict the positive potential impacts that will improve the lives of the people in the study area;
- Predict any significant negative impacts associated with the pre-construction, construction and operation phase of the proposed project;
- Assessment of the possibility of cumulative impacts of other existing or proposed development projects in the study area, if any;
- Analysis of alternatives including the no-action alternative
- Socio economy Analysis
- Recommend feasible and cost-effective mitigation measures to prevent, reduce or compensate significant negative impacts to acceptable levels[
- Evaluate the identified impacts
- Recommend training requirement of the project
- Develop detailed environmental management plan
- Develop comprehensive and detailed environmental monitoring plan;
- Produce draft final environmental impact assessment report with its full content.

6.4 Data Processing and Impact Analysis

6.4.1 Environmental Data Processing and Impact Analysis

The processing and analysis of impact focus help in impact prediction. The objectives of prediction are to estimate the magnitude, extent and duration of the impacts in comparison with the situation without the project/action based on baseline conditions/levels prior to project forecasted the future conditions with and without the project; and compared the impacts with local and international environmental standards and guidelines where appropriate.

A number of ‘tools’ are available to assist in environmental impact identification, prediction, analysis and evaluation. Some of tools are frequently used to identifying impact in simple way such as checklists of impacts; network diagrams and map overlays. More complex tools, such as mathematical modeling and the use of GIS systems may also be used in certain circumstances.

Since the objective of prediction is to estimate the magnitude, the processing and analysis of the impacts has to focus on point so as to help the estimation of the extent and duration of the impacts in comparison with the situation without that project/action. An environment impact prediction should at minimum perform the following activities but not limited to:

- Determine the initial reference or baseline state vis conditions/levels prior to project. Forecast the future state/conditions with and without the project: and, compare with environmental standards and guidelines where appropriate.
- Impact magnitude relates to the severity of the impact, whether the impact is irreversible or reversible, and the potential rate of recovery from the impact, because the magnitude of the impacts is considered high if a major adverse impact is cannot be mitigated. A major adverse impact would affect the potential subsistence and /or recreational/commercial use of biophysical resources, with the result that the value of resources would be reduced far below the publicly acceptable level.

Moderate to minor unmitigated impacts of a similar nature will result in resources being still usable but at some inconvenience to the public.

- **Extent of Impact**: the spatial extent or the zone of influence of the impacts should always be determined. An impact can be site-specific or limited to the project area; a locally occurring impact within the watershed of the proposed project; a regional impact that may extend beyond the watershed; and national, affecting resources on a national scale (trans-boundary).
- **Impact Duration:** Environmental and socio-economy impacts at different phases of the project cycle may need to be considered. These are classified by mentioned below:-
    - only 3 years after project commencement may be classified *short-term* ;
    - which continues for 10 years or more but less than 20 years may be defined as *medium-term* ;and
    - Impacts that last beyond 20 years are considered *long term*.

Having predicted and identified impacts their relative significance has to be assessed through impact evaluation criterion that may include:

- The magnitude and likelihood of the impact and its spatial and temporal extent;
- The value of the affected environment ;
- Political repercussion;
- The likely degree of recovery of the affected environment and
- The level of public concern

Environmental impacts have different natures (positive, negative, direct, indirect, cumulative), magnitude (severe, moderate, low), timing (pre-construction, during construction, operation, immediate, delayed), duration (short/long, intermittent, continuous), and area coverage (local,

regional, global). Such nature of impacts will be identified both in quantitative and qualitative ways and analyzed along with the very cycle or components of the project.

In the impact analysis, the different components of the project possible indicators of both desirable and undesirable impacts will be considered in addition to nature.

The intrusion of large number of peoples in search of employments; the undertaking of constructions for land development (such as land clearing, water convenience system, internal roads); construction of buildings for residential and non-residual houses like stores, laboratories, shades; mobilizing plenty of machineries and other technologies are some of the activities of the proposed sugar development project. Since it is along with these project components, soil degradation, damage to water resources, local climate change, genetic transformation, land use conflict, social displacement, absence of safety environment for workers, and many other impacts possibly may occur.

Impacts due to factory process: There is air, solid and liquid wastes in sugar manufacturing process. The EIA considers such as:-

- Flue gas outlets from the chimney,
- Different types of Wastes from the factory,
- Effluent Treatment Plant , and
    - Raw and treated effluent quality which are measured by different parameters (PH, BOD, COD, TSS, TDS, Temperature, ,etc) as to Ethiopian Compliant Standards.

More notably, however, international Guidelines, EPA guidelines, extracted documents of Federal MOA and other legal and institutional documents will be used as a general framework in the course of identifying and analyzing the likely socio-environmental impacts and environmental management plan of the component of the project.

6.4.2 Socio-Economy Data Processing and Impact Analysis

After collecting a household socio-economy survey data, the verifying, encoding, cleaning and data processing tasks will be performed by the data manager using SPSS or MS-Excel software. Then the data will be re -checked and cleaned; and analyzed using descriptive statistics or complex statistics models such as econometrics (bi-variant and multi variant models) by the assigned expert.

6.5 Major Methodologies for Mitigation Measures

The possible methodology to be applied to device mitigation measure for the predicted, identified and evaluated negative impact and upgrading positive impact caused by the sugar development project includes, but not limited to:

- minimizing the degree or magnitude of the action and its implementation(introducing pollution control, waste treatment, monitoring, training, public education, etc),

- remedy the impact by, rehabilitating, repairing and renovating the affected environment), and with less probability use compensation (for damaged resources, money to affected persons, residual impacts).
- rehabilitate and avoiding the impact altogether by not taking any actions (change project site, process raw materials, operating methods, disposal route or locations timing or engineering design) and others.

6.6 Issues to be included in the Environmental Management and Monitoring Plans

6.6.1 Environmental Management Plan (EMP)

- Identify actions which reduce adverse impacts created by the project at acceptable levels or where possible to avoid them.
- Identify alternatives for actions where the impacts cannot be mitigated.
- Identify mitigation measures, institutional systems, Sectoral Integration, and capacities strengthening (training and others) needs to be implemented.
- The planned mitigation actions will be executed during project design, implementation/ construction and operation phases.
- EMP matrix will consist of a summary of environmental issues (current and past significant environmental impacts) , actions/mitigation measures, responsibility bodies, monitoring methods and parameters, estimated costs with their sources and implementation schedule and complementation date .

6.6.2 Environmental Monitoring Plan

To limit the negative social and bio–physical impacts on to an acceptable level, periodic monitoring and environmental auditing would be conducted. It would be advised the monitoring activities during all phases of the project to be carried out as per MoEFCC guide lines and others international standards of Environmental Monitoring Plan. The monitoring plan matrix consists of all phases (pre-construction, construction and operation and maintenance phases) , mitigation measures, parameters to be monitored, location, measurements, frequency , responsibility bodies and costs . In addition to the issues mentioned in the nation Code of Practice, the major parameters to be monitored during Project operation are Soils, Erosion and Siltation ,Water quality, Downstream impacts, Wetlands, Flood Hazard, Proliferation of Weeds and pasts, Fish resources, Fertilizers and chemical utilization, Ground Water ,Wildlife and National Park ,Deforestation, Afforest ion, Health , Culture and Landscape relics, Infrastructures, Labor and working conditions, Solid and liquid wastes, Air and Sound pollution, , Pasture and Fodder ,Energy supply, etc.

7. TEAM COMPOSITION

Table 1: Major Professionals Team Composition in EIA Review and Additional Studies

	Professionals	Education/Experiences
1.	Team leader /Senior environmental economist/ Senior EIA Consultant in Socio- Economics	Msc + BA + above 20 years experiences
2	International Technical Consultant /Advisor/ Senior Water Resources Modeler/ Hydraulic Modeler / Environmentalist/ Chartered Engineer /Civil Engineer	Msc + BSC + above 16 years experiences
3.	Senior Natural Resource/Water/Soil/forestry/Wetland /Assistant Team Leader	Mscs + above 20 years experiences
4.	Senior Natural Resource/forestry/Wetland / Hydraulic Engineering, Land and Water Development Specialist /	Mscs +Bsc+ above 14 years experiences
5.	Senior environmentalist	Msc +BA+ above 20 years experiences
6.	Senior Archeologist	MAs +BA+ above 16 years experiences
7.	Senior remote sensing and GIS expert	Msc +Bsc+ above 20 years experiences
8.	Senior Water Resources Modeler/Group Leader / Hydraulic Modeler / Environmental Engineer/ Hydrologist /Civil Engineer	PHD+ Msc + BSC+ above 20 years experiences
9.	Senior Hydraulic modeler/Water Resources Modeler/ Surface Water Hydrologist	Msc + above 20 years experiences
10	Senior Socio economist	MA +BA+ above 20 years experiences

8. WORK PLAN AND STUDY TEAM ORGANIZATION

8.1 Study Team Organization and Staffing Schedule

The summary of staffing schedule indicating the man working days input is shown in the Chart below.

8.2Activities' Schedule

A team of senior and qualified experts in each field will be accompanied with a technical team will be organized in order to complete the **EIA** study of the Sugar Development Project within an estimated time of gross 3 months..

In this section, a work plan, resource requirement and facilities for the detail activities social and environmental impact assessment review program for the project area are forwarded leading up to the submission of the final output. The planning for the activities schedule and tasks are given in the ***chart*** below

The schedule for the activities may be updated in a flexible way, depending on the actual condition, but within the given time frame.

Chart 1:Staffing Schedule

No	Profession	Month			No	Man Days Per staff		
		M1	M2	M3		Field	H.Q	Total
A	**Major Professionals**							
1	Team leader /Senior environmental economist/ Senior EIA Consultant in Socio- Economics				1	15	60	75
2	Senior environmentalist				1	15	60	75
3.	Senior Natural Resource/Water/Soil/forestry/ Wetland /Assistant Team Leader				1	15	45	60
4	Senior Natural Resource/forestry/Wetland / Hydraulic Engineering, Land and Water Development Specialist /				1	15	30	45
5.	Senior socio economist/ Sociologist				1	15	30	45
6.	Senior Archeologist				1	15	30	45
7.	Senior Hydraulic Modeler /Water Resources Modeler/Group Leader / Environmental Engineer Hydrologist				1	15	45	60
8	Senior Water Resources Modeler/Hydraulic modeler/ Surface Water Hydrologist				1	15	30	45
9.	Senior remote sensing and				1	15	30	45

	GIS expert										
10.	International Technical Advisor/ modeler							1	-	45	45
B	Sub-Professional										
1.	Data encoder							2	0.0	15	15
2.	Enumerators/facilitators							5-6	15	0.	15

Chart 2: Activities' Schedule

No	Activity description	Duration In Working Days	Months(M) /Weeks(W)											
			November/17				December/17				January/18			
			W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REVIEW		**77**												
1	**Pre-fieldwork (for detail see section 6.3)**	**17**												
1.1	Contract agreement with the Sugar Corporation	3												
1.2	Submission of final scoping report - stakeholders already involved at draft and final levels	15												
1.3	Literature review /secondary data collection from Federal and Client ,document review , data gap identification ,stakeholders discussion(MoFCC,MoA, MoWIE, Client ,etc) and base map preparation(see 6.1.1 & 6.3)	8												
1.4	Prepare questionnaire /chick list , planning and mobilization	21												
1.5	Submission of Inception Report	15												
2	**Field work & data collection (for detail see section**	**15**												

	6.3)													
2.1	Field trip , training for enumerators and facilitators and pilot survey	5												
2.2	Stakeholders, key informants , Secondary collection and public consultations	10												
2.3	Primary data collection, verifying, correcting surveyed data, observation , survey and sample collection.	10												
3	**Post field work(for detail see section 6.3)**	**30**												
3.1	Data management (data encoding, cleaning ,processing & analysis)	10												
3.2	Analyzing (including GIS) and Preparation of draft review report and submit to the Client	21												
3.3	Comment on draft EIA review report -Major stakeholders will be involved	7												
3.4	Validation work shop, preparation & submission of final EIA review and summery reports --Major stakeholders will be involved	15												

9. Deliverables/Reporting of EIA Reviews

- **Scoping Report including engagement plan:** The draft scoping report will be submitted within 7 calendar days after the commencement of the work. 3 copies in English (double-sided printing). After 7days, by incorporating suggestions /comments, the final scoping report will be produced.
- **Inception Report**: The draft inception report will be submitted within 3weeks after the commencement of the work. 3 copies in English (double-sided printing). After 5 days, by incorporating suggestions /comments, the final inception report will be produced.
- **Draft Reviewed EIA Report**: will be presented within 8 weeks after the EIA review commencement of the work. 3 copies in English (double-sided printing).
- **Final Reviewed EIA Report and Non-technical Summary of the Final Report**: will be presented within 10 weeks after the EIA review commencement of the work. 3 copies in English (double-sided printing).

10. CONCLUSION

This scoping report describes the major identified stakeholders, potential environmental and social impacts due to the proposed project, alternatives, legal, policy and institutional frame works and others.

During the stakeholders' discussions, some findings are identified such as down size of the farming land, decreased the number factories from 5 to 4, the corporation starts in participation of government settlements through mainly by construction of infrastructure facilities such as water supply, road, health centers, schools and others.

The challenges of the development of the project starting from the beginning have been many such as financial constraints, resistant from the environmental extremists, and others. The government has been doing important things to mitigate these problems such as downsize the project, creates awareness about the project (international wide), reviewing the former EIA and others.

Finally, the report is more developed through the technical (constructive ideas, views, comments) contributions of the stakeholders stated in main body of the report so that it will serve as road map for the future EIA.

Major References

Agro-Ecology Zones of Ethiopia: Natural Resources Management and Regulatory Department; Ministry of Agriculture, September, 2000, Addis Ababa.

EIA (2013): Environmental Impact Assessment on Kuraz Sugar Development Project, FDRE Sugar Corporation ,Ethiopia.

EPA, Proclamation No. 295/2002: Environmental Protection Organs Establishment, Addis Ababa, Ethiopia.

EPA, Proclamation No. 299/2002: Environmental Impact Assessment, Addis Ababa, Ethiopia.

EPA, Proclamation No. 300/2002: Environmental Pollution Control, Addis Ababa, Ethiopia.

EPA (1997): The Environmental Policy of Ethiopia, Addis Ababa, Ethiopia.

Expropriation of Land Holdings and Payment of Compensation Proclamation No. 455/2005: Addis Ababa, Ethiopia.

MoWR (1998): The Federal Water Resources Policy, Addis Ababa, Ethiopia.

MoWR (2000): Ethiopian Water Resources Management Proclamation No. 197/2000, Addis Ababa, Ethiopia.

MoWR (1993). The Federal Democratic Republic of Ethiopia, Ministry of Water Resources, Omo-Gibe River Basin Development Master Plan Study Draft Final, Volume IV, Lower Omo Large-Scale Irrigation and Drainage Development Projects Pre-feasibility study, Addis Ababa.

Annex1: Lists of Consulted Stakeholders

S/N	Organization	Method/s followed
1.	FDRE Sugar Corporation	Documents, Consultation
2.	Ministry of Forest, Environment and Climate Change	Documents, Consultation
3.	Ministry of Foreign Affairs	Consultation
4.	Ministry of Water ,Irrigation and Electricity	Documents, Consultation
5.	Ministry of Culture and Tourism(expert)	Documents, Consultation
6.	Ethiopian Wildlife Organization	Consultation
7.	Ministry of Agriculture	Documents
8.	Community/Local Stakeholders' Views	Documents
9.	UNISCO	Documents

Annex 2: Stakeholder Engagement Methodology

Some of the methodologies which use for the engagement of relevant the EIA stakeholders are informal and formal discussions with key informants/experts/officials at Federal/Regional/Zonal/Wereda/Kebele levels, public consultation at Community Levels, sectorial focused group discussions at Federal and Zonal/Wereda levels, and sampled households at community levels. These stakeholders are expected to involve before and after field works at Federal Level, and at field Regional /Zonal/Wereda/Kebele /community levels(see the involvement planning of stakeholders in activity plan(Chart 2)).

a) Stakeholders' Consultation/ Key Informant Interviews

It is an instrument used to obtain the attitudes of the stakeholders or depth individual interviews with key informants towards the project and finally to consider their fears and feelings (merits and demerits) in the project design and implementation processes. In Kuraz Sugar Development Project case , the stakeholders contacted/to be contacted are the representatives of FDRE Sugar Corporation, Ministry Foreign Affair , Ministry of Forest, Environment and Climate Change, Ministry of Water ,Irrigation and Electricity , Ministry of Culture and Tourism, Ministry of Agriculture, Federal Wildlife Conservation and Park Management , UNISCO, and Regional ,Zonal ,Wereda and Kebele levels sectorial and administrative offices. Besides, the representatives of project workers or management bodies at different positions and responsibilities, affected parties of the project, women, child and youth representatives and will be contacted.

(b) Public Consultation

Public/community consultation and participation assure the views and concerns of all interested and affected parties. It is a very an appropriate tool in identifying or evaluating more pragmatic issues (benefits (opportunities) ,adverse effects, threats, constraints) and mitigation strategies of EIA than the stakeholders, and the existing literary documents.

(c) Focus Group Discussions(FGD)

FGD have special merits in that they are sort of group interactions having synergistic effect , that initiate participants to forward ideas and /or opinions producing better information and insights than would be obtained in other forms of interviews. In the view of this fact, the assessment will carry out a minimum of FGDs with 5-8 selected members from different target groups possibly from local communities (elders), women and the other group from Keble or wereda administrative offices. The FGD are expected to provide a detail analysis about the social attitude toward the project, asserting of social intervention in the project, the general impacts of the project that already grasped by the community and many other issues.

(d) Household Survey

The study will employee quantitative method of data collection to acquire the necessary quantitative data for both the social and natural environments of the project area like age based social composition, house hold income and expenditures, land utilization and others.

Applying census method to collect quality and invaluable data is more preferred than sampling technique if it is possible. However, sampling method is commonly used rather than census if the household numbers are many, high homogenous nature of the community , availability of adequate data, many constraints such as money, time ,trained personnel and other factors ,etc . When this study decided to adopt a cross sectional house hold survey , the initial steps taken will be determining statistically acceptable sample sizes and selecting sampling technique type.

(a) Sampling Design

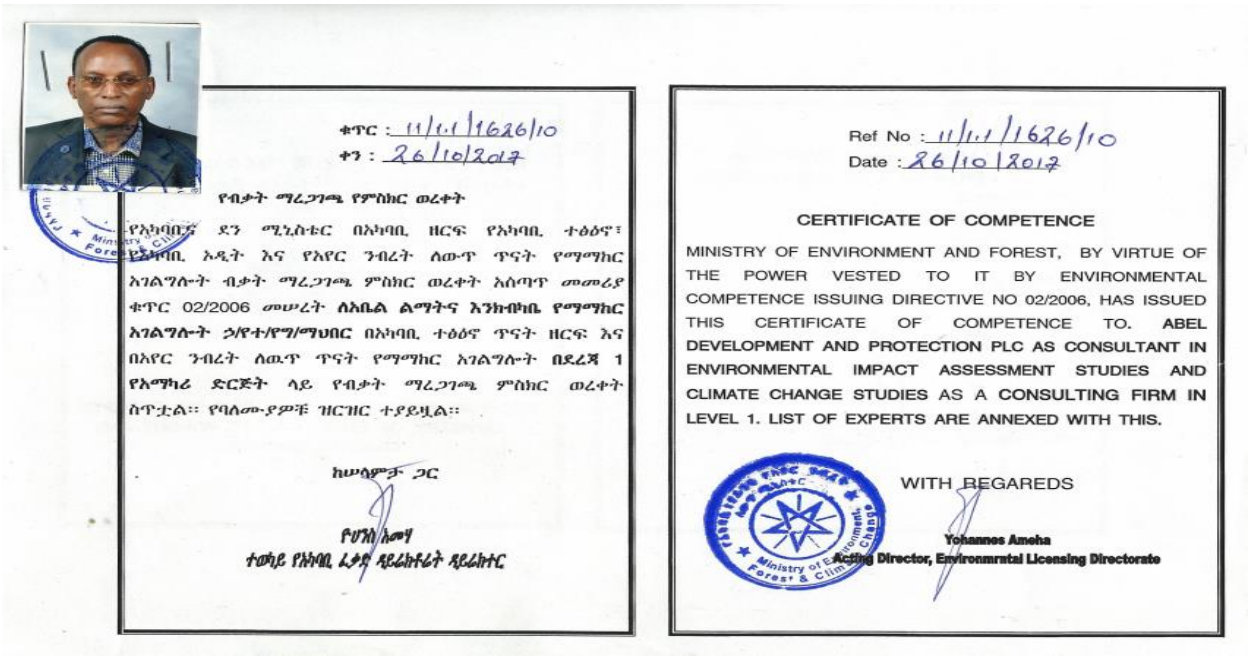
In order to reach the selection of final sample households, a combination of different sampling methods will be utilized. Primarily, stratified and random sampling technique will be used for sample selection. This approach can result in substantial savings in terms of time, financial sources , data will be collected from geographical location of the project site ,which in turn reduces sampling errors and the surveyed data will be more expressive.

(b) Survey Instruments

The purpose of this household survey is to generate quantitative data that would be used as supplementary data or to fulfill the data gap collected from secondary and primary qualitative data sources including baseline data, consultation and like. The survey instrument or questionnaire will be designed to have both open-ended and closed-ended questions to gather relevant information from the sampled households. The questionnaire consists of both major socioeconomic and natural environmental issues of the project area such as demography

characteristics, social composition, house hold income and expenditures, land utilization, water resources systems, utilization of fertilizers, chemicals, mobilization manpower, and others.

Annex 3: Major Lists of Competence Certificates /professional licenses/CVs



ቁጥር : ፲፩/፲.፲/1626/10
ቀን : 26/10/2017

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢና ደን ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣ የአካባቢ አዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት **ለአቤል ልማትና እንክብካቤ የማማከር አገልግሎት ኃ/የተ/የግ/ማህበር** በአካባቢ ተፅዕኖ ጥናት ዘርፍ እና በአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት **በደረጃ 1 የአማካሪ ድርጅት** ላይ የብቃት ማረጋገጫ ምስክር ወረቀት ስጥቷል። የባለሙያዎቹ ዝርዝር ተያይዟል።

ከሠላምታ ጋር

ዮሃንስ አመሃ
ተወካይ የአከባቢ ፈቃድ ዳይሬክተሬት ዳይሬክተር

Ref No : 11/1.1/1626/10
Date : 26/10/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO. **ABEL DEVELOPMENT AND PROTECTION PLC AS CONSULTANT IN ENVIRONMENTAL IMPACT ASSESSMENT STUDIES AND CLIMATE CHANGE STUDIES AS A CONSULTING FIRM IN LEVEL 1. LIST OF EXPERTS ARE ANNEXED WITH THIS.**

WITH REGAREDS

Yohannes Ameha
Acting Director, Environmrntal Licensing Directorate

የአካባቢ፣የደንና የአየር ንብረት ለውጥ ሚኒስቴር
Forest & Climate Change

አቤል ልማትና እንክብካቤ የማማከር አገልግሎት ኃ/የተ/የግ/ማህበር የባለሙያዎች ዝርዝር

ተ.ቁ	የባለሙያዎች ስም ዝርዝር	የአማካሪነት መስክ
1	አቶ ዋለልኝ መኮንን	የቆሻሻ አያያዝ ከፍተኛ አማካሪ ባለሙያ
2	አቶ አበበ ጸጋዬ	የዉሃ ሀብት አጠቃቀም ከፍተኛ አማካሪ ባለሙያ
3	ዶ/ር ኑርሁሴን ጣሃ	የብዝሃ ሕይወት አጥኚ ከፍተኛ አማካሪ ባለሙያ
4	አቶ ሻረዉ አንተነህ	የአካባቢ ጤና ከፍተኛ አማካሪ ባለሙያ
5	አቶ መንግስቱ ብርሃኑ	የአካባቢ ማሃንዲስ ከፍተኛ አማካሪ ባለሙያ
6	ዶ/ር ዮሴፍ መለሰ	የኢኮኖሚስት ከፍተኛ አማካሪ ባለሙያ
7	አቶ ፈቃዱ ካሳ	የመሬት ሀብት አጠቃቀም ከፍተኛ አማካሪ ባለሙያ
8	አቶ አለማየሁ ጽጌ	የፖሊሲ፣ ሕግ እና ተቋማዊ ጉዳዮች ተንታኝ ከፍተኛ አማካሪ ባለሙያ

ከሰላምታ ጋር

ዮሀንስ አመሃ
ተወካይ የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

ቁጥር : 11/4.1/869/05
ቀን : 2/13/2009

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣የደንና የአየር ንብረት ለዉጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት **ለአቶ አበበ ጸጋዬ ሀብተየሱስ በአካባቢ ተጽእኖ ጥናት ዘርፍ ላይ የመሬት ሃብት አጠቃቀም ባለሙያ እና የዉሃ ሃብት አጠቃቀም ባለሙያ** የማማከር አገልግሎት ላይ ከፍተኛ አማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

ከሠላምታ ጋር

ዮሀንስ አመሃ
ተወካይ የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

Ref No: 11/4.1/869/09
Date : 2/9/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO **MR. ABEBE TSEGAYE HABTEYESUS** AS CONSULTANT IN **ENVIRONMENTAL IMPACT ASSESSMENT AS LAND RESOURSE USE EXPERT AND WATER RESOURSE USE EXPERT** IN CATEGORY OF **SENIOR CONSULTANT.**

WITH REGARDS

Yohannes Ameha
Acting Director, Environmrntal Licensing Directorate

ቁጥር: 11/1.1/4/67/09
ቀን: 10/12/2009

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣የደንና የአየር ንብረት ለዉጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት **ለአቶ ሻረዉ አንተነህ መኮንን በአካባቢ ተፅዕኖ ጥናት ዘርፍ ላይ የአካባቢ ጤና፣የቆሻሻ አያያዝ እና የጋዝ ልቀት ቁጥጥር ባለሙያ** የማማከር አገልግሎት ላይ **በከፍተኛ አማካሪ ደረጃ** የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

ከሠላምታ ጋር

ለሜሳ ሂርጴ
ተወካይ የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

Ref No: 11/1.1/4/67/09
Date: 16/08/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT, FOREST AND CLIMA CHANGE, BY VIRTUE OF THE POWER VESTED TO IT ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETEN TO **MR. SHAREW ANTENEH MEKONNEN** AS CONSULTA IN **ENVIRONMENTAL IMPACT ASSESSMENT STUDIES ENVIRONMENTAL HEALTH, WASTE MANAGEMENT A EMISSION CONTROL EXPERT** IN CATEGORY OF **SENI CONSULTANT.**

WITH REGARDS

LEMESSA HIRPE
Acting Director, Environmrntal Licensing Directorate

ቁጥር : 11/1.1/6889
ቀን : 04/01/6889

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢና ደን ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣ የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለዶ/ር ኑርሁሴን ጣሃ ኢብራሂም በአካባቢ ተፅዕኖ ጥናት ዘርፍ ላይ የብዝሃ ህይወት አጥኒ ባለሙያ የማማከር አገልግሎት ላይ በከፍተኛ አማካሪ ደረጃ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

ከሠላምታ ጋር

ሙሉብርሃን ታሪኩ
የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

Ref No : 11/1.1/6889
Date : 14/09/16

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO DR. NURHUSSEN TAHA IBRAHIM AS CONSULTANT IN ENVIRONMENTAL IMPACT ASSESSMENT AS A BIODIVERSITY ANALYST EXPERT IN CATEGORY OF SENIOR CONSULTANT.

WITH REGARDS

Mulubrhan Tariku
Director, Environmrntal Licensing Directorate

ቁጥር : 11/1.1/1172/10
ቀን : 18/1/2010

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣የደንና የአየር ንብረት ለዉጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ ፍቃዱ ካሳ ሀብተማርያም በአካባቢ ተጽእኖ ጥናት ዘርፍ ላይ የመሬት አጠቃቀም ባለሙያ የማማከር አገልግሎት ላይ ከፍተኛ አማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

ከሠላምታ ጋር

ቅዱስ ወርቅነህ

የአካባቢ ፈቃድ መስጠት ዳይሬክቶሬት ተ/ዳይሬክተር

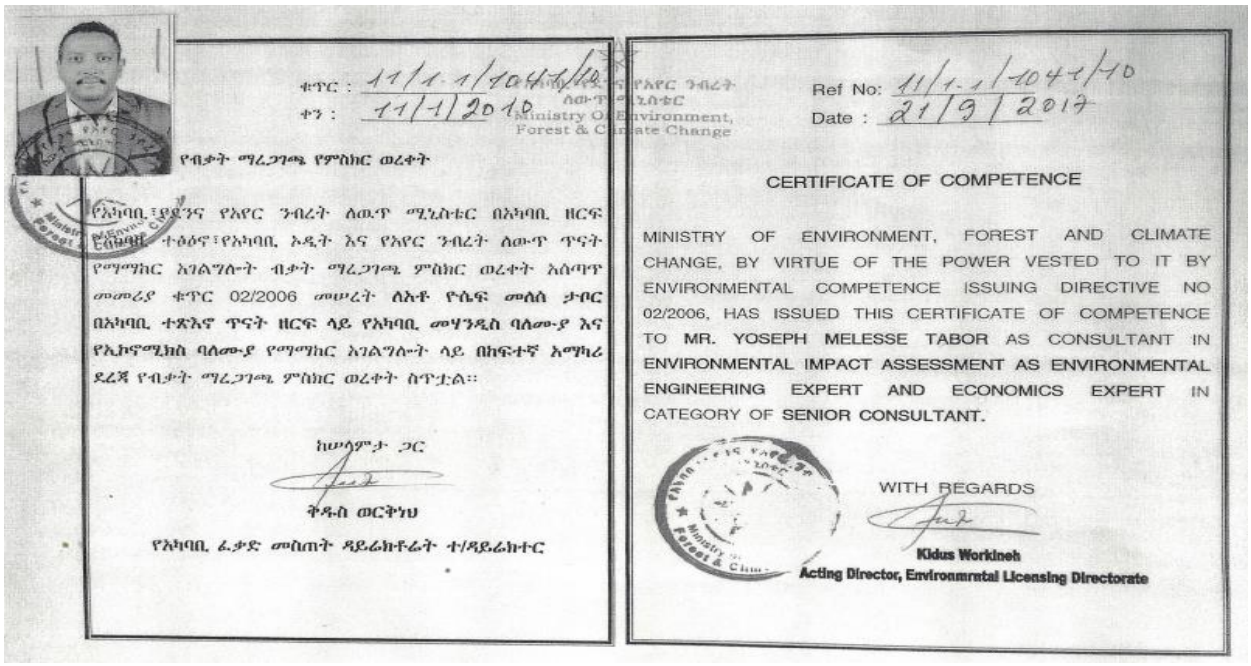
Ref No: 11/1.1/1172/10
Date : 28/9/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO MR. FEKADU KASSA H/MARIAM AS CONSULTANT IN ENVIRONMENTAL IMPACT ASSESSMENT AS LAND USE MANAGEMENT EXPERT IN CATEGORY OF SENIOR CONSULTANT.

WITH REGARDS

Kidus Workineh
Acting Director, Environmrntal Licensing Directorate



ቁጥር : 11/1.1/1044/10
ቀን : 11/1/2010

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣ደንና የአየር ንብረት ለውጥ ሚኒስቴር በአካባቢ ዘርፍ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ ዮሴፍ መለሰ ታቦር በአካባቢ ተጽእኖ ጥናት ዘርፍ ላይ የአካባቢ መሃንዲስ ባለሙያ እና የኢኮኖሚክስ ባለሙያ የማማከር አገልግሎት ላይ በከፍተኛ አማካሪ ደረጃ የብቃት ማረጋገጫ ምስክር ወረቀት ስጥቷል።

ከሠላምታ ጋር

ቅዱስ ወርቅነህ

የአካባቢ ፈቃድ መስጠት ዳይሬክቶሬት ተ/ዳይሬክተር

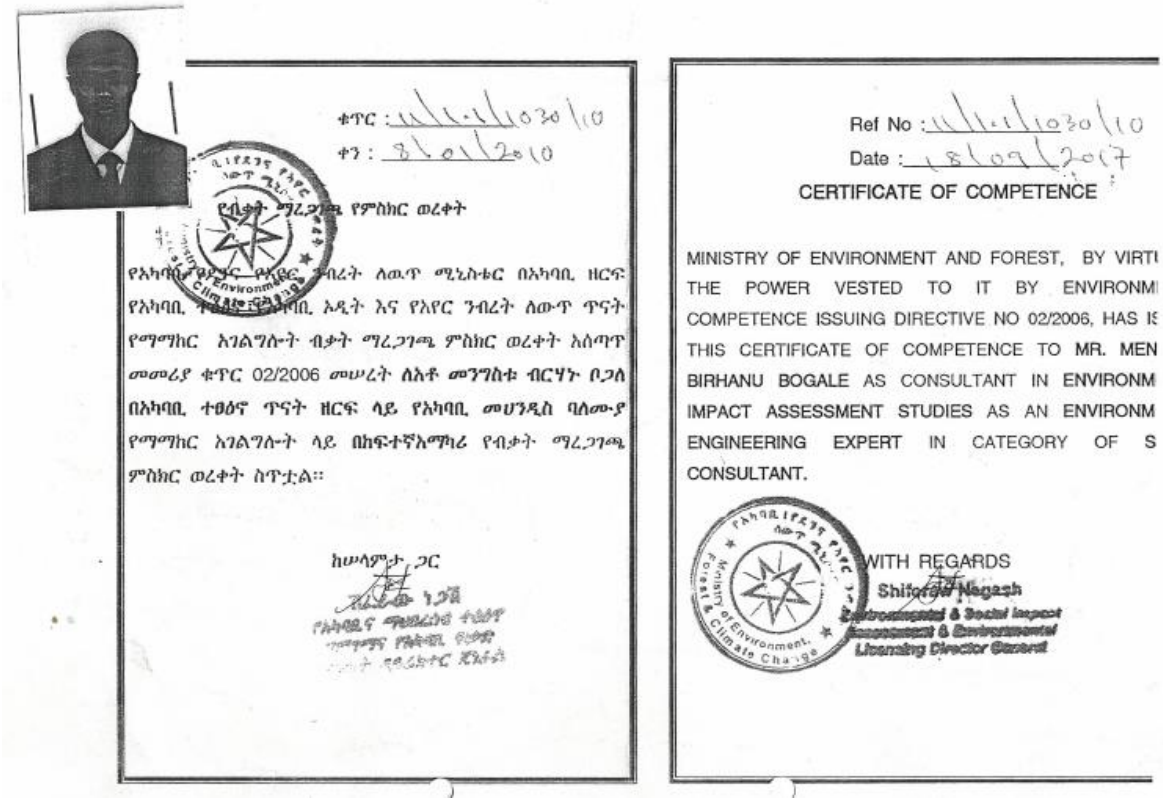
Ref No: 11/1.1/1044/10
Date : 21/9/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO MR. YOSEPH MELESSE TABOR AS CONSULTANT IN ENVIRONMENTAL IMPACT ASSESSMENT AS ENVIRONMENTAL ENGINEERING EXPERT AND ECONOMICS EXPERT IN CATEGORY OF SENIOR CONSULTANT.

WITH REGARDS

Kidus Workineh
Acting Director, Environmntal Licensing Directorate



ቁጥር : 11/1.1/1030/10
ቀን : 8/01/2010

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣ደንና የአየር ንብረት ለውጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ መንግስቱ ብርሃኑ ቦጋለ በአካባቢ ተፅዕኖ ጥናት ዘርፍ ላይ የአካባቢ መሀንዲስ ባለሙያ የማማከር አገልግሎት ላይ በከፍተኛአማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ስጥቷል።

ከሠላምታ ጋር

Ref No : 11/1.1/1030/10
Date : 18/09/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTU
THE POWER VESTED TO IT BY ENVIRONM
COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS IS
THIS CERTIFICATE OF COMPETENCE TO MR. MEN
BIRHANU BOGALE AS CONSULTANT IN ENVIRONM
IMPACT ASSESSMENT STUDIES AS AN ENVIRONM
ENGINEERING EXPERT IN CATEGORY OF S
CONSULTANT.

WITH REGARDS
Shiferaw Negash
Environmental & Social Impact Assessment & Environmental Licensing Director General

ቁጥር : 11/1.1/785/09
ቀን : 25/12/2009

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣የደንና የአየር ንብረት ለውጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ ዋለልኝ መኮንን ውብነህ በአካባቢ ተፅዕኖ ጥናት ዘርፍ ላይ የመሬት አጠቃቀም እና የቆሻሻ አያያዝ ባለሙያ የማማከር አገልግሎት ላይ በከፍተኛ አማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል፡፡

ከሠላምታ ጋር

ዮሃንስ አመሃ
ተወካይ የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

Ref No : 11/1.1/785/09
Date : 31/8/2017

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO **MR. WALELEGNE MEKOMMEN WOUBNEH** AS CONSULTANT IN ENVIRONMENTAL IMPACT ASSESSMENT STUDIES AS A **LAND USE AND WASTE MANAGEMENT EXPERT** IN CATEGORY OF **SENIOR CONSULTANT.**

WITH REGARDS

Yohannes Ameha
Acting Director, Environmrntal Licensing Directorate

ቁጥር : 11/1.1/6875
ቀን : 04/01/09

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢና ደን ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣ የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ አለማየሁ ፅጌ ተክለፅዮን በአካባቢ ተፅዕኖ ጥናት ዘርፍ የፖሊሲና ሕግ ተንታኝ ባለሙያ የማማከር አገልግሎት ላይ ከፍተኛ አማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል፡፡

ከሠላምታ ጋር

ሙሉብርሃን ታሪኩ
የአካባቢ ፈቃድ ዳይሬክቶሬት ዳይሬክተር

Ref No : 11/1.1/6875
Date : 14/09/16

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO MR. ALEMAYEHU TSIGIE TEKELETSION AS CONSULTANT IN AN ENVIRONMENTAL IMPACT ASSESSMENT STUDIES AS A **POLICY AND LEGAL ANALYST EXPERT** IN CATEGORY OF **SENIOR CONSULTANT.**

WITH REGARDS

Mulubrhan Tariku
Director, Environmrntal Licensing Directorate

Ref No : 11/1.1/1407

Date : 17/11/2014

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT AND FOREST, BY VIRTUE OF THE POWER VISITED TO IT BY ENVIRONMENTAL COMPETENCE I SSUING DIRECTIVE NO 02/2006, OF HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO ***MR. BENTI SHIMINA KANAA*** AS ***CONSULTANT IN ENVIRONMENTAL ASSESSMENT AS LAND USE MANAGMANT EXPERT IN*** CATEGORY ***SENIOR CONSULTANT.***

WITH REGARDS

Roman Kassahun

Director, Project Monotring, Evaluation and Licensing Directorate

The Federal Democratic Republic of Ethiopia Ministry of Environment & Forest

ቁጥር : ፲፩/፲.፩/2663
ቀን : 23/05/08

የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣ የደንና የአየር ንብረት ለውጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣ የአካባቢ ኦዲት እና የአየር ንብረት ለውጥ ጥናት የማማከር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት **ለአቶ እሰይ ታከለ ወ/መስቀል በአካባቢ ተፅዕኖ ጥናት ዘርፍ የኢኮኖሚክስ ባለሙያ የማማከር አገልግሎት ላይ ከፍተኛ አማካሪ** የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

ከሠላምታ ጋር

ሮማን ካሣሁን
የተግባሪ አካላት የፐሮክት ክትትል፣ ግምገማና
ፈቃድ መስጠት ዳይሬክቶሬት

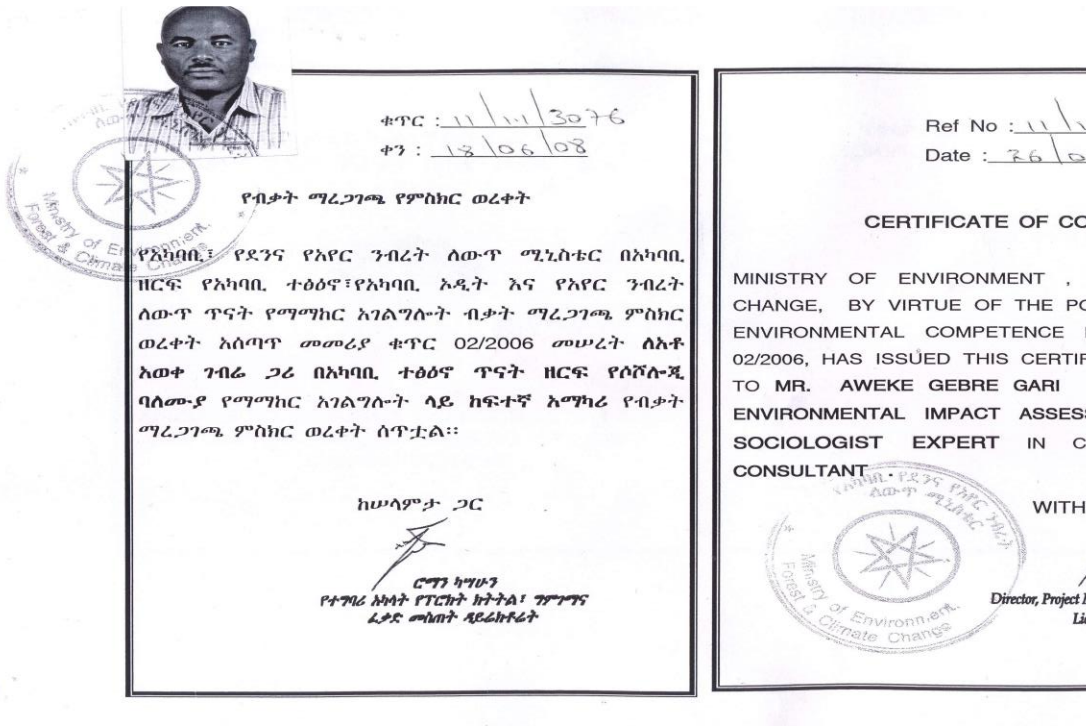
Ref No : ፲፩/፲.፩/2663
Date : 01/02/16

CERTIFICATE OF COMPETENCE

MINISTRY OF ENVIRONMENT , FOREST AND CLIMATE CHANGE, BY VIRTUE OF THE POWER VESTED TO IT BY ENVIRONMENTAL COMPETENCE ISSUING DIRECTIVE NO 02/2006, HAS ISSUED THIS CERTIFICATE OF COMPETENCE TO **MR . ESSEY TAKELE W/MESKEL AS CONSULTANT IN AN ENVIRONMENTAL IMPACT ASSESSMENT STUDIES AS AN ECONOMICS EXPERT** IN CATEGORY OF **SENIOR CONSULTANT.**

WITH REGARDS

Roman Kassahun
Director, Project Monotring, Evaluation and Licensing Directorate



የብቃት ማረጋገጫ የምስክር ወረቀት

የአካባቢ፣ የደንና የአየር ንብረት ለውጥ ሚኒስቴር በአካባቢ ዘርፍ የአካባቢ ተፅዕኖ፣የአካባቢ አዲት እና የአየር ንብረት ለውጥ ጥናት የማማክር አገልግሎት ብቃት ማረጋገጫ ምስክር ወረቀት አሰጣጥ መመሪያ ቁጥር 02/2006 መሠረት ለአቶ አወቀ ገብሬ ጋሪ በአካባቢ ተፅዕኖ ጥናት ዘርፍ የሶሾሎጂ ባለሙያ የማማክር አገልግሎት ላይ ከፍተኛ አማካሪ የብቃት ማረጋገጫ ምስክር ወረቀት ሰጥቷል።

CERTIFICATE OF CO

MINISTRY OF ENVIRONMENT , CHANGE, BY VIRTUE OF THE PO ENVIRONMENTAL COMPETENCE 02/2006, HAS ISSUED THIS CERTIF TO MR. AWEKE GEBRE GARI ENVIRONMENTAL IMPACT ASSES SOCIOLOGIST EXPERT IN C CONSULTANT

1. Name :	Agizew Nigussie Engida	
2. Date of birth:	16/03/1970	Nationality: Ethiopian
3. Contact information:	Email: agiz70@yahoo.com, agizew.nigussie@aait.edu.et	Tel. +251 911 640100
4. Profession:	Hydrologist, Civil and Environmental Engineer	

5. Education:	
2007-2010	-PhD with specialization in Hydrology, Ocean and Atmosphere, School of Earth, Space and Environmental Sciences, University of Grenoble, France
1999 – 2001	(Thesis: Hydrological and suspended sediment modeling in the Lake Tana Basin)
1997 - 1999	-Licentiate of Engineering, Royal Institute of Technology, Sweden
	(Thesis: Urban runoff pollution modelling)
1987 - 1991	-M.Sc., Environmental Engineering & Sustainable Infrastructure Royal
	Institute of Technology,Sweden
	(Thesis: Evaluation of water quality of Little Akaki River, Addis Ababa Ethiopia)
	-B.Sc., Civil Engineering - Graduated with distinction, Addis Ababa
	University, Ethiopia

6. Other Trainings and certificates

- Certificate for Water consulting professionals- Practicing Hydrologist and Environmental Engineer, MoWE
- Certificate for Environmental Protection and Management Professional, Ethiopian EPA
- Certificate for Civil Engineering Professional VII, MoUDC
- ToT on Integrated Urban Flood Management, CAP-Net/UNDP, Nov.7-11/2011 Brazil
- ToT on Conflict Resolution and Negotiation Skills for IWRM, Nile-IWRM, May 1-5/2010 Addis Ababa
- Financing and Management of Local Infrastructure Initiatives, Sida, May 21-June 8/2007 Stockholm

7. Membership of Professional Associations:	• Ethiopian Association of Civil Engineers ,Forum for Environment-Ethiopia and Nile-IWRM

8. Languages:	**Speaking**	**Writing**	**Reading**
Amharic	Excellent	Excellent	Excellent
English	Excellent	Excellent	Excellent
French	Good	Good	Good

9. Selected publications	▪ Reda, Daniel T., Agizew N. Engida Dereje H. Asfaw and Rafiq Hamdi (2014). Analysis of precipitation based on ensembles of regional climate model simulations and observational databases over Ethiopia for the period 1989–2008. *International Journal of Climatology, DOI: 10.1002/joc.4029.* ▪ Engida, Agizew N. and Esteves, Michel (2011). Characterization and disaggregation of daily rainfall in the Upper Blue Nile Basin in Ethiopia. *Journal of Hydrology 399: 226-234.* ▪ Engida, Agizew Nigussie (2004). Application of Mathematical Model for Estimating Urban Runoff Pollution, *Ethiopian Journal of Mathematics*, *Vol. 24, No. 2.* The Mathematical Association of Ethiopia. ▪ Ligdi, E. E.& Engida, Agizew N., (2007*).Ecohydrology as an important tool for Integrated Water Resources management, IWRM in the Nile Basin in Ethiopia*. A country review *p*aper presented to the First Eco-hydrology Workshop held in Africa Hall, Imperial Botanical Hotel, Entebbe, Uganda from 2nd-6th July 2007.UNESCO-IHP FRIEND/Nile Project (Phase II), Eco-Hydrology Component, Entebbe, Uganda. ▪ *Urban Nonpoint Source Pollution: Model development and application*, Licentiate Thesis, Royal Institute of Technology, Stockholm, 2001.
10. Employment Records	
Position held:	**Assistant professor /Lecturer**
Employer	Addis Ababa Institute of Technology ,and other universities
Year:	January 2001 to date
Assignment	Design and delivery of lectures, and advisory works
Duties and responsibilities:	▪ Designing and delivering different graduate and undergraduate courses that include: Stochastic Hydrology; Applied Hydrology; Water resources planning and management; Development of Water supply sources; Stream, Lake and Estuarine Analysis; Advanced water and wastewater treatment; Water quality analysis and modelling; Environmental Engineering; Water quality management; Water supply and urban drainage; Open channel hydraulics • Advising/examining several PhD/MSc thesis works at different universities in the areas of: • Water and environmental engineering ,Hydrological/hydraulic modeling, Climate downscaling and Climate and landuse change impacts on water resources ▪ PhD dissertations in which as an advisor ▪ Decentralized wastewater treatment for developing countries, a case study in Ethiopia, Addis Ababa ▪ Climate Change Impact on Surface Water Resources Potential and Hydropower System in Tekeze River Basin, Ethiopia ▪ Water quality dynamics in the Awash River Basin ▪ Planning for the Informal Settlements in Peri-Urban Ethiopia

Position held:	**Technical advisor**
Employer:	Addis Ababa Rivers and Riversides Corriodor Developnet Plan Project Office
Year:	June 2016 - Present
Assignment:	**Addis Ababa Rivers and Riversides Corriodor Development Plan Project**
Duties and responsibilites:	▪ Contributed to the development of the TOR of the study ▪ Reviewing technical reports deliverd by the consultant
Position held:	**Team leader and expert for Water quality study**
Employer:	Awah Basin Auhtority
Year:	Aug. 2015 – Aug. 2016
Assignment:	**Awash River Basin Water Allocation Modelling and Conflict Resloution and Management Project**
Duties and responsibilites:	Data collection ,Statistical analysis of water quality (univariate and multivariate),Surface and groundwater quality mapping,Design and delivery of tailor-made trainings ,Reports and presentations
Position held:	**Team leader and researcher for water quality study**
Employer:	Addis Ababa University
Year:	Jan 2014 to pesent
Assignment:	**Development of Dynamic and Integrated Water Resources Management System for River Basins of Ethiopia**
Duties and responsibilities:	Contributed to the thematic research proposal development, particularly the water quality component; Involved in the identification of water quality sampling sites and monitoring parameters; Guiding and advising researchers and Reviewing research reports
Position held:	**Climate modelling expert**
Employer:	Ethiopian Development Research Institute
Year:	Jan. 2015-June 2015
Assignment:	**Climate Resilient Production of Cotton and Sugar in Ethiopia**
Duties and responsibilities:	▪ Development of bias corrected rainfall and temperature time series for different scenarios at selected sites ▪ Rainfall characterization ▪ Identification of relevant climate change adaptation measures ▪ Report and presentations
Position held:	**Team leader and expert for urban environmental and water management**
Employer/Client:	Addis Ababa Master Plan Project Office
Year:	Nov 212 – June 2015
Assignment:	**Development of environmental and integrated urban water management plan**
Duties and responsibilities:	Environmental situation analysis, Identification of key environmental issues, Development of proposals for key urban environmental issues, Development of indicative master plan for integrated urban water management (water supply, wastewater management and storm water management),Involved in the river corridor development plan study for rivers in Addis Ababa, Development of implementation strategies for the proposals, Preparing and conducting several presentations (expert-level, stakeholders, national and international) and Preparing different kinds of reports
Position held:	**Urban environmental and infrastructure expert**

Employer/Client:	Wub Consult/Ministry of Urban Development and Housing
Year:	July 2014-Dec 2014
Assignment:	Feasibility study of affordable and accessible high rise housing
Duties and responsibilities:	▪ Situation assessment of urban environmental and infrastructure systems and services in Addis Ababa (Water supply, wastewater and storm water system, solid waste management, green spaces, road networks and energy systems) ▪ Development of feasible environmental and infrastructure guidelines ▪ Reports and presentations
Position held:	**Urban drainage expert**
Employer/Client:	Towers Consult/Jigjiga town Administration
Year:	Mar 2013 – May 2013
Assignment:	Jigjiga Town Drainage Design
Duties and responsibilites:	Defining the drainage characteristics of the town; Determination of the alignment and type of the selected drainage systems; Calculation of design discharges and setting hydraulic design parameters; and Hydraulic design of the selected drainage lines
Position held:	**Team leader and sanitary expert**
Employer:	Ministry of Urban Development and Construction
Year:	June 2012-Aug 2013
Assignment:	**Revision of Plumbing Services Code of Ethiopia**
Duties and responsibilities:	Identification of problems and deficiencies of the existing plumbing services code of Ethiopia (EBCS-9 1995);Preparation of revised plumbing services code for Ethiopia which contains: Water supply, internal drainage, external drainage, storm water management and solid waste management; and Report and presentation
Position held:	**Surface water hydrologist**
Employer:	ENTRO
Year:	October-January 2012
Assignment:	**A Special Study on Surface-Groundwater Resources Evaluation and Water balance for conjunctive use in the Tana-Beles Sub basin, Ethiopia**
Duties and responsibilities:	Review of previous studies; Model input data setup from different sources; Surface water hydrological modelling and Assessing the effect of groundwater on surface hydrology
Position held:	**Surface water modeller**
Employer:	Omega Development Services/Ministry of Water Resources, Irrigation and Energy
Year:	October 2012-present
Assignment:	**Tana Beles Water Information System Project**
Duties and responsibilities:	▪ Contribute to the design and implementation of Hydrologic and Basin Information System (HIS) that monitor surface and ground water, meteorology, water quality and environment ▪ Design and delivery of trainings on HEC-HMS model and Soil erosion and sediment transport
Position held:	**Researcher**
Client/sponsor:	IRD/AAU

Year:	November 2007 to November 2010
Assignment:	**Model-based research on hydrology and sediment flux**
Duties and responsibilities:	Evaluation of existing hydro meteorological and spatial datasets; Disaggregation of meteorological time series ;Model calibration and validation ;Sensitivity analysis ; Simulation of surface water fluxes into Lake Tana; and Establishment of the water and suspended sediment balance of Lake Tana.
Position held:	**Drainage expert**
Employer:	Ministry of Water Resources
Year:	August 2007 to October 2007
Assignment:	**Raya Valley Irrigation Project**
Duties and responsibilities:	Estimation of design flows for surface and subsurface drainage systems ;Reconnaissance survey and determination of drainage system layout; Sizing surface and subsurface drainage networks and Preparing and presenting a report
Position held:	**Environmental expert**
Employer:	Ministry of Water Resources
Year:	March 2006 to May 2006
Assignment:	**Identification of drainage and irrigation projects in the Nile Basin of Ethiopia**
Duties and reponsibilities:	Understanding the nature of the alternative drainage and irrigation projects ;Identifying key environmental impacts associated with each project;Evaluating the environmental impacts ;Prioritizing projects in terms of their environmental impact and Preparing and presenting report.
Position held:	**Graduate assistant-Assistant lecturer-Lecturer/**
Employer:	College of Urban Planning/ECSC
Year:	Jan 1991- Aug 2005
Assignment:	Design and delivery of courses for undergraduate students
Duties and responsibilities:	Head of Urban Management Department ;Designed an delivered courses for undergraduate urban engineering/planning/management students: Hydraulics; Water supply and sewerage; Surveying; Engineering Mechanics; Strength of materials; Ecological planning; Environmental management; Advised student project works ;Designed and delivered short term trainings for urban planners and managers: sustainable urban development; solid waste management and Coordinator and expert training need assessment for national urban management capacity building project

1. Proposed Position : Archaeologist/Cultural Heritage Expert
2. Name of Staff : **Hailu Zeleke Woldetsadik**
3. Date of Birth : **2 February 1976**
4. Nationality : **Ethiopian**
5. Education :

- **MA Degree in Archaeology, Addis Ababa University (July 2005)**
- **BA Degree in History, Addis Ababa University (March 1999)**

6. Membership in Professional Societies: Fellow: Ethiopian Archaeologists and Paleontologists Association

7. Major Trainings ,Researches and Publications :

- Certificate Preventive Archaeology (Cultural Heritage Management, ERM)
- Certificate in Radio Journalism
- Application Software : Ms WORD, Ms EXCEL, Ms ACCESS,: Arc View GIS
- 2006: Led Archaeological Survey Team In Harar To Complete The Unesco Nomination Dossier
- 2005/6: Led Archaeological Team To Tiya World Heritage Site And Produced The First Document Of A Preliminary Management Plan For Tiya World Heritage Site.
- 2007: Led And Conducted A Rapid Archaeological Impact Assessment On Gibe Iii Hydroelectric Project, Along The Omo River.
- 2007: Participated In Archaeological Excavation At Nora, Medieval Islamic Town, With French Archaeological Mission.
- 2006 "Tourism Potential Of The Tiya World Heritage Site" (In Amharic) In Culture And Tourism, V1, No.1
- 2006. "Mekana Selassie Church" In Amharic Language Hamer Magazine With Asemeraw Dessie

8. Languages	**Speaking**	**Reading**	**Writing**
English	Excellent	Excellent	Excellent
Amharic	Excellent	Excellent	Excellent

9.. Employment Record:

Up to 2016	Working as free lancer in different EIA projects
From October 2015 to 2016	The Authority for the Research and Conservation of Cultural Heritage, ARCCH, **Director, Cultural Heritage conservation Directorate**
From: May 2011 –Oct 2015 **Employer; Position held**	The Authority for the Research and Conservation of Cultural Heritage, ARCCH;Acting Director, Cultural Heritage conservation Directorate
From: February 2010 **To** May 2011 **Employer; Position held**	The Authority for Research and Conservation of Cultural Heritage, ARCCH; Senior, Cultural Heritage Researcher
From: June 2005 **To** February 2010 **Employer; Position held**	The Authority for Research and Conservation of Cultural Heritage, ARCCH; Historical Archaeology Expert
From November 1999 **To** May 2002;**Employer;Position held**	International Communication PLC A Reporter

10. Detailed Task Assigned	**11. Work Undertaken That Best Illustrates Capability To Handle The Task Assigned:**
• Coordinate and led the archaeological/Cultural Heritage Management/ Impact Assessment and Evaluation Team	**1.Name of Assignment or Project:** Gibe III hydropower Project **Company**:- MiD-Day Consulting Engineers, **Year:** 2007-April 2008 **Location:** Omo River, Ethiopia **Client:** EEPCO (Ethiopian Electric Power Corporation)

10. Detailed Task Assigned	11. Work Undertaken That Best Illustrates Capability To Handle The Task Assigned:
• Gather all relevant and available secondary sources of cultural and archaeological data • .conduct site survey to assess project footprint and other affected areas together primary data • Marking of cultural heritage sites with GPS • Generating Baseline data Report • Assessment of impacts on cultural heritage and archaeological remains, using methodology developing for this purpose • Development of mitigation measures to manage the identified cultural heritage, • Generating final report on the impact of the proposed project on cultural and archaeological resources, with evaluation Results and mitigation measures	**Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** a coordinator for archaeological impact assessment team, principal archaeologist/senior cultural heritage management expert **2. Name of Assignment or Project:** Geba Hydropower Project **Company**: MiD-Day Consulting Engineers, **Year: 2010** **Location:** Geba River, in Illubabor and Jima zones of the Oromiya state, Ethiopia; **Client:** EEPCO/Salini **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist/senior cultural heritage expert **3.Name of Assignment or Project:** Grand Renaissance Dam Project **Company**: MiD-Day Consulting Engineers; **Year:** May 2011 up to date **Location:** Benishangul-Gumuz Regional State, along the Blue Nile , Ethiopia; **Client:** Ethiopia Electric Power Corporation (EEPCo) **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** Principal Archaeologist senior Cultural heritage Expert **4. Name of Assignment or Project:** Archaeological Impact Assessment and Evaluation on African Oil Ethiopia Project Area, in South Omo Blocks, South West of SNNPRS; **Company**: ESSD Environmental and Social studies;**Year:** February 2011;**Location:** South Omo, Ethiopia **Client:** Africa Oil Ethiopia BV (Africa Oil) **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist **5.Name of Assignment or Project:** A Rapid Archaeological Impact Assessment on Afar Petroleum Exploration Project Area, in Northern Afar. **Company**: MiD-Day Consulting Engineers.**Year: April 2010** **Location: Northern Afar, Ethiopia .Client:** The Afar Petroleum Exploration Project (APEP).**Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist **6.Name of Assignment or Project:** A Rapid Archaeological Impact Assessment on Allana Potash Project Area, in Northern Afar/ERM International and TS Environment Consultants. **Company:** ***TS Environmental Technology/ERM*****. Year: May 2012 .Location: Northern Afar, Ethiopia .Client:** The Allana Potash Project **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist **7. Name of Assignment or Project:** A Rapid Archaeological Impact Assessment on GERD-DEDESSA-HOLETA-ADDIS ABABA Area 500/400kv Power Transmission Project.**Year: June to August 2012** **ation:** Addis Ababa, Western Oromiya, Benishangul Gumuz Regional State. **Client:** EEPCo.**Main project features:** Environmental and social Impact

10. Detailed Task Assigned	11. Work Undertaken That Best Illustrates Capability To Handle The Task Assigned:
	Assessment/Archaeological/Cultural Impact Assessment.**Position held:** principal archaeologist **8.Name of Assignment or Project:** Archaeological Impact Assessment and Evaluation on South Omo Oil Exploration Drilling EIA, near Omorate, Lower Omo .**Company**: ESSD Environmental and Social studies. **Year:** April -June 2012.**Location:** South Omo, Ethiopia **Client:** Tullow Ethiopia B.V. (TEBV) **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist **9.Name of Assignments or Projects:** Archaeological survey/cultural heritage Impact Assessment in the proposed oil exploration drilling sites of Shimela, Basin margin and Tilted Fault Block in Weyto River Valley, north western part of the Chew Bahir Basin. **Company**: ESSD Environmental and Social studies. **Year:** February 2013.**Location:** South Omo, Ethiopia. **Position held:** principal archaeologist **10 Name of Assignments or Projects:** Archaeological survey/cultural tage impact Assessment and evaluation in the proposed oil drilling well sites Kesami, Chereba and Gardim in Weyto-Chew Bahir Basins in Southern opia.**Year:** July -August 2013. **Location**: South Omo, SNNPRS and Borena e of Oromiya Regional State. **Position held:** principal archaeologist **Main project features:** Archaeological survey and impact assessment in the proposed Air-Strip site in Shimela village in Weyto valley in South Nation, Nationality and People Regional State, SNNPRS. Southern Ethiopia. **11.Name of Assignments or Projects:** Archaeological/ cultural heritage survey and Impact Assessment in the newly proposed Gardim well site, Jigra - Gardim access road, borrow pit sites for Shimela and Gardim wells and associated access roads, and drill cuttings disposal site for Gardim well. **Year: July-August 2013. Location:** Bena-Tsemay Wereda, South Omo Zone, SNNPRS. **Position held:** principal archaeologist **12.Name of Assignments or Projects:** Archaeological survey and impact assessment in the proposed oil drilling well sites of Sila Flank 1 and the Sila Flank 2b as well as access Roads to Sila Flank 1 and 2b wells and on the proposed off-site Cutting disposal site in Weyto-Chew Bahir Basins in Southern Ethiopia. **Year:** September 2013..**Location:** Hammar Wereda, SNNPRS and Borena Zone, Oromiya Region. **Position held:** principal archaeologist **13.Name of Assignments or Projects:** Stated in No 12. **Year**: November 2013. **Location:** Bena-Tsemay Wereda, SNNPRS. **Position held:** principal archaeologist **14.Name of Assignments or Projects:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment.**Year:** December-January-March 2014. **Location:-** Bena-Tsemay Wereda, South Omo Zone, SNNPRS and Borena Zone, Oromiya State. **Client:** Tullow Ethiopia B.V. (TEBV).**Position held:** principal archaeologist **15.Name of Assignment or Project:** Preparation of Cultural Heritage and

10. Detailed Task Assigned	11. Work Undertaken That Best Illustrates Capability To Handle The Task Assigned:
	Archaeological Baseline of South Omo Zone, SNNPRS in Southern Ethiopia, for Lake Turkana Developmental Project, Strategic Environmental Assessment (SEA).**Company**: ESSD Environmental and Social studies. **Year:** March –May 2013.**Location:** South Omo, Ethiopia. **Client:** Tullow Ethiopia B.V. (TEBV).**Main project features:** Cultural Heritage and Archaeological Baseline of south Omo Zone for Lake Turkana Development Project, SEA.**Position held:** principal archaeologist **16. Name of Assignment or Project:** Archaeological and cultural heritage survey was conducted in the proposed African Oil Ethiopia BV seismic survey area in Main Ethiopian Rift (MER).**Company**: ESSD Environmental and Social studies. **Year:** August 2013 .**Location:** Main Ethiopian Rift in Oromiya and SNNPRS, Ethiopia. **Client:** African Oil Ethiopia BV **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment **Position held:** principal archaeologist **17.Name of Assignment or Project:** Cultural heritage survey and impact assessment in the proposed oil exploration drilling sites of Falcon Petroleum Limited in Were Ilu I and Were Ilu II (Kon Abo), which are located south and north Wollo zones of the Amhara Regional States, respectively. C**ompany**: TS Environmental Technology .**Year:** May-June 2013.**Location:** North and South Wollo Zones, Amhara Regional State, Central Ethiopia. **Client:** Falcon Petroleum Limited.**Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment. **Position held:** principal archaeologist **18.Name of Assignment or Project:** Cultural heritage survey and impact assessment in the proposed GPB-Afar Petroleum Exploration Project area in Central and Southern Afar. **Company**: TS Environmental Technology .**Year:** June-August 2015.**Location:** Zone 3 and 5 of the Afar Regional State, Ethiopia. **Client:** GPB Afar Petroleum. **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment. **Position held:** principal archaeologist **19.Name of Assignment or Project:** Cultural heritage survey and impact assessment in the proposed Dish Mountain Gold exploration company in Benishangul-Gumuz Region. **Company**: TS Environmental Technology **Year:** April-May 2015.**Location:** Kumruk Woreda Benishangul-Gumuz Regional State.**Client:** Dish Mountain Gold mining Company .**Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment.**Position held:** principal archaeologist **20.Name of Assignment or Project:** Cultural heritage survey and impact assessment in the proposed Gibe IV Hydroelectric Project in south-western Ethiopia. **Company**: Mid-Day Consulting Engineers. **Year:** August 2015 on (in progress).**Location:** in Dawro, konta, Gamu Gofa, Wolayta and Southern Omo Zones of the SNNPRS. **Client:** Salini Consertium **Main project features:** Environmental and social Impact Assessment/Archaeological/Cultural Impact Assessment

10. Detailed Task Assigned	11. Work Undertaken That Best Illustrates Capability To Handle The Task Assigned:
	Position held: principal archaeologist

12. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Signature of staff member or authorized Representative of the staff

Date: Day / Month / Year

CURRICULUM VITAE (CV)	
1.Position Title	**Senior Hydraulic Modeler/Water Resource Mgt**
2 .Name	**Esayas Woldemariam**
3.Date of Birth:	**01 January 1968**
4. Citizenship/Residence	**ETHIOPIAN**

5. MAJOR EDUCATION AND CERTIFICATES

- ***M.Sc. Surface Water Hydrology, Odessa Hydro-meteorological Institute, Ukraine (1986 – 1992)***
- ***From May 19- June 15, 2011 Changsha, China Certificate for attending Seminar on Design and Construction Hydrologic Information Automatic Telemetry System***
- ***From August 17- September 03, 2015, Trondheim, Norway, Certificate for attending training on Hydropower Development and Management***
- ***From January 3-28, 2008 JICA, Addis Ababa, Certificate on remote sensing for groundwater management***
- ***From 21-25 June 2004 Kisumu, Kenya, Regional training course on Data evaluation***
- ***From 22 to 26 September, 2008 Management institute Addis Ababa, Training on ISO 9001:2000 QMS (Quality management system development and implementation course. I-QUAS***
- ***From October 27 to November 1, 2008 Ethiopian Management Institute A. ACertificate on Development management training program***
- ***Computer Skill: Conversant with the following computer applications: Windows XP, MS,Word, Excel, Power point, Access, Project ,GIS, HEC RAS, HEC HMS, WINTR 55 and AutoCAD***

6.EMPLOYMENT RECORD RELEVANT TO THE ASSIGNMENT

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
2016	**Working as free lancer**	Ethiopia	Water Resource development, Hydraulic Modelling ,Water Balanc ,etc

2001 to 2016	**Employer:** Water Works Design and Supervision Enterprise **Position held:** Senior Hydrologist	Ethiopia	-Coordinating and Managing water resources development projects; -Water resources potential assessment of different basins in Ethiopia; -Estimation of water resources for hydropower development, irrigation and water supply (site selection, flow estimation, maximum flow estimation, minimum flow estimation, sediment load estimation); -Selection, installing and monitoring of hydrological stations; and -Review of water resources related development projects
1994 – 2001	**Employer: Ministry of Water Resources** **Position held: Hydrologi**st	Ethiopia	-Studying surface water resources potential -Involved in the formulation of project; Involved in selecting of pilot watersheds - Involved in the strategic planning for setting up of river basins institutions in the country

7. MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

-Ethiopian Rainwater Harvesting Association (ERHA)

- International Hydrological Science Association (IHAS)

8. LANGUAGE SKILLS

Language	Reading	Speaking	Writing
English	Excellent	Excellent	Excellent
Amharic	Excellent	Fluent	Excellent
Russian	Excellent	Excellent	Excellent

9. ADEQUACY FOR THE ASSIGNMENT

Detailed Tasks Assigned on Consultant's Team of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to Handle the Assigned Tasks
Hydrological and river basin modeling study that assesses the water balance in the Omo-Turkana basin including:- -Estimation of monthly tributary flows into Omo river including from Kenya sides; -Estimate monthly reservoir and flood plain	**9.1 Name of assignment or Project:**Kuraz sugar development Feasibility and detail design study project **Year**: June 2011 – Mar 2013 **Client**: Sugar Corporation

evaporation; -Estimate monthly dependable rainfall in Kuraz irrigation areas and lake Turkana and reservoir areas -Estimate monthly variation of Omo-valley flood plain area and volume of flood lost by evaporation based on at least 10 years 2005-2015 high resolution satellite map (natural condition) -Estimate Gibe III flood reduction (saving of water) on the Omo valley using Hydraulic model (HEC-RAS) and HEC-Resim -Establish river basin model (Omo-Gobe-Turkana- Turkwel) to assess the impacts of development (both in Ethiopia and Kenya) on the Lake Turkana water level using HEC-RESIM USACE software and other related works	**Positions held**: Deputy project Manager/Senior Hydrologist **9.2 Name of assignment or Project:**Ratte irrigation feasibility and detail design (South Omo) **Year**: June 2010-June 2011 **Client**: SNNPE -Bureau of Water Resources and Energy **Positions held**: Project Manager/Senior Hydrologist **9.3 Name of assignment or Project:**Weito and Konso, Irrigation projects (South Omo) **Year**: September to November 2009 **Client**: Generation Integrated Development **Positions held**: Senior Hydrologist **9.4 Name of assignment or Project:**Wangur , small scale Irrigation project **Year**: January to March, 2011 **Client**: Metaferia consulting PLc **Positions held**: Senior Hydrologist **9.5 Name of assignment or Project:**Arjo-Dedessa Hydropower and irrigation feasibility and detail design project**Year**: November 2007-June 2010 **Client**: Ministry of Water Resources and Energy **Positions held**: Project Manager/Senior Hydrologist **9.6 Name of assignment or Project:**Gumara irrigation feasibility and detail design project **Year**: November 2007-June 2010 **Client**: Ministry of Water Resources and Energy **Positions held**: Project Manager/Senior Hydrologist **9.7 Name of assignment or Project:**Erer and Golocha irrigation feasibility projects **Year**: May 2006-June 2008 **Client**: Ministry of Water Resources and Energy

	Positions held: Project Manager/Senior Hydrologist **9.8 Name of assignment or Project:**Genale-Dawa River Basin Integrated Development Master PlanProject **Year**: November to December, 2006 **Client**: Yeshi Ber Consulting and Lahmayer Germen based Consulting firm) **Positions held**: Water Resource Expert **9.9 Name of assignment or Project:**Wabi Shebele river for basin integrated development master plan study Y**ear**: Dec 2001-May 2004 **Client**: Ministry of Water Resources and Energy **Positions held**: Hydrologist **9.10 Name of assignment or Project:**Ogaden, Aysha and Danakil river basins integrated master plan development study project Y**ear**: Nov 1994 - Apr.2001 **Client**: Ministry of Water Resources and Energy **Positions held**: Hydrologist **9.11 Name of assignment or Project:**Genale, Guder, Baro and Geba rivers hydropower plant study project Y**ear**: Jan 1998-Jan 1999 **Client**: Ministry of Water Resources and Energy **Positions held**: Hydrologist **9.12 Name of assignment or Project:**Dire Rose for pressurized irrigation project (Holeta) Y**ear**: April, 1999 **Client**: Private Farm **Positions held**: Hydrologist **9.13 Name of assignment or Project:**Tis-Abbay, Tekeze and Gojeb rivers hydropower plant study project

	Y**ear**: Jun 1996-Dec 1997 **Client**: Ministry of Water Resources and Energy **Positions held**: Hydrologist **9.14 Name of assignment or Project:**Kebabo dam for irrigation project (Tigray) Y**ear**: January to March, 1997 **Client**: Concert Engineering P.L.C, **Positions held**: Hydrologist

10. EXPERT'S CONTACT INFORMATION

Addis Ababa, Ethiopia

P.O.Box: 101333,Tel.: +0911426605, E-mail: esumariam@yahoo.com, esumar2006@gmail.com

11. CERTIFICATION:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience, and I am available to undertake the assignment in case of an award. I understand that any misstatement or misrepresentation described herein may lead to my disqualification or dismissal by the Client, and/or sanctions by the Bank. All CVs should be signed by the proposed staff.

Name of Authorized Representative of the Consultant (The same who signs the Proposal) Signature Date

PERSONAL INFORMATION(CV)

Position: Senior Water Resources Developer/ Mgt./Hydraulic/Natural resources

Full Name: Abebe Legesse Reba

Date of Birth: July 19, 1979

Gender: Male

Address: Bole sub city,Addis Ababa, Ethiopia

Contact: Tel: +251-911-47-5001

Email: abeltgl@yahoo.com, Skype: abeltg1

Nationality: Ethiopian

Marital Status: Married

EDUCATION

Oct 2012-June 2015 MA in Water Resources and Development, Addis Ababa University, College of Development and Environmental Studies, Addis Ababa, Ethiopia

Oct 2013-Apr 2015 MSc in Hydraulic Engineering, Land and Water Development, UNESCO-IHE, Institute of Water Education, Delft, Netherlands

Oct 2009-Jul 2010 Postgraduate Diploma in Water Resource Management; Cairo University, Faculty of Engineering; Oman, Giza P. O. Box 12613 Cairo, Egypt

Oct 1998-Jul 2002 B.Sc. Degree in Forestry 'Debub' University, 'Wondo' Genet College of Forestry; P. O. Box 128 'Shashemene', Ethiopia.

MEMBERSHIPS& CERTIFICATIONS

- Certified Hydraulic Engineer (2015 to present)
- Certified Natural Resources Management Consultant (2011 to Present)
- Certified Environmental Impact Assessment Consultant (2010 to Present)
- Member of International Federation for Peace (Oct 2010-present)
- Member of Environmental society of Ethiopia (2015 to present)
- Member of Ethiopian Red cross Society (2008 – present)

TRAININGS/WORKSHOPS/SEMINARS/**ATTENDED**:

Training/Workshop/Seminar Title	Organizer/Organization	Place	Duration
Safe Use Of Waste Water In Agriculture	Water Net In Collaboration With UNDEP	Johannesburg, South Africa	Sept 26 -29, 2012
Integrated Water Resource Management	MoWE In Collaboration With AAU	AA, Ethiopia	Sept 19 -24, 2011
Environmental Hydrology For Arid & Semi-Arid Regions	Hydraulic Research Institute	Delta Barrage, Cairo, Egypt	May 2011-July 2011
Map Digitizing, Data Manipulation And Analysis, Arc GIS	Delta Development Management Service	AA, Ethiopia	Aug 6-22, 2007
River Basin Planning And Management And The Participatory Approach	MOWR	AA, Ethiopia	Jul 5-9, 2004

EMPLOYMENT RECORDS/WORK EXPERIENCE

I. Full Time

June 2013-Present	Motion Consultancy and Training P.L.C., P. O. Box 34337, Addis Ababa, Ethiopia
Position Held:	*Chief Executive Officer*
Dec 2011-Sept 2013	Ministry of Water and Energy, P. O. Box 5744, Addis Ababa, Ethiopia.
Position Held:	*Senior Irrigation and Drainage Researcher*
Mar 2011-Decem 2011	Ministry of Water and Energy, P. O. Box 5744, Addis Ababa, Ethiopia.
Position Held:	*Senior Water and Watershed Researcher*
Jun 2009-Mar 2011	Ministry of Water and Energy, P. O. Box 5744, Addis Ababa, Ethiopia.
Position Held:	*Ecologist*
Jul 2007- Jun 2009	Ministry of Water and Energy, P. O. Box 5744, Addis Ababa, Ethiopia
Position Held:	*Emergency WASH Preparedness' and Response coordination Expert*
Mar 2004-Jun 2007	Ministry of Water and Energy, P. O. Box 5744, Addis Ababa, Ethiopia.
Position Held:	*Wildlife Expert/Forester*
Aug 2002-Mar 2004	Ministry Agriculture and Rural Development, P. O. Box 39, Bure, Ethiopia.
Position Held:	*Junior Instructor*

II. Part Time

Aug 2009-Apr 2011	FRI-EL Ethiopia Farming and Processing PLC, P. O. Box 2190 code 1110, Addis Ababa, Ethiopia
Position Held:	*Chair of Advisory committee, Monitoring and Evaluation Expert and Agronomy*
Sept 2005-Dec 2009	Social Welfare Development Association, P. O. Box 32660, Addis Ababa, Ethiopia
Position Held:	*Assistant Food security &and environmental program Officer*
Jul 1999- Sept 2001	Debub University Wondo Genet College of forestry
Position Held:	Nursery Forman, Forest Inventory and Surveyor

III. MAJOR CONSULTANCY SERVICE (Detail)

Position	Service Title	Location	Organization/client	Duration
Project Manager	Engineering and Construction Management Service [ECMS] For Omo-Ratte Cotton Farm Project	Addis Ababa/Omo Rate, Ethiopia	FRI-EL Ethiopia Farming and Processing	Dec 2015-Present
Biodiversity Specialist	Environmental and Social management Plan (ESMP) for Merfic Iran gas LPG Project	Oromia Region, Ethiopia	Merfic Iran gas	Feb –April 2016
Biodiversity Specialist	Environmental and Social Impact Assessment of Allied Energy LPG Project	Oromia region, Ethiopia	Allied Energy	December 2015
Natural Resource Expert	Developing integrated watersheds management Plan for selected Micro watershed in Rift valley basin	RCWDO-Central Rift Valley, Ethiopia	Ethiopia	Apr -June 2015
Natural Resource Expert	Assessment of Climate Change Impacts &Vulnerability and Adaptation Options for Enhancing Ecosystem and community Resilience Project	Central Rift Valley, Ethiopia	AAU-HoRECN	Aug –Oct 2013
Environmentalist	Environmental and Social Impact Assessment (ESIA) of Badima-Adikuala Road project	Tigray Region, Ethiopia	SATCON	2013
Environmentalist	Environmental and Social Impact Assessment of Kombolcha-Jarso Road Project	Oromia Region, Ethiopia	SATCON	2012
Neutral Resources Expert	Environmental and Social Impact Assessment of Sawula-Maji Road Project	SNNPR, Ethiopia	STADIA	2012
Environmentalist	Environmental and Social Impact Assessment of Debark-zarema Road Project	Amhara Region-Ethiopia	Core Consultants	Sept 2012
Watershed Expert	Feasibility study and detail engineering design of Irrigated Farm development study	Omo Rate	FRI-EL Ethiopia Farming and Processing	April-October 2012
Natural Resource Expert	Environmental and Social Impact Assessment study of Verdenta Harvest Tea and Allied crops project	Gambela Region, Ethiopia	MaEnRe	June 2012
Environmentalist/Forester	Environmental and Social Impact Assessment of Chida-Sodo Road Realignment in Gibe III Hydropower project	SNNPR, Ethiopia	Midday consultants	Mar 208

MAJOR TRAININGS DELIVERED

Training Title	Trainee/Organization	Place	When	Duration
Resilience & Adaptation to Climate Change	Pro-Development Network	AA, Ethiopia	Feb 2016	8hrs/Session
Environmental and Social Impact Assessment	Motion Consultancy and Training	AA, Ethiopia	From 2015	40hrs/Session
Integrated Watershed Management	Hope College of Business, Science and Technology	AA, Ethiopia	2016	8hrs/Session
Ecosystem Services and Sustainable Development	Motion Consultancy and Training	AA, Ethiopia	From 2016	8hrs/Session

RESEARCH/CASE STUDIES/REPORTS

- Assessment of Irrigation water loss, the case of Ful-tino irrigation scheme in Awash River basin (2015) Ethiopia.
- Improving irrigation Efficiency and filling Yield gap in Ethiopia, The case of Belebela Irrigation Schemes (2015) Ethiopia.
- Evaluation of Hydraulic and Hydrologic Factors on Conveyance Efficiency: Case of Fantale and Tibila Irrigation Scheme, Ministry of Water and Energy (2012) Ethiopia.
- Water Resource Development Projects in Abbay, WabieShable and Omo-Gibe River Basins, literature review, (2007) Ethiopia.
- Over and Under Bark Total Volume Equation of PinusPatula Tree, case of Shashemene Forest Enterprise, B.Sc Thesis (2002) Ethiopia.

LANGUAGE SKILLS

	Speaking	**Listening**	**Reading**	**Writing**
Afan Oromo:	Excellent	Excellent	Very good	Very good
Amharic:	Excellent	Excellent	Excellent	Very good
English:	Excellent	Excellent	Excellent	Excellent
Arabic:	Fair	Fair	Fair	Fair

OTHER SKILLS

- Computer applications such as Microsoft offices tools, WMS, GIS, Aqua crop, etc

CERTIFICATION:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

Signature of staff member or authorised representative of the staff *Day/Month/Year*